

FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

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U.S. Department of Agriculture

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SATURDAY, JUNE 21, 1913



Highland Laddies

THE EDITOR'S
BULLETIN OF BETTER
THINGS COMING

WITH THE EDITOR

ADVERTISEMENTS
IN FARM AND FIRESIDE
ARE GUARANTEED

Cover Design

The gentle art of angling will receive attention on the cover of the next number. It's a true-to-life father and son picture that will suggest to many fathers a way to spend an occasional afternoon.

Special Articles

California's Anti-Alien Land Law Legislation will be discussed in the next number by a Californian who has made it his business to inquire into the labor and land-ownership situations on the Pacific Coast.

When someone asks why alfalfa belongs on every farm he assumes that it does belong there. That is the common idea nowadays. This present year is witnessing much interest in alfalfa by those who have not studied it nor sown it before. The reason for this interest will be explained in the next issue.

The Headwork Shop

As announced on Page 6, the next prize contest will be on the best uses for old hoes. All contributions to this contest must be mailed before July 10th. No manuscripts will be returned; those found available will be paid for at Headwork Shop rates.

Poultry

One poultry-raiser thinks Indian Runners are a "snap" to raise; another takes just the opposite view. A part of this discussion will be given in the July 5th Poultry Department. The summer problems of the poultry-keeper are difficult ones. The summer issues of FARM AND FIRESIDE will have much to say that will interest the men confronting those problems.

Crops and Soils

If you are just beginning to raise alfalfa you may be in doubt when it should be cut. Prof. H. J. Waters of Kansas tells his experience in the next issue. There will be some practical facts about the thrashing season too. The common facts are pretty well known, but some of the newer wrinkles that are meeting with success will be discussed this season.

Live Stock and Dairy

To make rape serve its purpose requires some planning. It is easy to grow, but not so easy to feed. Wm. Dietrich knows about both, and will briefly mention his experience. Fly-time suggestions will likewise be made.

"In Frontenac Cave"

Don't fail to read the first instalment of this story in the present issue. It is an adventure story full of hair-breadth escapes; and there is a nice girl in it too, though she may not have much to do with the adventures. "In Frontenac Cave" is by Hayden Caruth, author of "Track's End." "Track's End" was first printed in the *Youth's Companion*, where it attracted much attention; afterward it made a very successful book. Those who have read "In Frontenac Cave" think it is even better than "Track's End." Judson Pitcher tells both stories, and in this the reader will first meet Captain Archway, Gil Dauphin and the notorious Isaac Liverpool, not to mention the million bats which inhabited the mysterious vaults of the vast cavern.

Some New Cookery Recipes

Mrs. Jessie V. K. Burchard is a practical housekeeper who believes that the work of the farm housewife should be simplified, particularly in the preparation of meals. Beginning with the next number, she will contribute regularly to the Fireside Department, and our readers will find her recipes practical, easily prepared, wholesome and perfectly delicious.

Fashions and Needlework

Miss Gould will give us a page of very practical and good-looking patterns for the summer-time, and the needlewoman will find in the article on Swedish weaving a charming new way to finish the hems of guest-towels and other handsome towels.

Who Pays
the Experts?

"Farm advisers," "county demonstrators" and others who teach farming to the farmers are all the rage now. The attitude of the working farmers of the Nation to this new movement has not yet been fixed. We are all a little dazed by the new development. We see a cloud of dust down the road, and when it reaches the front gate we find that it is raised by a regular train of automobiles loaded to the guards with experts come to tell us how to grow alfalfa and the reasons why we should do so. We pay nothing for the well-paid gentlemen's services. Someone else pays them. Who? Why?

Nobody can complain if there is some dust in our eyes and some dazedness in our brains after the whole affair is over and the train of automobiles or railway cars has passed on to the next farm or railway station. There is too much dust in the air for clear seeing.

Nobody need wonder, then, at the feelings of a well-known writer who expresses himself thus in one of our esteemed contemporaries:

The question is asked in a recent issue: "What is the objection to farm advisers?" I would like to ask, first of all, why these wise and useful (?) people do not farm on their own account, and show by their work what can be done?

It takes brains, as we all know, to farm successfully these days; but it takes experience, practical sense and good, hard work, as well. A good many people prefer to "work" their mouths instead of bending their backs and soiling their pretty hands. There is a considerable class of men who live in cities who are land-owners ("farmers"), who make a business of farming the farmer.

They want farm advisers to advise their tenants; and that is what is creating the "demand" for advisers. These rich and mighty landlords and smart experts (such as they are) are of little or no use to the ordinary farmer. (Which is a fact they will never fully comprehend nor understand, it is safe to say.) If we allow the system to continue, slavery will fasten its tendrils still more firmly about the farmer. There will be nothing left for him but to do the bidding of the master, who, of course, will think he knows best. Choose.

Now, this is far too important a matter to decide on any basis of prejudice. There are county farm advisers at work this summer in sixty-six counties of the United States of which the writer has reports—and there are no doubt more. So the movement has a big start.

Who is paying the bills? Well, most of these men are working under the joint or separate auspices of the state experiment stations, the United States Department of Agriculture and certain great manufacturing, transportation or financial interests. The splendid demonstration work done by Dr. Seaman A. Knapp in the South was financed largely by Rockefeller money. I understand that there is much Rockefeller money available for similar work in the North.

The International Harvester Company has appropriated a million dollars to foster the work of furnishing farm advisers, and has put Dr. P. G. Holden, the great corn and alfalfa expert, at the head of its service.

The Crop Improvement Bureau of the National Council of Grain Exchanges has another million-dollar fund under the control and general direction of Mr. Bert Ball, to which a great mail-order house of Chicago has added another fund for the purpose of helping the state colleges and experiment stations to place a county demonstrator in every county in the United States.

Mr. H. H. Gross is at the head of the National Soil Fertility League, well financed by certain railway and banking interests, as I understand it, which has similar objects and oceans of money.

Science and
Calloused Hands

All these agencies, except possibly the mail-order house, have been in the past considered by the farmers more or less antagonistic to their interests. The farmers are buyers of transportation, the railways are sellers of it—and they have not been exactly chummy. Rockefeller's name is an anathema to many of us. The National Council of Grain Exchanges has fought the farmers' movement for co-operative elevators in the most piratical manner. The great harvester company sells machinery, and the farmers buy it. There are many farmers who feel exactly as does our contemporary—and the movement for farm advisers financed as they are financed must meet this feeling and cope with it. It may as well be met in the open. Why say "Hush!" for the purpose of keeping things in the dark? Here's the situation—let's talk it over openly.

And first, is it right for us to reject the advice of men, simply because they are not hard-working farmers? Farming is a science and an art on which we want all the light we can get. Most of these men who are going about telling us how to farm know what they are talking about. They have had the chance to study the things we only work at. They haven't had to make every minute count in the field, and they have tried experiments. These experiments are worth millions of dollars to the farmers who will pay attention to them. I know actual hard-working farmers who have made themselves rich by putting into effect on their farms the principles discovered by the experiment stations. The farmer who looks askance at the farm adviser because his hands are not calloused is not wise.

A Good
Movement

As for the railways and the grain exchanges and the banking and real-estate interests, it is perfectly plain that they are all vitally interested in the prosperity of the farmers. Their interest is selfish, of course, but we are all selfish, and so long as our various brands of selfishness all run in the same direction we ought to be able to work together in harmony. As long as the governments of State and Nation do not furnish this money themselves, is it not the wise thing on the part of farmers to get all the good they can out of the farm adviser, the farm demonstrator and the county helper? There may be, I admit, a possibility of danger in a great body of teachers among us maintained by financial interests or by any agency aside from ourselves—our Government. But get all the good out of the movement you can—and you can get a lot of it.

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Consumption Cures a Failure

THE so-called "consumption cure" exploited by Doctor Friedmann, and which has temporarily raised the hopes of the Nation, has been pronounced a failure by the *Journal of the American Medical Association*.

The announcement now comes that Dr. Peter Duket has discovered a serum which will cure consumption. He has claimed to be able to cure ninety per cent. of all early cases of consumption, and somewhat smaller percentages of patients in the later stages of the disease.

Looking behind the scene, we observe that the main result of his consumption cure is a long list of death certificates; an investigation into some of the cases reported in his advertising booklet and of others treated shows that out of a total of eighteen patients treated only four are now alive, the others having died of consumption. At present no consumption cure is recognized by the medical profession. Pure air and clean living come nearer to a cure than any treatment that has been announced up to the present time.

Soil Sweetening and Soil Fertilizing

TOO often when the crops are being seeded, the mind is so concentrated on the need of furnishing an abundant supply of plant-food that another important factor—a sweet soil—is forgotten. Putting expensive fertilizers into soil that is too sour is practically the same as throwing money into the fire. Many plants cannot use fertility that is kept locked up in an acid soil.

If half the cost of commercial fertilizers now being used in many seeding operations were devoted to liming the land, the harvest might be doubled. "Better marketing" is now a popular slogan, but with it there must be coupled another, "economic production." The fertility locked up in sour soil is idle money in a bank. Sweetening such soil puts that money into circulation.

Why Pump a Cow for Seven Days

EVERY few months some breeder of finely bred stock announces the performance of a cow that has broken a seven days' or thirty days' record for milk or butter-fat production.

The value of the cow jumps from about \$125 to \$5,000 or \$10,000, and orders for the animal's prospective offspring begin to pour in if the matter has been given the proper publicity.

Finally an auction sale is held, and brothers and sisters of the famous animal are sold on dummy bids for large sums, which are also given publicity.

FARM AND FIRESIDE looks with disfavor on these practices. They are shams, and silly shams at that. Granted that the milk of a certain cow for seven days or thirty days is a record-breaking yield, of what index is that to the true value of the cow compared with other cows?

Forced feeding and expensive care will make almost any cow a better producer, but not necessarily a better cow. The cow whose productive capacity has been forced to the utmost may thereafter be a poorer cow both as a milk-producer and for breeding.

For the racetrack or the circus or show ring or other grandstand purposes exceptional feats are desired, but those are contributors to the gate receipts or auction-sale proceeds rather than to the welfare of agriculture or to that of the dairyman.

If we could get them we would like to publish the biographies of great animals written something like this:

My best cow, Dolly Dimple, died at age of twelve years from natural causes. She produced in her lifetime 112,500 pounds of milk, containing 4,500 pounds of butter-fat, which sold for \$1,500 at the local creamery. She has a living progeny of five daughters, each now

yielding over 12,000 pounds of milk annually, and of four sons, which are the heads of high-producing herds.

Isn't that better than something like this:

Adelyue Belle Clothilde XIV., who in her third year broke the world's butter-fat record by producing 46,189 pounds of butter-fat in seven days, was to-day found dead in her stall. According to a veterinary diagnosis, acute indigestion was cause contributing to her premature death, and it is stated unofficially that the four milkings which she received daily during her record test resulted in a physical decline noted some months ago. While not a successful breeder, she will be remembered as one of the world's most wonderful cows.

FARM AND FIRESIDE considers the result of any milking test of less than a year's duration as misleading. It shows the skill of a clever herdsman more than the ability of the cow.

A year's record, honestly and competently made, is a good thing; a two years' record is better, and a life record, including the offspring of the animal, is the best of all for the purpose of establishing champions or comparing cows. What do you think about it?



City-Proof

I'VE seen the sights of cities,
With their bustle and their noise,
And I've gone to their the-ay-ters
And have been out with the "boys."
But I don't fancy living
Where life burns up too fast
And everything's so speedy
That the present seems the past.

I'm always most contented
Just after I get back
And settle down to quiet ways
And milk old Spot and Black.
You'd call me sort of city-proof
'Cause I can't see its charm;
We've all the right to choose our ways,
So I'll stay on the farm.—D. S. Burch.

Corn Clubs of the South

ACCORDING to the enrolment list at the Georgia State College of Agriculture, 10,000 boys and 2,500 girls are enrolled in the corn clubs of Georgia. The Corn Club of Carroll County alone has an enrolment of 312 boys.

The purpose of the organization of these clubs is to demonstrate the possibilities of raising large crops of corn economically all through the State. The present work is a development of several years.

Boiled Dinners on the Black List

FOOD experts long ago pointed out the very small quantity of mineral matter and bone-building material in succulent vegetables. Now Josephine C. Berry, a household expert and food scientist, has found that when such vegetables as spinach, cabbage and carrots are boiled they lose about half of the small amount of mineral constituents which they contain. Spinach, for example, gave up more than fifty per cent. of its mineral constituents, and cabbage, forty per cent. As the loss of mineral matter in these foods makes them less nutritious, the problem of retaining these mineral parts of the food assumes some importance.

Tests made to compare boiled with steamed vegetables showed the losses of the valuable mineral matter was much less when the vegetables were steamed. Therefore, when the liquid extract of boiled vegetables cannot be conveniently utilized, steaming is to be recommended from the standpoint of nourishment. Or, if steaming is impractical boil the vegetables in the least amount of water possible. The principal elements lost by boiling are calcium, magnesium and phosphorus, which enter largely into the structure of the bones.

Honey and Sugar

A LITTLE reckoning by bee-keeping authorities has framed up an estimate showing that the possible aggregate annual income from honey could be increased two hundred million dollars in this country alone without overstocking our bee pasturage. Roughly speaking, this would allow each man, woman and child two pounds of honey—enough for an appetizer but hardly sufficient to demoralize the market for "free sugar" even if Congress grants it.

Captains of Farm Industry

MOST of the great captains of industry have succeeded largely because of their ability to handle men. They have facilities for getting other people to do their work and have profited by the labor of those whom they employed.

The labor problem on the farm will be solved not by a large pay-roll, but by a large amount of good horseflesh and possibly an investment in power machines. The three and four horse teams of the Middle West and the huge tractor outfits of the dry-farming country have made farming in those sections profitable in spite of the shortage of human labor and the stupendous problems of drought. The sun has set for the day of one-horse implements for general farm use.

The price of a peck of oats or a gallon of gasoline is coming to be the best kind of a daily pay-roll. The amount of work actually accomplished, and not the weariness of your muscles, determines whether the day has been well employed.

When Feeds are Poisons

SO MUCH has been said of the excellent feeding value of skim-milk for calves and pigs that we are inclined to become careless in keeping the milk and pails in which it is fed in the best condition. We expect results as a matter of course rather than as a matter of good feeding. Skim-milk is a product which quickly loses its best feeding properties if poorly handled, and skim-milk is good only when care is observed in cleaning the pails and troughs, and in feeding it when fresh. These facts are especially important in summer.

A fly-blown feeding trough or pail will bring about bowel troubles, and skim-milk ceases to be a desirable food as soon as it is contaminated. It is then an organic poison and acts as such on animal tissues.

Peaches That Bring Premiums

Increase Your Net Returns by Studying the Markets and Using Standard Packages

By E. O. Mueser

THE chain of operations which constitute the business of growing fine peaches for market cannot be considered complete until the crop has been placed in the hands of the consumer. Furthermore, the business does not rest on a sound business basis unless all those concerned in it are left fully satisfied. This includes not only the grower and the consumer, but also the much-abused commission merchant.

It is an undeniable fact that many growers succeed in bringing a crop of peaches to maturity in good shape, yet fail signally in the final step of marketing the same to good advantage. Who at the horse show has not watched a horse come up to the bars bravely, lose heart the last moment and turn back defeated? There is something analogous to this in the make-up of the man whose nerve gives out at the precise moment when most necessary to success.

So much of the outcome depends upon his foresight, his judgment, his faith, his intelligent supervision, the way he copes with emergencies, upon what might be called his "peach sense," that without such personal equipment even the best of mere methods must fall far short of giving best results.

I Anticipate All My Needs

A brief account of the handling of a peach crop based on my own experience may nevertheless be of some help, especially to the beginner, if he will supply his own judgment and modify any rules given to fit his own conditions. My orchard consists of five varieties of peaches, which for the most part follow one another in close succession, a circumstance of some importance which depends of course upon the proper selection of varieties at the time the orchard was set out. The picking season extends from early August to well into October.

Some weeks before the picking season opens a careful estimate is made of the expected crop in order to know the quantity of baskets and crates that will be needed. It is a good plan to order more packages than the first estimate would warrant.

To fall short of baskets during the harvest is a calamity indeed. A fair average first crop on four-year-old trees is one and one-half baskets per tree. Five-year-old trees will perhaps average three baskets. An orchard at the best period, when trees are seven or eight years old, may average five or six baskets per tree, and even better records have been made occasionally.

I find that one half to two thirds of the crop is of a size that can be shipped in crates. The six-basket Georgia carrier, which is the package I use, can be bought delivered, in the flat, at a cost of about fifteen cents each in thousand lots.

The baskets I use are the fourteen-quart Jersey peach-baskets, the kind that is double nailed with a solid round top which fits snug on top of baskets. I find that the best packages are cheapest in the end. The loss of a few crates or baskets of fruit in transit soon wipes out the slight saving made in buying the cheaper packages. Good baskets cost only seven cents including the top, and they are worth it.

For both carriers and baskets a paper cushion is used which fits on top of the fruit; these can be had for ten to fifteen dollars per thousand. Suitable labels for use on ends of carriers are provided. The label gives the package a proper finish. It should be distinctive because of good design rather than through gaudy colors. Just above the label is the place for stamping the grade of the fruit contained in the package.

As soon as the carriers arrive, they are set up ready for use. A man will nail two hundred or more of them a day.

A properly constructed packing and sorting table is a necessary part of the equipment of the packing-quarters. It consists of a frame thirty-eight inches high, set up solidly and divided into compartments of convenient size by crosspieces. Burlap is stretched over the entire top. The weight of the fruit will soon make the burlap sag enough to form pockets. Running the length of the table on both sides a ten-inch



We talk prospects

board is fastened at such a height that a carrier placed upon it will come just even with the top of the sorting-table.

The table is so placed that one side of it is convenient to the side of the room where the fruit is received from the orchard. This side is occupied by the sorters, the opposite side by the packers. Behind the packers and opposite the sorting-table is a solid nailing-bench. Here the crates are nailed up and stenciled. The convenient arrangement of these tables will be fully appreciated when the rush comes. A supply of all necessary stencils, strings, brushes or dusters and some lace paper for lining the upper tills of the carriers complete the equipment of the packing-house.

About this time, too, I pay my commission man a visit, or, better yet, invite him up to visit the orchard. I want to get him interested in my crop. We talk prospects of the coming season. I tell him how I am going to handle my fruit, and he gives me some good suggestions and tells all about the requirements of the market and his particular customers.

I learn that the fruit must arrive by a certain hour each day, and that I am to wire particulars of each shipment before arrival. With a good understanding of the market end of the business and doing my part well, the commission man will be able to introduce my fruit to his very best customers.

This is a good thing for the buyer: it saves him much time and worry, and for this he gladly pays a higher price for the goods. So long as I maintain my high standard I can demand a good price for my brand of goods, and the same buyers will compete each day for whatever I may ship.

By doing business this way, my goods gain a reputation in the market which secures for me at once the highest returns and establishes my dealings in the market on a secure basis.

The commission man notifies me daily by wire of all sales so that I am always fully informed on market conditions before making each day's shipment. The commission man does me valuable service, and he is certainly entitled to his ten per cent. I don't know of any other way in which his work could be performed any better or any cheaper; I certainly could not do it myself.

The Pickers Receive Full Instructions

It will be noticed that, during the last few days immediately preceding the first picking, some of the peaches have developed size in an astonishing manner. They are now nearly or quite twice as large as they were three or four days before, and there is a suggestion of yellow in the green part of the fruit on the shaded side. If the peach is given a half turn on its stem, and a gentle pull, it will come off. It is ready to pick.

Fortunately the first day's picking will be light, because this gives all hands an opportunity to become familiar with the work at some leisure, and undue speed without experience would result in poor work.

The pickers must learn not to test of the ripeness of a peach by pinching it, but entirely by its appearance of maturity, the size and by a gentle pull. The fruit in picking is carefully laid, not dropped, in peach-baskets which are carried suspended from a hook attached to a belt which is worn around the waist. As soon as a basket is half filled, it is set in the shade of the tree and a new basket started. The baskets are only half filled so that the fruit on the bottom may not be bruised from the weight of that above. The pickers are instructed to lay any especially handsome fruit on top of the basket. The first day there may be only a few peaches picked from any one tree, and perhaps none at all from some.

The aim is to pick only such as are ready, yet all of such, so that on the following day there may be none that should have been picked before.

The partially filled baskets are gathered on a spring wagon that carries a framework made of four-inch boards nailed together checkerboard-fashion. Each basket fits down into one of the squares secure from danger of being upset. The fruit is then brought directly to the packing-house.

The second day's picking will be much like the first. Overnight some of the fruit that was quite unfit the day before will have noticeably swelled up and will show the now familiar signs of approaching ripeness. There will be about twice as much to pick as on the first day.

Each day will show a further increase until after the fifth or sixth day, when the pickings will gradually decrease again. From records which I have kept for a number of years, I have determined:

That the average number of pickings for most varieties of peaches under normal conditions is nine.

That the first and last picking amounts to rather less than five per cent. of the total.

That the heaviest picking occurs on the fourth or fifth day.

Also, that the greatest number of baskets picked on any one day will be fully twenty-five per cent. of the total number of that variety.

The Different Grades of Fruit

These figures help to determine the number of pickers and other help that will be needed.

The picking force is in charge of a person of good judgment, whose business it is to keep up the standard of the pickers. This cannot safely be left to the pickers' own judgment, for, while some of them are careful, others constantly tend to pick green fruit or leave such as should be picked.

In the meantime the packing-house is a busy place. Here the fruit is graded and packed and made ready for the final journey to market. It will readily be seen that if the pickers have done their work well it helps the sorting and packing. As the baskets come in from the orchard they

are passed on to the bench in front of the sorting-table. The sorters inspect each peach and place it in one of the pockets provided for the various grades. The largest specimen will go into pocket one; the next size in pocket two. These two sizes make up about two thirds of the crop and constitute the carrier stock. The third size is placed directly into a new basket which has its place on the bench to one side. This is the regular basket stock and makes up from one fourth to one third of the crop. A fourth grade is made up of such fruit as may have been injured in some way and of peaches too soft or otherwise below standard. Such find a ready sale locally, in fact we have never had enough of these to supply all that were called for right at the packing-house at fifty cents per basket. Occasionally there will be some windfalls. These are gathered by the pickers at the end of day and sold to the same trade that buys the soft peaches and at the same price.

The peaches that are destined for the distant market must not only have the required size for each grade, but must be of good color and absolutely sound, with no break in the skin, not even a puncture. It should be mature enough to be ripe enough to eat when it reaches the consumer.

The manner of packing peaches in Georgia carriers can be described, but only experience will teach anyone to do it well. There are various packs adapted to the various sizes and shapes of fruit.

The largest grade, which goes into the market as "Extra Fancy," is packed with twenty-one peaches to each till, in two layers. If the fruit runs a little longer than normal another pack is used, which requires eighteen peaches. Sometimes a still finer pack is made, which are shipped as "Specials." These are packed eight in the bottom and seven in top



His nerve gives out

layer, or ninety to the carrier. "Specials" often return a dollar a crate more than "Extra Fancies."

The fruit of the second size is packed either twenty-four or twenty-seven to the till, according to variety and shape. These are shipped as "Fancy." Before the three top tills of a carrier are packed they are lined with lace paper, with the lace part folded over the edge of carrier. After the fruit has been put in place a soft brush is lightly run over it to bring out the color better, the lace paper folded back over the fruit, and the carrier is transferred to the nailing-

bench. The cushion is now placed on top, smooth side to the fruit, and the top is nailed on. The cushion serves to hold the fruit in place and keeps out dust. The fruit is now loaded on spring wagons to be delivered to the railroad station one mile away. All peaches are shipped by express, our rate being forty cents per hundred pounds.

The basket stock is handled in much the same manner, except that the fruit is not laid in regular order. The baskets are gently shaken while being filled so that they will not settle in transit. Some pains are taken to turn "sunny side up" as the baskets are nearly full, but the grade is absolutely uniform throughout the package.

With the more tender varieties cushions are used on top of baskets, but with such good shippers as Elberta a sheet of white paper is laid on to protect them. The lid is then fastened and baskets marked for shipment.

The three important considerations in packing peaches are these:

To have the fruit packed snug so that it cannot shake and be bruised.

To make the pack uniform throughout the package.

To have the fruit of the right stage of maturity.

To maintain the same standard from day to day.

As soon as the last load for the day is on the way, a telegram is despatched to the consignee, our commission man, giving him the number of packages, kind and grades of fruit.

When he receives this information the fruit is immediately apportioned among those who have given an order for it and is delivered on arrival. At no time in my experience have the carriers sold for less than fifty cents to one dollar above best market quotations for the day, nor has basket stock ever failed to sell at a substantial profit.

I Employ Intelligent Workers

A few observations on the help question may be of interest. A considerable number of extra hands are required to handle a peach crop. So far we have had no difficulty to get all that were needed. From the first I have had young men from the city, mostly college boys, wishing to spend their vacation in the open and earn a little extra money. Some of these boys come back several years in succession, and through them I get the rest. They are faithful and intelligent workers.

If rightly handled they take an interest in the work and are distinctly more satisfactory than the average native working by the day, who can only be persuaded to "accommodate" me and is frequently unwilling to be instructed. The boys are made to feel that they are a responsible part of the enterprise. They have something of that spirit of enthusiasm that comes to the voluntary worker who knows he is doing something distinctly worth while.

This spirit does not leave them when it becomes necessary to pick fruit in a soaking rain, and they respond cheerfully when occasionally there is work to do after regular hours. On the other hand, when our work permits it there will be a day given over to play and fun, and the boys will hold a chess tournament or go fishing.

In the packing-house women are employed largely both as sorters and packers. Some of the packers have become quite expert. Speed in this kind of work is, however, always a secondary consideration compared with skill. I found that one sorter [CONCLUDED ON PAGE 11]



Notifies me by wire



I hire college boys



I avoid the agents

Dairies of Milch Goats

If Profitable in Europe, Why Have They Not a Future in the United States?

By May B. Lindley

MILCH-GOAT raising is a new industry attracting much attention. The rewards are high, it requires little capital, and the alert farmer, or even his wife, can add to the family income from this source by raising the animals for sale, selling milk or renting milkers, with little expense and less labor. Goats' milk is endorsed by scientists and recommended by our Government, which made the first importation of Swiss stock in 1904.

The selection of the females from common stock requires the observance of a few rules to insure getting an animal worthy of her position as a milk-producer. The milch goat in America had no market standard whatever before 1903. Prices were fixed by the seller to suit his own ideas. Milch goats, however, represent two distinct original types. They sprang primarily from the wild native goats found on this continent, creatures of untamed, hardy blood, and the finer strains of animals brought to this country by immigrants in sailing-vessels before the days of quarantine. These imported goats were the finest of the Old World stock, since the departing foreigner took his best goat as he did his best household furniture. The goat's duty on the vessel was to supply the children with milk on the voyage to their new home, and therefore her milk production was a determining point in establishing her fitness for the trip.

To-day Switzerland leads the world in the production of milch goats. On the rocky heights of the Alps they have been bred for centuries, nurtured with a care and understanding which brought out all the finest traits of dairy animals. Their milk is one of the Swiss burgher's staple articles, and he has studied to secure the richest and most abundant milk possible. And this he has succeeded in doing, housing the beloved flocks at night under his cliff dwelling, safe from Alpine snows, and sending them daily to their "alp," or

broad head and graceful, refined contour are also to be noted. The age of a goat is not so important as in other animals, since the goat does not deteriorate and become useless until late in life. Their average age is twelve years. Under five years the full set of teeth is not complete. After that it is possible to judge only by the eyes, condition of the horns and lack of agility.

Two breeds of imported Swiss goats are standard and rated as the finest milch goats in the world by the highest authorities. These are the Toggenburg and the Saanen. The Toggenburg justly holds the palm for superiority, since her milk production, her period of lactation and the quality of her milk are unexcelled. The Toggenburgs are brown, some short-haired and some with a shaggy coat, but all have a distinguishing white bridle on the face and lighter

States. Crossed with the best selected stock, the results have sometimes been astonishing.

There is a misconception concerning the milch goat that prevents many consumers of milk from becoming interested in them. The milch goat has comparatively little of the goat odor that is found offensive where ordinary scrub goats, buck goats in particular, are allowed to stay near farm buildings or are kept in the back yard. The well-bred milch goat insists on having clean, sweet food and pure water, and her milk is as fine-flavored and sweet-smelling as that of a high-class dairy cow where the feeding and stabling are equally favorable. The daily production of milk varies from about one and one half to four quarts of milk a day, with an average between two and three quarts.

The best type of milch goats will give from twelve to eighteen times their own weight in milk each year for ten to twelve years, while the average production for the best milking cows is not over six to twelve times their own weight in milk each year, and cows, as a rule, are productive for a less number of years. The feeding cost is also in favor of the milch goat. The common estimate is that the cost of keeping eight goats equals that of one cow.

The crossing of the Angora goat with the milch goat has not proved generally satisfactory. The Angora goat has long been bred in Asia Minor for the production of heavy fleeces of mohair, and is naturally a browse-eating animal. The milch goat, on the contrary, has been kept with regard to producing large quantities of fine-flavored milk, and for pasturage is accustomed to sweet-flavored tame grasses, legumes and various so-called weeds that have no ill effect on the milk. Crossing milch-goat stock and Angoras has about the same effect as crossing the Jersey and Hereford, so far as losing the milk-production quality is concerned.



1. Showing udder of imported Toggenburg doe. 2. Pure-bred Toggenburg doe and kids

3. Imported Saanen buck—hornless breed. 4. Pure-bred Toggenburg doe—Anne of Gierstein



5. Magnificent flock of pure-bred and grade Saanen milch goats

feeding-ground, the little patches of green grass in some sheltered niche of the towering mountain-side.

It is from such flocks that the immigrant goat was recruited, and the result could not be other than excellent when that breed was reinforced—not too plentifully—in hardiness by the infusion of new, strong blood from the goats of the western continent.

Hence it follows that in selecting from animals offered for sale on the outskirts of cities, especially in the settlements of foreigners, it is possible to find some remarkable animals at a very remarkable price. While the foreigner knows the worth

of his animal, and would probably ask a somewhat higher figure than for inferior stock, yet it would still be a modest price for such an animal, as compared with the prices asked by goat-breeding specialists.

It is not necessary to look only for the distinguishing features of the finer breeds of goats in making such selection. The crosses often present strange anomalies with regard to color, and yet retain many of the best attributes of milk-producers. There are, however, some points essential to every good milch goat. For large milk-producers, without regard to breed characteristics, the fulness and size of the udder has an important bearing. It should be glandular and knotty, as distinguished from large udders which are soft and fat. The skin should not be too loose, but should be wrinkled after milking, and not have a tense appearance. Large veins, prominent in the udder, are a good indication.

Other qualifications are a thin build, slender neck, and body growing larger toward the back. Short legs,

markings on the legs and under part of the body. They are hornless and resemble the does of the deer family. It is a common belief among the goat-herders of Switzerland that they originally sprang from the chamois. They are very gentle and tractable in nature and possess in the highest degree all the best points of dairy animals. Their necks are long and slender, and they are usually not of large size, although sometimes the bucks, especially the long-haired Toggenburgs, grow to quite large proportions.

The Saanen milch goat is large, white and full, has a hardy constitution and is a heavy milker. The Saanen may be called the Holstein of the goat family. Her period of lactation is said by some authorities to be shorter than that of the Toggenburg, and her milk to lack the richness. But she has plenty of good traits of her own, and represents a type of excellence unlike any others. She also is hornless.

Both breeds have borne importation well and have become acclimated almost anywhere in the United

high grades of the best breeds. The United States Department of Agriculture has restricted the importation of milch goats and other stock from European countries on account of the prevalence of certain contagious diseases in those countries; and until the importation of breeding stock is again resumed, the prices of desirable milch goats must remain almost prohibitive.

In Persia there is a legend regarding the goat, which tells us that the goat, without fault of her own, excited the prejudice of mankind until her life was unbearable. The powers in compensation then made it possible for her to find sustenance on inaccessible mountaintops where man could not molest her, and she was given the power to find by instinct the leaf of healing, so that she would never become ill. And after centuries of isolation she was to return and live again among the haunts of men, to be a "blessed" animal and to be indispensable to his needs, alone having power to save him from many troubles.

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1913 Why Silage Pays What Users Say

Milking-Stools That Have Stood the Test of Time


A Stool for Every Need and All Endorsed by Dairymen Who Have Used Them



THE milking-stools appearing on this page were selected as the best of those contributed to FARM AND FIRESIDE'S Milking-Stool Contest announced in the issue of April 26th. In cases where several contestants presented the same idea, preference was given to the one most clearly expressed.

The absence of the old-fashioned three-legged stool among the favorites submitted was noted with regret and surprise. To prevent the contest from being incomplete the three-legged stool is here presented as the editor's choice.

The next prize competition will be a Horseshoe Contest. Tell in not more than two hundred words your best use for old horseshoes. Prizes will be awarded on the basis of usefulness.



The Pivot Makes It Best

MY FAVORITE milking-stool is the simplest thing that can be made; just like the top part of a piano-stool with only the screw attached. The only essentials to its construction are a tough board one by ten by ten inches with the corners rounded, an augur hole in the center and a leg made of an old fork-handle or broom-handle or any stick handy. The leg should be made with a shoulder to prevent it slipping through the seat. It is light, easy to handle, allows the milker to sit at any angle or turn at will, while the leg acts as a pivot on the ground. When you have a pail in one hand you don't have any trouble putting the stool in the right position, for it has no front or back side. There's only one way to sit on it.

D. A. MCCOMB.




The Pail Swings Around

FOR this milking-stool take an inch hoard ten by fourteen inches, and saw off two of the corners; then nail on two crosspieces ten inches long and four inches wide. Bore holes through them in such a direction as to provide for the necessary slant for the legs. Make four legs from old fork-handles, cutting each leg eighteen inches long. Next make a hoop for holding the milk-pail. Use a half-inch iron rod or an old tooth from a hay-rake.

Have it pivoted just far enough away from the stool so that the pail will not strike when swinging either way. When the cow attempts to step or kick, just swing pail out of the way.

JOSEPH VOLDEN.




The Two-by-Four "T" Stool

AS I am a farmer and cattle-raiser, I will give you my favorite milking-stool and reasons for liking same.

The stool is made of two pieces of two-by-four, each twelve inches long, and spiked together, forming a letter T. I have used different kinds of stools, but like this one best because:

It is easily and quickly made. It is a cheap and durable stool. It never hends or gets out of shape by ordinary usage. It seldom gets broken or damaged. It is light and handy. It is very easily moved while milking cow if necessary. It will stand on smooth or rough surfaces. It can easily be adjusted while milking. It cannot be used for other purposes, therefore is always found where left. And if it should get lost or damaged it is very little expense to make another.

ARNOLD SORENSON.



Lead Her to the Block


I HAVE seen so much valuable time at the milking-hour wasted by men repairing various styles of milking-stools, wondrously and marvelously fashioned, that I feel justified in presenting to the milkers everywhere plans for an indestructible and yet ideally serviceable milking-stool. No contraption of boards and nails can or will stand the usage of the stable or corral.

Take a small log six inches in diameter of light wood, such as aspen, poplar, bass-wood or cottonwood; saw off a piece fourteen to sixteen inches in length. In one end bore an inch hole two inches deep. There you have it, an indestructible stool. Place one finger in the hole and a thumb on the outside of the piece of log, and you easily pick it up.

This stool will stand anywhere. It is particularly adapted to rough floors of stables or side-hill corrals and milking-lots.

When done throw it down, and if all the herd tramps over it no harm is done. When it becomes hadly hattered or dirty use it for firewood and make another. When milking out of doors you can lead the cow to the stool, and thus save the trouble of carrying it.

W. F. WILCOX.



Favorite for Twenty-Five Years

I WILL give you a description of a milking-stool that I got out of FARM AND FIRESIDE about twenty-five years ago, and we have never been without one or two ever since. I have used several other kinds, but this is the handiest stool of all.

The main hoard is eight inches wide and twenty-five inches long, the seat is twelve inches high, or you can make it higher or lower according to the size of cows. It is braced on both sides with slanting strips.

CHRIS HORNADAY.



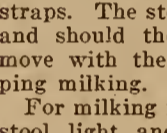
Handy as a Monkey's Tail

MY BEST milking-stool is made like this: Take an inch hoard six inches wide and a foot long, nail a six-inch block across the bottom of the hoard to prevent it from splitting. Then bore an inch-hole in the center of the board, and take a light but strong piece for a leg thirteen inches long and two inches in diameter. Fit it into the hole, leaving a good, square shoulder to rest against the block. Then "toe-nail" all around.

On one end of board nail a strap with a buckle, and on the other end one with holes for a huckle as illustrated. I use hame-straps. The stool is strapped to the milker, and should the cow step about, one can move with the cow, usually without stopping milking.

For milking in a lot or barn, we find this stool light and convenient to handle, as well as safe. It can be used on hillsides or uneven places as well as on level ground.

W. T. WOODEN.




An Empty Powder-Can

MY BEST milking-stool is a twenty-five-pound empty powder-can. This I claim is the best to be had for several reasons:

It is durable and will last for years. It is just the right height for all sized cows. It is light, being made of sheet iron. There is no cost for repairs, as it is almost indestructible. There are no nails to catch your clothes. A wire handle can be put on for carrying it.

The first cost is only a few cents. A person near a mining town can get all he wants by gathering them up, as they are thrown away when empty.

E. W. HUSTON.

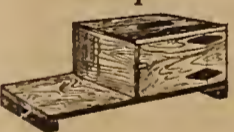


Compact Cabinet Stool

THE diagram shows a milking-stool that has proven very efficient. It is easy to make and so simple that it scarcely requires explanation. The base is a board two feet long, one foot wide and one inch thick. Two two-by-fours are nailed underneath at the ends to serve as rests. The seat forms a box in which are kept salves, sponges and cloths for wiping the cows' udders. The hand-hole in the top furnishes an easy means of carrying the stool.

When you come from the field tired out from a hard day's work it is no fun to hold a heavy milk-pail between your knees when you milk. This stool solves the problem. The pail is placed on the platform, and it makes no difference how heavy it is.

FRANK C. JOHNSON.

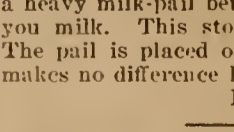


From a Barbed-Wire Spool

TAKE a common barbed-wire spool and saw off parts of each end, as shown in sketch. Nail the four pieces that join the two ends firmly, and you now have the framework of the stool. Next get a thin hoard (I use a part of a store box), and nail on with small nails for the seat.

My reason for selecting this milking-stool is because of its lightness and strength. It is also very easily, cheaply and quickly made. There is no danger of the legs breaking off of this stool, as is the case with some of the three-legged ones, besides it sets firmly on the floor or ground and will not slip.

RAYMOND PYLE.



Almost an Armchair

THIS milking-stool is made for comfort. It is twelve inches long, ten inches high and ten inches wide. The seat is made of several thicknesses of old Brussels carpet nailed to each end and a cleat nailed over that. It must be nailed firmly. Draw carpet tight, and nail well, as it will always sag some.

HOWARD C. CLOSSON.



The Old Oaken Bucket

TAKE a strong three-gallon wooden bucket, put a nail on the bottom end, and you will have a stool that will not easily upset. It will last many years if the hoops are kept tight. I have tried one-legged and two-legged and four-legged stools, but "the old oaken bucket" beats them all, especially if it is a strong bucket. It is cheap, practical, handy, comfortable and can't be easily kicked over.

CHESTER G. REYNOLDS.

Prizes have been awarded to contestants as follows:

The best all-around stool, "The Pivot Makes It Best," by D. A. McComb	\$3.00
The best indoor stool, "The Pail Swings Around," by Joseph Volden	3.00
The best out-of-door stool, "The Two-by-Four 'T' Stool," by Arnold Sorenson	3.00
The most durable stool, "Lead Her to the Block," by W. F. Wilcox	2.00
The best platform stool, "Favorite for Twenty-Five Years," by Chris Hornaday	2.00
The most sanitary milking-stool, "An Empty Powder-Can," by E. W. Huston	2.00
All others published, each	1.00



Stool with Folding Bucket-Stand

THIS milking-stool is designed for the purpose of furnishing a bucket-stand (A) in connection with the stool. The construction of this stool can easily be seen by a study of the accompanying illustration.

When not in use the bucket-stand remains under the stool, but when the milker takes his position the stand is pulled out, the bucket placed on it, and the milker has free use of his hands and legs. When it is lifted at B the end C drops down and the stand slides into its place. It can be made in any convenient size, but preferably about one foot high and sixteen inches square.

HARRY WELLS.

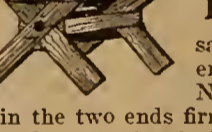


Compact and Comfortable

THIS milking-stool can be made from odd pieces of boards. A one-half-inch board is used for the seat. In the front end of it cut a hand-hole by boring two holes and sawing or whittling out the wood. This hole is used for carrying, moving or hanging up the stool.

This is the best type of milking-stool I have ever used, as it is convenient, light and durable, and when you come in tired from a day's work you can rest yourself, for it is comfortable.

E. C. CURRY.



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CHESTER G. REYNOLDS.

Headwork Awards

First-prize contribution in May 24th issue—"Gate with Foot Latch," by W. E. Moxley; in June 7th issue—"To Keep Rolling Door Closed," by D. S. Mickley.

The Market Outlook

Scarcity of Hogs

By L. K. Brown

THE hog-market has again become healthy and active, and the effects of the April slump have disappeared. Meat demand continues strong, and supply has not materially increased. The run on eastern markets has subsided, and order-buyers have become active again in the western markets. The meat demand has kept the packers' and middlemen's supply in small proportions, and the supply of hogs has not been enough to allow accumulation. Should the predicted June run materialize its effect could only be temporary because of this hand-to-mouth condition of the entire trade. It would simply give them enough stocks to take away the bare appearance from their shelves for a time.

Early clearances of the pens have been the rule, and heavier receipts could be handled without any detrimental effects, for the strong demand could absorb it.

The market outlook for the producer is favorable. Last year at this time the packers had the largest supply of pork on hand that they had had in years. The receipts for the next two or three months are expected to about equal those of last summer. During the early fall months last year this enormous accumulation of meats was consumed before the public realized and without any decided break in provision prices. To-day there is no supply gathered to meet the demand when the time arrives, and the markets between now and then cannot furnish it. Last summer the price advanced from a \$7.50 average in June to a \$9 average in October, when the high point of the year was reached. Just how much the market will advance this year during the same months is doubtful, but the comparative scarcity of provisions would seem to indicate even a greater advance, however. When prices get too high demand decreases, thus partially counteracting it. There is a greater hog scarcity than has generally been realized.

Fat Lambs to the Market

By John P. Ross

THE month of May closed with a rather dull sheep-market caused by a general cleaning up in Colorado and some of the Western States, by the appearance of considerable numbers of southern spring lambs, and by the want of activity in the East. It seems probable that the advent of the northern supply will help to keep down prices in Chicago and other markets. The trade at Buffalo has been very slow, buyers discriminating very closely against lambs running anywhere over seventy to seventy-five pounds. Business seems to have been better in Omaha than in most markets, good Mexican lambs selling freely up to \$8.35, and choice westerns from \$7.75 to \$8.15. Most of the lamb trade in Chicago has been in shorn lambs, best handy weights ranging from \$7 to \$7.50; the common sorts between \$6 and \$6.50. Spring lambs, so far not over-plentiful, sold from \$8.50 to \$9.50; good wetbers, \$5.25 to \$6.75, and ewes about the same. Anyone who has fat lambs ready would probably be wise to send them in; for as the bulk of the new crop comes in a rise in prices is hardly to be looked for, and feed is likely to be plentiful.

The wool-market is quiet, though men competent to judge are expecting a good year unless something more radical than is looked for is done with the tariff. Generally, all the world over, prospects are regarded as very promising.

Anyone studying the reports of the live-stock markets must be struck with the persistence of the call for light weights. In a recent issue of the *Farmers' and Drovers' Journal* the reporter remarks with regard to cattle: "Weighty choice grades little wanted; light, fat yearlings and handy weights gaining killers' favor;" and as to sheep: "buyers are listless bidders for bulk; only light-weight lots sell early; weighty kinds dull." This, under various forms of expression, is a standing feature of these reports from all the leading markets; and it seems remarkable that in face of it so many lambs should be kept to have that last ten pounds added to their weight which removes them, at current rates, from the \$8.50 to the \$7.50 class. This involves not only the lowering of their grade, but the loss of extra time and labor, and of the cost of the extra feed.

As regards lambs, which, now and probably for a long time to come, pay better to feed than any other class of sheep, with the exception of high-bred breeding stock, it should be remembered that it is during the first few months of their lives that their growth is greatest and most rapid. A lamb, for instance, weighing eight pounds at birth, if healthy and blessed with a good mother, is apt to weigh from twenty to twenty-five pounds by the end of his second month, and from fifty to sixty at the end of his fourth, when he will be likely to com-

mand the highest price per pound he will ever attain to. If kept on to ten months and fed high after being weaned, he will probably weigh from eighty to ninety pounds. So in the first period of four months he increases nearly seven times, while in the second period of six months he nearly doubles; besides which, if fat and fit, he, when four months old, will command the highest price per pound he will ever attain to, and cost little beyond his dam's keep; while during the second period he will probably be found to have eaten as much as she ever did while supporting him and, maybe, a twin brother. It seems needless to say more on this point, its lesson is so obvious; but it may be well to point out that this feature in the life of young ani-



The Scotch herder knows the value of the lambs

mals opens up the easiest and most profitable way to supply this, now well established, taste for their meat. Just now, when so much anxiety is being felt as to what will be done as to the free admission of wool and dressed meats, we should not fail to remember that the conditions of sheep culture have so improved since the time, twenty years ago, when the removal of the duty on wool wrought such havoc among our flocks, that any such radical injury is now hardly possible. All the world over the supply of wool is shorter, while the demand for it is greater than ever; and as to mutton and lamb, both the taste for it and the knowledge of how to produce it have so greatly increased that the shepherd of 1913 can view the threatened approach of the stuffed giant free trade much as his prototype David did that of the real giant Goliath; that is, with at least some show of equanimity. Panics belong to sheep, not to shepherds.

Curing "Summer Sores"

By Dr. A. S. Alexander

A READER in Nevada has a seven-year-old Percheron horse, imported from France, for which he paid \$3,600. In August, 1910, the horse broke out with sores, one on the nose, one on the left side just behind the front leg, one on each front ankle, and one on the left hind hock in front of the leg. The owner reports that he dried up, with the use of air-slaked lime, all of these sores at the approach of cool weather, but during the summer of 1911 both front and hind leg on the left side broke out again; and he has not been able to dry or cure them since. He is anxious to know what the sores are and how to cure them.

The stallion has "summer sores," and they are very difficult to heal in summer-time. As a rule they dry up in winter without treatment. Do not let anyone give the severe treatment of burning with red-hot irons, as it would be likely to leave blemishes at the places treated.

Clip the hair off the skin around the sores and cleanse thoroughly for removal of scales and scabs. When dry, rub lard around the sores and then paint each sore with tetrachloride of antimony, sparingly applied. Repeat the application each other day, and when horse is in the stable tie him so that he will not be able to lick or bite the sores. Give him at least eight miles of exercise on the road every day, or put him to hard work, like any farm horse, and on work-horse feed. If the medicine prescribed does not avail, then change to a mixture of half an ounce of picric acid in eight ounces of alcohol, used as a paint every day. After the application, dust the sores with a mixture of equal parts of slaked lime, powdered charcoal and sulphur. This is better than plain slaked lime. If the flies bother add enough iodoform to the powder to keep them away.

Use good judgment in buying farm tools. This implies that you shall see below the paint and the gold finish and be able to tell whether the parts of the machine you plan to buy are well adapted to the work you want them to do. They may be all right for the farmers of some other part of the country, but are they what you want on your farm? That is what determines the value of a tool to you.

Feeding and Breeding for Two-Ounce Eggs

By A. E. Vandervort

IN MARKETING eggs the highest prices can be obtained and the largest profits are made in supplying a retail trade. This is also one of the most satisfactory trades to cater to and is easy to get. There are hundreds of families in every large town or city that are looking for the person who will furnish eggs regularly each week the year around at several cents above the retail store prices. But the best paying customers, whether wholesale or retail, those who are willing to pay ten or more cents per dozen above the highest quotations, are hard to secure. Nevertheless, I find that this class of customers are getting more numerous each year. Such trade, which should be the ultimate goal sought by all commercial egg-producers, must be educated up to an appreciation of high-class eggs before it will pay the highest price.

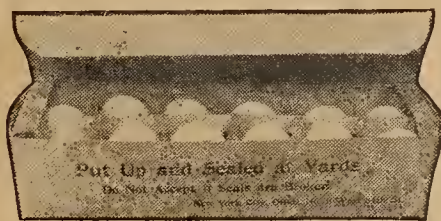
The largest profits must come from superior marketing, and from special market advantages in selling eggs and stock. A difference of only a few cents per dozen makes a large increase in the income, when several hundred hens are kept.

Monthly and Yearly Egg Prices

The average market price of eggs, unlike most farm products, does not vary materially for the same months one year with another. The highest prices for eggs occur in December and January. They are lower in February, still lower in March and April, and lowest in May. In June they begin to come up and continue to rise gradually each month until they reach about the same high price as during December of the preceding year. Thus the poultry-raiser knows in advance, with practical certainty, what he will receive for his eggs month by month during the year. In this respect the poultry-raiser has an advantage over the growers of apples, potatoes, hops, cheese, pork and most other farm products. When the weather is coldest the price of eggs is the highest, and when the weather is warmest the price of eggs is lowest. This gives us the hint that if we would succeed in commercial egg production we must strive to overcome the winter conditions which retard egg production, and thus secure eggs when they will bring the highest prices.

How Best to Establish Your Prices

Working up a large, first-class private trade requires time and tact. The best advertisement is a satisfied customer. Trade grows by one satisfied customer recommending you to another. Much misunderstanding is avoided by fixing the price for the year. There are three ways of fixing the



A neat package is a good investment

price. The first is to agree upon a single price per dozen for the year, and the number of eggs to be delivered each week. The second plan is to decide upon a certain fixed percentage increase; for example, five to fifty per cent. to be paid above the highest market quotations each week, as quoted in the wholesale market. By this sliding scale there will be less incentive for either party to the contract breaking faith. The third plan is to name a fixed price, according to the demand which usually exists at that particular season. A good scale of prices on this basis which is being paid to a certain poultryman of my acquaintance is twenty-five cents a dozen for April, May, June and July; thirty-five cents a dozen for August and September; forty-five cents for October and November; fifty cents for December and January; thirty-five cents for February and March.

A neat package is also a very good investment. An attractive shipping crate has much to do with fixing the price of the product. The person who will take the trouble to prepare a neat package may be depended upon to be equally careful and painstaking about the quality of the goods which he puts into it. Buyers know this instinctively. If a shipping box that only costs a few cents in money and a few hours of time will increase the price of eggs even a fraction of a cent per dozen, and if the crates hold several dozen, not many shipments will have to be made in order to pay for the package. Everyone who has had much experience in shipping eggs and poultry to market, and who has used attractive boxes and coops, can give numerous instances of various orders received from people who have been attracted by the package at the express office or railroad station. A well-stenciled crate is a guarantee of good quality within. It is the earmark of honesty. The man who has poor products to sell keeps his name out of sight. Attractiveness is not the only value of the stencil. A conspicuous stencil mark will save loss of many crates in shipment,

because they are less likely to be overlooked and carried by the station or put off at the wrong place.

The first principle of good marketing is to have good quality to sell. Quality sells itself. A fancy egg should be new-laid; that is, not more than one week old when it is delivered to the customer. It should be free from any foreign flavor due to improper feeding or to the absorption of objectionable odors. The albumen must be firm for beating. The yolk must be rich in color and must not rupture in poaching. There must be no blood-clots. The shell should be spotlessly clean, uniform in shape and color, hard and smooth in texture. A fancy egg must be of a large size, not less than about two ounces each.

Getting Strictly Fancy Eggs

To produce eggs of the highest quality requires skill and care. First, one must keep pure-bred fowls in order to secure uniformity in color, shape and size of egg. This is also true in raising broilers and roasters. Second, eggs must be selected for hatching that fulfil all the market requirements for strictly fancy eggs; and no other should be used.

At first only a small per cent. of the eggs laid by the average flock, even of pure-bred fowls, can be used for hatching. Each year, however, by this rigid system of selection, the percentage of disqualified eggs will be less and less, until even a large percentage of the first eggs from pullets can be marketed as fancy stock. Third, care must be taken to feed rations which contain sufficient nutrients of the right kinds to make perfectly developed eggs of good flavor and sound shell.

What Causes Poor Eggs

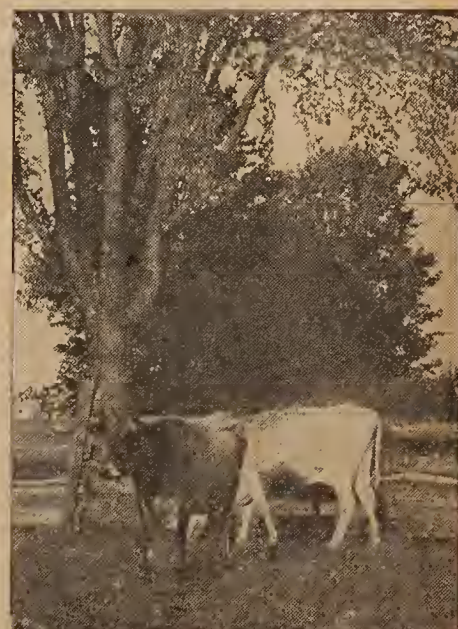
Absence of shell-making material results in soft-shelled eggs. A deficiency of meat or suitable grain will affect the firmness of the albumen. Lack of vitality in the hens will cause the membrane which surrounds the yolk to be weak and easily ruptured. Rough handling of the fowls will cause the follicles to burst prematurely, and blood-clots will be formed in the eggs. Impure water or musty food will affect the odor and flavor of the eggs. An insufficient supply of yellow corn, clover and grass will cause the yolk to be light-colored.

In order to secure a fancy-egg trade the supply of eggs must be continuous. The poultrymen who cannot get a reasonable number of eggs every month in a year cannot hope to secure the highest paying trade. These rich customers will not consider for a moment dealing with a producer who cannot supply eggs during October, November and December. Therefore, one of the first requisites in working up a high-class trade is to be able to deliver the products regularly and continuously. Unless that can be done, one cannot hope to secure much, if anything, above the regular market price throughout the year.

Do Not Sell Bad Eggs

Eggs for a first-class trade must be gathered regularly each day from nests that are especially fitted. If there is any doubt about the freshness of eggs, give the customer, not the eggs, the benefit of the doubt. Do not take any chances; do not sell them. One bad egg will ruin the reputation gained by selling a thousand good ones. The bad egg "unpleasantness" will never be forgotten, even if it should be forgiven by the customer. As soon as the eggs are gathered they should be carried to a cool place and covered with a clean cloth, so that dust cannot settle on them.

A damp cloth is required to rub off any slight discolorations. If it is necessary to wet the eggs, they should be wiped dry before being placed in the crate; otherwise they will gather dust. They should not be washed unless absolutely necessary, because washing destroys the natural appearance of the shell by removing the secretion which covers the pores of the egg and which prevents rapid evaporation from the eggs. Washed eggs do not keep as well as eggs in their natural condition.



Summer

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Crops and Soils

Refusing to Follow Orders

By W. F. Wilcox

MEN who won't take and obey orders are not in demand. True, there are cases where men of rare ability, faithful and honest, are engaged for tasks and sent out to perform the task just as they see it needs to be done. But ordinarily men are engaged to do the bidding of the one who meets the pay-roll.

Everywhere, city and country, wherever men are bired, you will find the same trouble, men refusing to follow out orders, and always getting into trouble as a result. I know a man living in town who hires men to run his farms in the country. On one ranch he has a married man, past middle age, with a large family. The owner declares that it is next to impossible to get this man to carry out an order to the letter. He always wants to do things his way.

"And why," says the owner, "should he presume to do things his way? Here he is past middle age, with nothing to show for his life. He has no property. This in itself tends to show that his judgment is faulty. Then why should he continually persist in doing things his way, when his life shows his way has always been the unsuccessful way?"

That is just it. When men who have accomplished things, have been successful along certain lines and thereby do know what they want done and how they want it done and are willing to pay for it, why should some failure persist in doing things his way, while paid to perform them as they should be done? It is a proposition to solve.

Hay-Covers Pay for Themselves

By J. S. Underwood

I HAVE had my share of trouble getting my hay cured properly in bad weather. Clover especially is hard to cure unless the weather is ideal, for I like to cut my hay with color to it. Even timothy I find is superior when cut green or just past the bloom. I have neighbors who cut their timothy in the morning and put it in the barn in the evening of the same day. This can be done only when the hay is overripe. Then it is rather woody, not so palatable and not so digestible. The practice cannot be recommended.

I cure all my hay in the windrow or cock, and not in the swath. In short, I want my hay air-cured and not sun-dried. Of course it takes longer to cure hay in the piles than when it is spread thinly on the ground, and that is where my canvas covers come in. Some of my brother farmers may object to investing good money in "hay-caps" especially if they have a large acreage in meadow, but I have proven that it pays. The covers I use are made of a square

yard of eight-ounce duck which I buy by the bolt at fourteen cents a yard. Thus each cap costs me fourteen cents, besides the labor of hemming and weighting the corners. I tie an old borseshoe to each corner with a piece of heavy twine, allowing it to hang about six inches from the corner. This will cover quite a large hay-cock, as only the top needs to be protected. If the weather is bad the hay can be left under these covers for a week or more without injury. If the weather is damp I take off the covers and loosen up the hay, allowing the air to circulate. No hay gets spoiled by the heaviest rains, and very little is sun-bleached. It is the only way I know to cure cow-pea hay successfully. I used to lose a great deal of hay by sudden showers, but since I have used bay-caps they pay for themselves over and over, both in quality of hay and convenience in haying.

Now I get my hay in when convenient, and I do not have to call all "hands" to sweat blood while the thunder rolls in the west. Once I had eight acres of rye which I cut for hay just as it was in the dough stage. It was still green and would have made nearly two tons to the acre. The day after I got it nicely cocked up it began to rain and rained steadily for a week. At the end of that time my hay was not worth baling for bedding, so I let it be and later scattered it and plowed it under.

As feed it was worth at least \$10 a ton, and I counted it as a loss of \$160.

One hundred and sixty caps would have saved that \$160, and they would have cost me not over twenty cents each, including work of hemming and weighting, or a total of \$32. That would have given me a net profit on that transaction of \$128, and I would have had my hay-covers left for future crops. I find that when oiled with linseed-oil and carefully dried and put away the covers will last for years.

The leaching manure-heap on the farm furnishes the breeding-plot for a bounteous crop of flies at the cost of low production in the fields where the manure ought to be rejuvenating the soil.

Home-Made Hand Cultivator

By D. A. McComb

AN EXCELLENT hand cultivator for a small truck-patch, that will do excellent work, can be made at very little cost. Get a front wheel from an old ball-bearing bicycle. Be sure you get the complete bearings, spindle and nuts. Take off the rubber tire. Get the following pieces of the lightest lumber possible, but be sure the wood is tough and straight-grained. Elm is good. Two pieces for A, 7/8x2x26 inches. Two pieces for B, 7/8x2x48 inches. One piece for C, 1 1/4x3x22 inches.

Through the front end of the A pieces bore a hole of size to fit on the spindle. Shave the ends thin enough to take a

June on the Farm

By Berton Braley

SKIES are soft and blue and warm
When it's June;
There's a magic wraps the farm
Night and noon;
Every lazy breath that blows
Brings the perfume of the rose.
Who could think of cares and woes
When it's June!

Somehow work is almost play
When it's June;
Life is rollicking and gay
As a tune,
And you hear the hum of bees
And the bird songs in the trees,
Sweet are country sounds like these
When it's June!

Oh, the glory of the night
When it's June,
With the mellow, yellow light
Of the moon,
With the lispng leaves that stir
And the merry crickets' churr
And the voice—the voice of Her—
When it's June.

Besides the fact that crused corn and cob enables the stock to secure more nourishment than whole grain, remember that the cob portion, which usually is wasted, returns to the land as a fertilizer in the animals' manure.

Commercial Fertilizer on Corn

By Geo. W. Brown

DURING the spring of 1912 I prepared a ten-acre field for corn by evenly spreading on oat-stubble ten loads per acre of stable and shed manure, harrowing and pulverizing the manure ahead of the plow. When the field was ready for planting, we drilled into the surface with a fertilizer-drill a guaranteed commercial fertilizer of the following analysis:

	Per Cent.
Ammonia	1
Phosphoric acid (available)	8
Phosphoric acid (insoluble)	1.5
Potash	2

This was drilled at the rate of two hundred pounds per acre, at a cost of \$2 per acre.

One shock-row near the middle of the field, and on average soil, was left untreated. Each shock-row in the field contained twenty-two shocks of 144 hills.

At First There Was no Apparent Difference

All summer we could see no particular difference in the treated and untreated rows. We thought we were losers in the fertilizer game.

First we husked out the untreated acre and weighed the ears, which netted us sixty-one bushels and sixteen pounds, an average yield for our soil.

Next we husked out the two adjoining rows where commercial manure had been applied. The first row netted us sixty-seven bushels, thirty pounds. The second row netted sixty-eight bushels and forty-eight pounds.

Then we went over into the field farther and husked out an average row which netted sixty-seven bushels.

We averaged the product of the three rows and secured sixty-seven bushels and fifty pounds per acre, or a gain of approximately six and one-half bushels over the unfertilized shock-row.

At busking-time the market price for this corn was forty cents per bushel, or \$2.60 per acre gain for the application of commercial fertilizer costing us \$2 per acre to apply.

But we noticed some other features that were valuable. The ears on the treated rows were more uniform in size, filled to the ends with kernels, had a greater degree of firmness and dryness, were more free from mold and rot and consequently were heavier in proportion to size and had more feed and seed value.

The fodder held the blades green from top to bottom of the stalk, producing more roughage than where the blades dried and withered up.

We could have secured a greater gain, probably double or treble, by drilling the fertilizer in the planter rows near the hills, but we were intent on laying a foundation for future crops as well.

Dropping fertilizer into the hill is too much like putting money into the purse and filching it out right away.



More Wheat Per Acre

We cannot control the price of a bushel of wheat, because too many countries raise wheat. But we can increase the profit from an acre of wheat by reducing the cost of production per bushel. There is not much profit in 13 bushels of wheat per acre, which is the American average. There is good money in yields of 25 to 35 bushels. These can be obtained, if one prepares the land right, uses good seed and good fertilization.

POTASH


Good fertilization means enough fertilizer of the right kind. With a good rotation 400 to 600 pounds per acre is enough, provided a reasonably high-grade formula such as 2-8-6 or 0-10-6 is used. The low-grade 1-7-1, 2-8-2 and 0-10-2 formulas are out of date and out of balance, and the plant food in them costs too much per unit. Urge your dealer to carry high-grade formulas or if he is stocked up with low-grade stuff get him to buy some potash salts with which to bring up the potash content to a high grade. One bag of muriate of potash added to a ton of fertilizer will do it.

If you prefer real bone or basic slag in place of acid phosphate try 300 to 400 pounds per acre of a mixture of 1600 pounds of either with 400 pounds of muriate of potash. You will find that Potash Pays.

These high-potash mixtures produce better wheat, clover, heavy grain and stiff straw. We sell Potash salts in any quantity from 200 pounds up. If your dealer will not get potash for you, write us for prices and for our FREE booklet on Fall fertilizers.

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wasber inside and outside and leave room for the nuts. Bore a 5/16 inch hole 2 inches from the other end. Also have the ends of the B pieces to fit against the outside of the A pieces 2 inches back of the bearing-holes, at E. With a little stove-bolt fasten them there. Shape the other ends like plow-handles. Seven inches from the lower end of piece C bore a 5/16 inch hole, and 2 inches from the top end a 7/8 inch hole. Bolt the A pieces to C at D with a 5/16 inch bolt 3 1/2 inches long. Cut a broom-handle to 18 inches long, and slip it to the middle in the hole at top of C, and fasten with small nails. Shave the ends to fit 3/4 inch holes. Make the angle of A and C at D about square. Bore 3/4 inch bores through the handle pieces B at the point where the broom-handle will fit, drive the ends in, and secure with small nails. Mount the frame on the wheel. Use any small cultivator shoe or shovel. If the handles stand too high cut a little off the lower end of C, and set the shoe higher.

The large size of the wheel, the wide rim and the ball bearings, together with the lightness of the material, make this a light and easy running hand cultivator.

When Writing the Editor

WHEN writing to FARM AND FIRESIDE for assistance or advice on any subject please give full particulars. If you wish counsel in purchasing a cultivator or any particular implement tell what crops you want it for, the kind of soil you have, the lay of the land and whether or not it is stony. If you wish veterinary advice mention the kind of animal, age, weight, size, and give a complete description of the manner in which the animal was fed and cared for up to the time of writing. Then give the symptoms and any additional facts which may have a bearing on the case. Finally, sign full name and address plainly. Be explicit and benefit thereby.

Poultry-Raising

How to Increase the Vigor of Incubator Chicks

By F. W. Kazmeier

THE vigor of the chicks determines whether they shall be raised at a profit or loss. It is almost impossible to raise chicks that are weak when hatched. Therefore let us look into the factors which influence the vigor of chicks.

Here are the results of some experiments conducted in West Virginia to determine the vigor of chicks from pullets' and hens' eggs. Of forty-five chicks hatched from eggs laid by pullets, twenty-one chicks died the first three weeks; of sixty chicks hatched from the eggs of two-year-old hens, eight chicks were lost in the same time; from sixty chicks hatched from eggs laid by three-year-old hens, six chicks were lost.

In every case the eggs laid by hens three years old were more satisfactory for hatching than those laid by the younger fowls for the chicks were heavier, and more vigorous than the chickens hatched from pullets' eggs, and apparently somewhat more vigorous than the chicks from eggs laid by two-year-olds.

When and How Much to Cool Eggs

It was also found that eggs from fowls fed heavily during the winter for egg production, did not hatch so well, and the

about a week to two weeks old they commence to die off. This insufficient amount of fresh air in the incubator room causes inflammation of the lungs, and although the chick may have strength enough to emerge from the shell it is weakened to such an extent as not to be able to live more than a few days. This is one cause of so many chicks dying at between two and three weeks of age from no apparent cause. Get all the fresh air into the incubator room that you can without causing a draft or lowering the temperature too much.

More Light on Egg Production

By Dr. Raymond Pearl

THE methods employed in the poultry-breeding work described by Doctor Pearl during the winter were not plain to some of our readers. Their questions were sent to him, and he further explains his point of view.

I regret very much that a misunderstanding should have arisen over any statements in my articles contributed to FARM AND FIRESIDE. The case, however, is only another illustration of the difficulty of dealing with a complicated technical matter in a short space, where one cannot properly qualify general statements.

The facts of the case are these, that while it is necessary that cockerels which are to be hereditarily pure with reference to high productiveness must come from high-laying hens, the converse proposition is not true. That is to say, not every high-laying hen will produce sons that possess this quality. That is the real difficulty of your correspondents. That is to say, there are ten types of Barred Plymouth Rock males

Lessons from a Contest

By R. H. Searle

THE first half of the second annual egg-laying contest, which ended on the evening of May 15, 1913, revealed many interesting facts from which several lessons of value to every poultry-raiser may be drawn.

In this contest there are twenty varieties of pure-bred poultry. There are three pens of each variety, each pen containing ten females, making a total of thirty females of each variety, and a grand total of six hundred females in the contest. During the six months just past, these six hundred females have laid 45,374 eggs, an average of 75.6 eggs per hen. When one stops to consider that this is the average of all the hens in the contest, including six that have not laid a single egg, and that the average production of the hens on our farms is in the neighborhood of 75 eggs per year, this six-months record is remarkable. It shows, first, the value of keeping pure-bred poultry, and second, the value of proper feed and care. That these six hundred hens should average as many eggs in six months as the average farm hen does in an entire year is a matter worthy of serious consideration.

The average number of eggs laid, per hen, of the thirty hens of each of the twenty varieties, is as follows: Silver Wyandottes, 99.2; S. C. White Leghorns, 97.2; Black Langshans, 94.5; White Wyandottes, 89.6; White Orpingtons, 85.1; Buff Wyandottes, 82.8; Buff Plymouth Rocks, 81.2; S. C. Brown Leghorns, 80.1; Mottled Ancousas, 77.9; Barred Plymouth Rocks, 77.8; Buff Orpingtons, 76.8; S. C. Rhode Island Reds, 75.2; Black Minorcas, 73.5; R. C. White Leghorns, 72.2; Black Orpingtons, 68.6; White Plymouth Rocks, 67.4; Buff Leghorns, 62.5; Partridge Wyandottes, 58.2; Partridge Plymouth Rocks, 53.8. While these figures should by no means be taken as conclusive evidence as to which variety is best for egg production, they may be at least taken as "straws which show which way the wind blows," with reference to winter egg production.

No "Luck" in Egg Production

The only really sensational feature of the contest, thus far, is the wonderful record made by the pen of S. C. White Leghorns entered in the contest by an English poultryman. This pen, during the six months, laid 1,234 eggs, which is 153 eggs more than the next best pen laid, and an average of 47.8 eggs per hen more than the average production per hen, of all the hens in the contest.

The question naturally arises, "Why has this English pen so far outdistanced our American pens?" There must be a reason. When ten birds, after traveling on ocean and land for two weeks, much of the time without feed or water, can start right in and make a record of this kind, there must be something more than "luck" behind it.

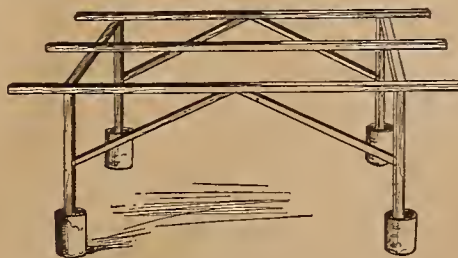
The owner of this pen states that every one of the ten pullets in the pen was bred from a female with a high record for egg production, and sired by a male out of a high-producing hen. Therein seems to lie the secret of the wonderful record which this pen is making. This station has been urging farmers and poultry-raisers for several years to breed from high layers, or at least from good layers. We have also insisted that the males which head the flocks should be sons of high layers. The latter is more important, in our opinion, than the former. Of course it is understood that the breeding stock must be of reasonably good size, variety considered, and also be stock with strong constitutional vigor.

There can be no doubt but that the average American poultry-breeder, during the past few years, has been paying so much attention to the color of feathers and show records that he has lost sight of the more important matter of egg production. One thing is certain, promiscuous and careless breeding will never enable the poultrymen of this country to make any progress in egg production. Careful breeding and selection must be practised if progress is to be made.

Mite-Proof Roosts

By L. H. Cobb

ANYONE who has tried to clean out the mites from roosts that are built in to the hen-house will appreciate the simple plan given below. I make my sets of roosts



six feet long, two feet wide and two feet high, with three two-by-two-inch roosts. The uprights are set in quart cans of water with a half inch of kerosene on top. Mites cannot get on this roost unless carried there by the hens, and it can be easily taken through any door and cleaned.

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From this pen, 1,234 eggs in six months

chicks were not nearly as vigorous as those from hens fed normally to keep them in a good breeding condition.

Experiments were also carried on to determine what influence the cooling of eggs during incubation had on the vigor of the chicks. As a rule during cold weather, much cooling lowered the vitality, and during warm weather, an insufficient amount of cooling or airing also lowered the vitality of the chicks. It is therefore advisable to cool the eggs but very little during cold weather and to increase the cooling as the weather gets warmer. Cooling the eggs until they felt cold to the hand proved in all cases very detrimental to the hatchability of eggs and vitality of the chicks.

In further experiments as to what influence moisture had on the vigor of incubator chicks, in all instances the chicks from eggs which had plenty of moisture were larger and more vigorous compared with others given less moisture.

In tests conducted on our farm and on another successful poultry farm, we found that green food influenced the vigor of the chicks more than almost any other factor. We fed our flock no green food, and the result was a hatch of exceptionally weak chicks. The eggs showed a very low percentage of fertility and hatchability. Then again when we fed too much green food, the eggs showed a lower fertility and the chicks were not as vigorous. Those that we fed just a moderate amount of green food gave us eggs high in fertility and hatchability and the chicks were strong and vigorous, the kind that are bound to live.

This is what we fed and how we fed it: at noon the breeders were given sound cabbage heads, enough to last them until about four o'clock, when all that was left uneaten was taken away. Nothing but good sound cabbage was fed. Precautions were taken never to feed anything in the line of green food that was frozen.

Fresh Air for the Young Chicks

Another factor which we have found to greatly reduce the vigor of the chicks was lack of exercise by the parents especially when confined. We always have plenty of litter on the floor, and into this we scatter all the grain. Make your breeding stock exercise as much as possible, the more they will exercise, the better the fertility and hatchability of the eggs.

Another thing which greatly influences the vigor of incubator chicks is the amount of fresh air in the incubator room. In a poorly ventilated incubator cellar, the eggs may hatch well, but when the chicks are

which are hereditarily different with respect to capacity to transmit high egg productiveness. Only one out of the ten possesses this hereditary quality in pure form. All the others will get a greater or less proportion of daughters that are poor layers instead of high layers. The only possible way to tell in general which type of male one has is through the performance of their daughters, which means on an exact pedigree basis.

Now, under the old experiments which were carried on at this station for ten years in simple trap-nesting where, as your correspondents state, the males were in each case taken from high layers, there were no pedigree tests. In consequence, on the average, only once in ten times would it be expected that a male bird hereditarily pure with reference to high productiveness would be procured. As a matter of fact, the probabilities are not even as great as this because of the cumulative effect of random breeding (that is, breeding without exact pedigrees) in a downward direction. Analysis of those old records shows that sometimes males were procured which had the desired quality. If this had only been recognized at the time and these strains had been in-bred, or line-bred, as one pleases, a very great difference in the final result would have been obtained.

The essential point stated in simplest terms is that with which I started, namely, that while it is necessary that a male bird transmitting high productiveness to all his daughters should come from a high-laying mother, the converse proposition does not hold. That is to say, not every high-laying mother will produce sons which are hereditarily pure with reference to this quality. Some will, and some will not, depending in part upon their own hereditary constitution, and in even greater degree upon the hereditary constitution of the males with which they are mated.

The actual mode of inheritance of this character (fecundity) is an exceedingly complicated one, and it is difficult at first to state it in simple terms.

Fifteen hens to the colony is sufficient.

Rose combs do not freeze as easily in cold weather as the straight, or single, combs. In planning, remember this.

Besides the wonderful rejuvenating effect crop rotation has on the soil, it destroys insect pests, exterminates weeds and furnishes a wide variety of live-stock rations.

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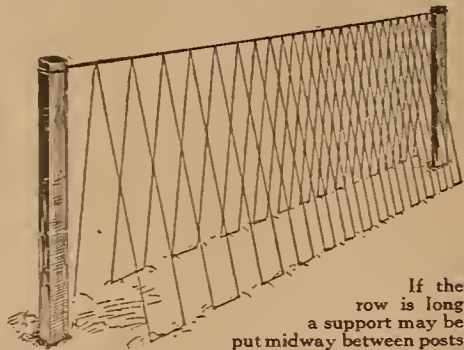
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Garden and Orchard

String-Poling of Beans

By H. O. LeFevre

SINCE the poling of Lima beans is getting more and more difficult each year, owing to the scarcity of poles and the high cost of those to be had, it is quite essential that a substitute be furnished. One very inexpensive and successful plan is to place a post (2x4 or larger) in the



If the row is long a support may be put midway between posts

middle and at each end of two rows, extending at least eight feet or more out of the ground. Stretch a wire on the posts, and run twine (binder twine is good) over and over this wire, and fasten on a hook made of wire, about ten inches long, placed in the bean-hills. When the twine has been fastened to these hooks and you have braced the wire about every twenty-five feet with a crossbrace to keep the wind from blowing it sidewise, go down the rows, and push the hooks firmly into the ground.

One thirty-cent ball of twine will be sufficient to cover two lengths of wire, each 150 feet long. If poles were used it would require at least two hundred, and this wire-and-twine method is just as satisfactory, as it helps to retain the moisture, which is a great help to growers of Lima beans. The posts, also the wire and the hooks, can be used over and over, and the twine is so reasonable in price you can't afford to take time to save it.

Pioneering for Pickles

By G. A. Randall

BEING situated on a new-land farm we crowd every available foot of soil to produce crops. Last June there was still a long strip of brush, trees, logs, etc., on very wet land on the south line of the place. This contained an acre or more. With rubber boots on, we chopped off the stuff, and all the smaller pieces when dry were piled by hand. These were used as fuel and the land logged and stumped. Still there was water. A ditch three feet deep was dug to tap it. This did the business, and it was soon dry enough so the log and stump heaps when fired burned well. The soil was turned with a sharp colter on the plow and harrowed thoroughly. New land works up like a garden, being so full of humus. On the fifteenth one pound of cucumbers per acre was drilled in rows eight feet apart. The rows were cultivated by horse until the vines nearly met. Soon the whole piece was a perfect mat of green vines and yellow blossoms, setting later to thousands of cucumbers. Every morning till frost came we picked these. The best brought sixty cents per bushel at the pickle station two miles away. That jungle in one season (for our family did all the work) netted us \$107.15 from a trifle over an acre.

Experience in Thinning Fruits

By O. R. Abraham

THOSE who have not sprayed and therefore let the insects do a part of their thinning are often surprised at the enormous loads of fruit the trees bear. In a great many cases they let their trees either break under the load, or the apples are of so small a size that they are difficult to market.

This all means that when we spray and spray properly we will have to thin our fruit in the ordinary season after it sets, or before by pruning.

The up-to-date orchardist aims to prune in the winter season to such an extent that there will not be too many apples set, but often he makes a poor estimate. I have pruned after the apples had set and were as large as marbles, but this is a dangerous practice, for you usually knock off many of the fruits that should stay on.

One of the main points I aim to prevent in pruning is the necessity of hand thinning the overloaded tree, for after the load has once set there is practically no other way to get them off but to hand pick them. This I learned to do when beginning to exhibit fruit at fruit shows. Though it is a tedious task, the habit has grown on me till now I thin every overloaded tree if I can possibly get time, for I have found that it is the big fruit that the consumer wants, and I find that the trees bear regularly when so treated.

It is impossible to thin properly by "shaking off," for the larger and heavier specimens always fall first, and it is almost as risky to attempt to knock them off, for the fine ones always suffer. It is therefore necessary to hand pick them as carefully as at picking-time; yes, more carefully, for we do not want a single imperfect apple. With a ladder I go over the trees carefully, working the tree section by section, or one limb at a time, being careful not to knock off the fruit with the ladder. I often find a part of the tree that has less apples than the other parts. In such cases, to make this part of the tree do its part, it may be necessary to leave some that are slightly inferior.

What to do with these culls is an individual problem. On my farm, where we usually have plenty of pigs, we let them follow us while at work and clean up the culls. I often make a first thinning and fail to get off enough. In that case I let the summer varieties become nearly grown, then pick and market the largest, letting the others grow for a while. This is very advisable with some varieties.

Why Clustered Fruit is Troublesome

Unless you find them very profitable, do not plant varieties that bear in clusters, for these are hard to spray thoroughly, besides they do not color as well or grow as large when two to five are on the spur. If you do have these varieties and have to thin, be sure to thin where there are too many on the spur. Pull the stem from the young apple or break it, for if pulled loose where the cluster attaches it will make a weak place in the other stems at their junction, and when the apples that remain grow to be large they will drop off. Thinning is very necessary if you are to grow the finest fruit. This must be done either by pruning or by hand thinning.

Pole Trellis for Vine Fruits

By M. A. Bedford

HERE is a simple trellis that can be made from poles and forked sticks. First set the two highest forked sticks, and place the top pole across them. Then select poles long enough to make an angle of forty-five degrees from the vertical when leaned against the top pole. Now set the other forked sticks and complete the trellis as illustrated.



This trellis is excellent for vine fruits, as the leaves naturally grow uppermost, and the fruit hangs down and is shaded. When hoeing put the weeds under the trellis where they will act as a mulch to conserve moisture.

Thinning Fruit in the South

By Bradley Hancock, Jr.

BUT few farmers are in the habit of thinning their fruit, and to this fact may be traced the imperfection of a great deal of the fruit and the irregularity with which the trees are fruitful. Too often the trees are heavily loaded one year and produce very little fruit the next summer. During the bearing season the vital forces of the trees are strained to their utmost in growing and ripening an excessive quantity of fruit. Nature does her best, but is not always able to carry out what has been begun. Much of the fruit drops from the tree before it is fully formed, and a large part of what remains is only imperfectly developed and ripened. But the partial failure to perfect the fruit is not the greatest evil which is involved in this overproduction. The tree is so exhausted by its overload that it cannot recover at once. The wood which has formed during the season cannot be thoroughly ripened and is frozen during the winter. The next spring but few blossoms are put forth, and little or no fruit is formed during the summer. This is the natural result of overbearing. If the trees are left to themselves the trouble becomes permanent. One year there is a great excess of fruit, while the next year there is an equally great scarcity. The best, perhaps the only, remedy is to be found in thinning the fruit early or in mid-season. It does no good to apply stimulating manures. The natural method of checking the evil is to commence soon after the fruit is well set and thin off a large proportion of the specimens. You should not wait until the fruit is more than half grown, as the energies of the tree would then be seriously impaired. Some good would be done, even then, it is true, but the remedy would be applied too late to insure the best results.

A few growers have tried the plan of whipping off the blossoms, but this is liable to permanently injure the bearing twigs. The only objection raised against thinning fruit is that it involves considerable expense. Years ago I began the experiment of thinning peaches and apples on a small scale, and the results of my first experiment convinced me that thinning was a profitable business. I waited until "the May drop" had passed, then removed every imperfect or immature specimen remaining, my object being to leave the good fruit

about six inches apart. All of my thinning was done by negro women, and the wage paid them was fifty cents per day. Long bamboo poles, in the small end of which the shank of a V-shaped piece of steel was firmly fixed with the points upward and the inside of these points ground sharp, were furnished each picker, and these, together with an assortment of step-ladders, made the work comparatively easy and rapid. I made a practice of thinning my apples, peaches, pears, quinces and the large varieties of Japan plums. I have found the expense of thinning fruit to be but little. Thinning merely changes the time of doing part of the labor, but tends to diminish rather than increase the amount. It is no more trouble or work to pick half the apples from a tree in June than it is in October. If picked early and merely dropped upon the ground the work can be done much faster than it can when all the specimens are to be saved.

Among my early experiments in thinning fruit was a five-acre block of Yellow Bellflower. The trees were young, and I expected them to produce a much larger quantity when fully grown. The large size of the trees was obtained by good cultivation of the trees, reinforced by a thorough thinning of the fruit. Early in the summer one half of the apples were picked from the trees. This gave the remainder an opportunity to grow, and the half which was left probably filled as many barrels as they all would have done if they had been allowed to remain. If the fruit had not been thinned a large part of the specimens would have been small, and many of them imperfect. The fruit which remained was worth twice as much as the whole would have been. Then, too, the benefit to the trees was very great. They were obliged to perfect only half as many seeds, and consequently required but comparatively little food from the soil. The growth of the seed does far more to exhaust both the tree and the land than the formation of all the other parts of the fruit. The large apple gets much of its food from the atmosphere, but the small one takes a much larger proportion from the soil. The specimens of the Yellow Bellflowers mentioned above were very large. One hundred and eighty-six of these apples filled one barrel, and one hundred and ninety another. They were all sold to a dealer in Nashville, who made a trip to the farm to look them over, and he gladly paid me twice the usual market price to secure them.

A Chance for Economy

As a barrel of finely formed apples is worth, in almost any market, twice as much as an equal quantity of small and inferior ones, the draft upon the vital forces of the tree and the elements of fertility in the soil is only half as great, and the labor of picking the fruit is less if taken off early in the season, there seems to be a fine opportunity for farmers and orchardists to advance their interests and increase the profits of their orchards by thinning the fruit when the trees show an inclination to overbear. This thinning of fruit applies not only to apples, but to a still greater extent, also to peaches and pears. Every year large quantities of peaches are thrown away after they have been transported to the city markets, and still larger quantities are wasted at home. This involves a heavy loss, and is mainly caused by imperfect growth and ripening. If the fruit had been properly thinned a large proportion of this loss would have been prevented.

Pears often show up very well, while their flavor is extremely poor. Often they are badly formed and partially covered with scabs. These and similar evils are often due to a neglect to thin the fruit. In some cases want of cultivation and care of the tree help to make the result, but when trees are well cared for neglect to thin the fruit is the principal cause of its imperfection.

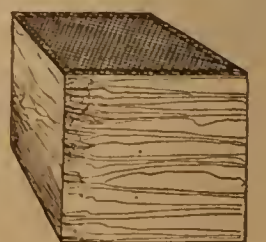
To the rich all men are equal who have an equal amount of money; to the wise, who have an equal amount of sense.

Cucumbers Secure from Bugs

By E. C. Roe

WHEN summer comes everything will be rushed, and now is the time to save some of the worry. Last year the bugs hothered our cucumber-vines so that we could not get any started. As soon as leaves formed, they were eaten off. We took four pieces of lumber about fourteen by fourteen by one inch and nailed them together, forming a box open at top and bottom. We then took wire screen and tacked it over the top side, fastening securely. This was placed over the hill and allowed considerable growth before removing. Dirt banked on the outside near the bottom makes it perfectly secure from bugs of any kind.

We made several of these boxes and painted them. They will last many years, and they do away with the old plan of making a mosquito-bar cage every year.



Live Stock and Dairy

Udder Affections in Cows

By J. Hugh McKenney

UNDER the above caption may be grouped a class of ailments that are of more or less serious annoyance to the dairy farmer. Ordinarily a common-sense preventive treatment is the best course for the owner to follow. By thus making the conditions such as to be unfavorable to disease the trouble may be wholly or partially checked and the cost of veterinary services very materially reduced.

With the discovery of the oxygen or sterilized air treatment, milk-fever has lost most of its terrors; yet, while recoveries are now the rule rather than the exception, there still remains a small element of danger. Hence, neglect is poor policy.

Milk-fever is essentially a disease of domestication. In her wild state, or on the ranges, the cow is surrounded by natural conditions; the modern, heavy-milking bovine has been evolved and maintained in her present state by artificial methods. As the act of parturition approaches, it is well to go back to nature, for the time being. Cut out all stimulating food as pea-meal, crushed wheat, etc., for a week or ten days, both previous to and after calving. Grass is the cow's natural diet. During part of the year the pastures will furnish this with no trouble to the owner; in winter substitutes may be had in feeds of a succulent or juicy nature, such as silage or roots, to form the bulk of the ration.

Conditions Then and Now

Originally the early milkings were performed by the calf, without completely emptying the udder. There was present no ambitious owner with a sixteen-quart pail to see if she would fill it, that he might tell his neighbors what a wonderful cow he had. A certain amount of pressure is a good stimulant. By milking out thoroughly, pressure is removed and the udder reduced to a state of collapse. Inactivity is good ground for the development of chemical or bacterial changes which rapidly take place and produce the disease. If conditions similar to those given when the calf is left with the cow were provided, the udder would not be emptied for forty-eight hours. Statistics in hundreds of such cases show that milk-fever is practically unknown or, at most, is of a very light type.

Cow-pox is another disease affecting the udder, and frequently diminishes the milk-flow because of the consequent difficulty of removing it properly. The constitutional symptoms are usually very slight, and for that reason are likely to be entirely overlooked. The sores begin as tender red spots, which later break and discharge, then gradually scab over and heal in about twenty days. The healing process may be hastened by the use of a milking-tube and antiseptic washes. As a rule, the cause is chiefly due to unsanitary conditions. This suggests that preventive measures must be along the lines of cleanliness, ventilation and disinfection. Good, pure air in abundance dilutes poisonous or contagious matters and thus lessens their effect upon the animal body. As the excretions of animals, to say nothing of other forms of litter to be found in many stables, are a first-rate medium for disease-germs, much, in this respect, is secured by having them removed regularly every day. There are a number of cheap, simple and effectual compounds on the market for disinfection purposes that should be used in every stable whether disease is present or not. The end would be that when animals are healthy they would be so preserved much longer, and where disease is present its ravages would be considerably diminished and curative means greatly assisted.

One of the most common, as well as one of the most troublesome, diseases with which the dairyman has to contend is garget. It manifests in a scant supply of milk from one or more quarters of the udder, which may contain thick, stringy particles. In severe cases the whole udder often becomes seriously swollen and fevered, and the secretion almost entirely suspended. The trouble results from improper care, feeding and milking. It can usually be avoided by not exposing the cows to cold or wet, to drafts, and to sudden changes of temperature. Care should be exercised not to overfeed on rich, albuminous foods, and to see that a fair proportion of the ration is composed of laxative materials. It should also be remembered that rough milkers have more trouble with garget than those who are more careful. Simple hard udder, which often occurs after calving, and even cases of moderate severity, may be reduced by giving three fourths of a pound of salts and an ounce of ground ginger in gruel, followed by frequent rubbing, and by allowing the calf to suck oftener.

The contagious form is characterized at the beginning by a hard, heated, painful swelling at one end of the teat, caused by

the presence of certain bacteria. A frequent use of disinfectants on the outside and in the milk-duct will generally effect a cure in a few days. If neglected, the disease will creep into the udder and permanently destroy the quarter affected.

Besides the foregoing ailments, any of which, if neglected, will affect the general health of dairy animals, there are a number of diseases that are purely local in character; that is, the udder is the only organ affected. If a cow is a hard milker her value is very considerably decreased. Sometimes this is caused by a formation of casein becoming lodged in the teat-tube. Manipulation and the injection of a small quantity of oil will usually force it out. When, however, the closure of the milk-duct is due to a membrane, or is blocked by a warty or other inside growth, we have presented a much more difficult matter. The streams of milk become finer and finer, and at last cease altogether. Very often this is the result of inflammation extending from without inward. Irritants, such as cold, wet, mud, sucking of the calf, etc., that cause chapped teats, are, if neglected, liable to give rise to the trouble in question. Sometimes the constrictions may be sufficiently dilated by inserting syphons of different sizes, so that there will be no further bother. To use the bistoury in such cases is very risky business. As in the case of the French surgeon who reported on a certain operation, it is "very remunerative; a beautiful operation; very seldom successful." This from the veterinarian's standpoint of course. If the animal so affected is of some particular strain or breed that the owner is anxious to perpetuate it may be worth his while to risk the operation. As some forms of this trouble are claimed to be due to a vegetable parasite, it is held that milk from affected cows is unfit for human consumption. In the majority of cases it will be more profitable to dry up such portions of the udder as soon as possible and prepare the animal for the block.

Cows that are heavy milkers often produce bloody milk. This condition is due to the rupture of small blood-vessels, and pulling down on the udder when milking is likely to aggravate it. The trouble may result from swollen or injured udder, or from an abrupt increase of rich food. Sometimes it is necessary for the cow to go dry, but usually restricted diet and careful milking will soon restore normal conditions.



Long after dark

About the only thing that remains cheap as ever is talk.

Peaches That Bring Premiums

[CONTINUED FROM PAGE 4]

and two packers for every four pickers will keep things moving nicely, and fifty baskets a day is good work for a picker when picking is good.

And now a few words more about my selling partner, the commission man. There are many honest commission men, and if one uses a little common sense they are not difficult to find. One should avoid the kind that makes extravagant claims as to their superior selling ability. The best men never send out "follow up" letters or solicit trade by sending out agents just before or during the shipping season. Many of the best never advertise. These are the reliable kind who get all the business they want through unsolicited recommendation of their satisfied shippers.

If, after a trial, such a man has been found to be honest and businesslike it pays to stick to him and not to be easily tempted to make a change.

To ship to two different men in the same local market is a mistake, for by so doing the shipper puts himself in the position of competing with his own goods.

This does not mean, however, that it would be unwise to have two different markets. In fact, it is a distinct advantage. I ship daily to a down-town as well as an up-town New York market. These two places are not patronized by the same set of buyers, and so it is no detriment to the shipper if a little rivalry exists between his two sales-agents. I have made the observation repeatedly that whenever I concentrated the whole day's shipment into one market for a day or two the price, if good, would go down twenty-five to fifty cents, and I would go back to dividing shipments.

This is no reflection on the commission man's honesty. He is only human, and it is not wise to tempt him to relax his best efforts by giving him a monopoly.

Lice and Ringworm

By Dr. A. S. Alexander

THESE two pests of housed cattle trouble most in dark, damp, dirty, badly ventilated stables. Remedial measures fail if only the animals are treated. So long as calves and adult cattle remain on pasture they are not bothered with vermin or skin disease; but when they go into winter quarters the trouble starts. The reason is that eggs ("nits") of lice remain in the stable from season to season, while the vegetable parasite (*Trichophyton tonsurans*) of ringworm lives on damp walls, partitions, fences and other woodwork as well as on the skin of animals. Both pests, therefore, are acquired in the stable. If animals are to be made comfortable by keeping them free of lice and ringworm the stable should be specially prepared for their reception late in summer or early fall. Each animal should be allowed four square feet of window-glass and five hundred to eight hundred cubic feet of air-space in the stable.

Good ventilation, too, is absolutely necessary, and by preference should be of the King system. In this method of ventilation the fresh air enters at the ceiling, drives the hot air downward upon the backs of the cattle and is sucked out through wall vents near the ground-level and connecting with pipes discharging through a high chimney in the roof. The cleansing process consists in removing all loose trash, litter and soiled feed, scrubbing walls, mangers, partitions, floors and ceiling with a 1-50 solution of coal-tar disinfectant or crude carbolic acid or solution of four ounces of formaldehyde or sulphate of copper to a gallon of water. Fresh-made lime-wash is then applied with a spraying pump, which forces the wash into every crack, cranny and crevice. An addition of one pound of chlorid of lime to three gallons of lime-wash makes it more effective.

Getting Rid of the Lice

To rid animals of lice a 1-100 solution of coal-tar dip may be sprayed on and brushed in, when the weather is not too cold, or an even more effective solution may be made by steeping four ounces of stavesacre-seeds in a gallon of boiling water and using when cold. Frequent applications are necessary, as new broods of lice hatch out from "nits." In cold weather dust the infested parts of skin freely with flowers of sulphur, or Persiau or pyrethrum insect-powder. Mercurial ointment (blue ointment) is effective when applied to the poll of the head and along the back bone; but treated animals must be separated to prevent licking of the ointment, which is poisonous. Ringworm is indicated by bare, white, scaly, crusty spots upon the face, around the eyes and on the neck or other parts of young cattle. Treat by scraping and scrubbing each spot clean, and then rubbing in iodine ointment every other day until well.

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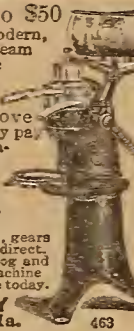
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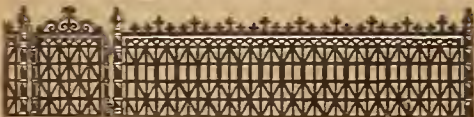
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Farm Notes

Cylinders and Pistons

By James A. King

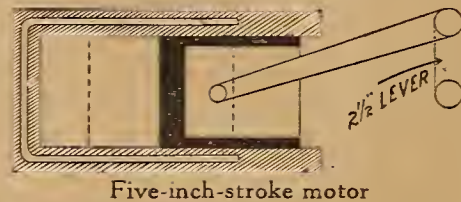
This is the Fifth in a Series of Short Articles on the Gas-Engine, Its Construction, Uses and Fuels

THE arrangement of the cylinder and piston of a gas-engine might be compared to a tube with one end closed permanently and the other with a movable stopper. In this comparison the tube is the cylinder of the engine, and the movable stopper is the piston.

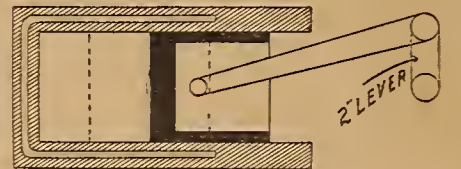
The purpose of the cylinder and piston is to transform into useful work the force generated by a charge of fuel. At the time the burning, or explosion, takes place the piston is shoved well up toward the closed, or head, end of the cylinder. Then the explosive force of the charge forces the piston out with a rush. It is this energy which is utilized by the engine in doing useful work.

What Constitutes a Good Cylinder

There are certain fundamental features which are necessary to make a successful cylinder and piston in a gas-engine. They must be built sufficiently strong to withstand any possibility of injury from the successive explosions of charges of fuel. They must be built in such a way that there will be a minimum amount of force lost either by the escape of gases or by heavy friction between the piston and cylinder walls. Proper provision should be made for cooling the cylinder, so as to permit of the free and easy operation of the piston. Also, provision should be made for properly lubricating the bearing surfaces of the cylinder and piston so as to reduce friction and loss of power to a minimum. The cylinders should be attached rigidly to the engine-frame and to the crank-case so as



Five-inch-stroke motor



Four-inch-stroke motor

to successfully withstand the jolts and jars resulting from the explosion of the charges of fuel. And of course the size and capacity of the cylinder must be such as to give the power required by the engine to do its work successfully.

Proper provision should be made in the cylinder for valves or ports, to control the flow of gases, for the installation of a spark-plug or other igniting device, and also for the admission of lubricating-oil pipes. These should be set into the cylinder without causing any leak of gas, or interfering with the circulation of the cooling medium.

The power which will be obtained from the explosion of any given charge of fuel, of proper mixture, depends upon two things: the size of that charge, and the amount it is compressed before being exploded. The size of the charge determines the amount of fuel that will burn, and so the amount of heat that is generated. Decreasing the space into which it is compressed increases the rapidity with which it burns. This increases the temperature of heat that is generated, the speed with which the gases expand and the amount of power produced. In ordinary practice gas-engine cylinders are so designed that each charge shall be compressed to form one third to one fourth its original volume. Ordinarily this is the most compression which is permissible without danger of spontaneous combustion.

Now, the reasons why the piston and cylinder should be so constructed as to prevent any leakage of gas are these: If any gas is

permitted to leak through valves or openings, or between the piston and the walls of the cylinder during the compression stroke, the total amount of fuel in the cylinder, at the time of ignition, will be reduced to that extent, and also the percentage of compression will be changed.

Then, if a similar leak is permitted during the time the gases are burning and exploding, that much pressure, which should have been exerted upon the head of the piston, will be lost in forcing these gases out through the various leaks. Thus leakage tends to reduce the power of the engine in these two major ways.

The principal causes of leakage which occur in a gas-engine are: (1) improper fitting of valves and ignition devices, (2) degeneration of packing material wherever there is a packed joint in the engine cylinder, (3) the wearing of the piston and cylinder walls so as to increase the clearance between them so much that the film of oil between them is not likely to prevent the passage of gas.

A piston is a comparatively costly part of an engine. Consequently, pistons are generally built with the diameter considerably smaller comparatively speaking, than that of the cylinder; then the piston is fitted with three or more piston-rings of a metal possessing a certain amount of spring or elasticity. These rings are larger in diameter than the piston, around which they are fitted, and are so built that their springiness keeps them constantly pressing out against the walls of the cylinder.

Factors Determining Power

As a result, what wear does occur from the constant rubbing back and forth takes place on these rings instead of on the piston. When the wear becomes so great as to cause leakage, these piston-rings can be replaced with new ones, which cost much less than would a new piston, and the compression will be as good as new.

Generally speaking, the power developed by a cylinder of a gas-engine depends upon the cubic volume of the cylinder and the number of explosions which take place in it in a minute. It is on this general basis that the various formulas for figuring horse-power are based.

Experimentation has proven that the power the engine delivers to the crank-shaft also depends, to a certain extent, upon the ratio of the diameter of the bore to the length of the stroke. For instance: An engine with a given cylinder volume and a four-inch stroke with three hundred revolutions of the crank-shaft per minute will not deliver as great power to the crank-shaft as will an engine with the same cylinder volume and the same number of revolutions of the crank-shaft per minute when the length of the stroke is five inches instead of four. This is because of the fact that the engine having a five-inch stroke has a two-and-one-half-inch leverage on the crank-shaft, while the one with the four-inch stroke has only two inches leverage. The diagram will help to illustrate this fact.

An examination of the various engines on the market to-day shows a wide variation in the number of cylinders in the engine and the arrangement of these cylinders. The number of cylinders varies from one to six, each type having its advantages and disadvantages. As an example to illustrate this, let us suppose we have two engines, each developing twenty horse-power, both of which are four-cycle engines. One of these is a single-cylinder engine, the other a four-cylinder, each of them having the same



number of revolutions of the crank-shaft per minute. In the single-cylinder engine there will be one explosion for each two revolutions of the crank-shaft. In the four-cylinder engine there will be one explosion each half revolution of the crank-shaft. This means that the four-cylinder engine will give a more continuous, smooth, even flow of power impulses than will the single-cylinder.

The Advantages and Disadvantages of Each

Since the four-cylinder engine delivers four times as many explosions in a second or minute as the single-cylinder engine, these individual explosions need be only one fourth as powerful as the explosions of the single-cylinder engine. Consequently, the crank-shaft, the bearings, the gears and the other various working parts of the four-cylinder engine do not need to be so large or so strong as will those of the single cylinder, because they do not have to withstand as powerful power impulses.

On the other hand, the four-cylinder engine will have four sets of valves, four ignition apparatuses and four times as complicated a lubricating device as will the single-cylinder engine. This means that the four-cylinder engine has practically four times as many parts to get out of adjustment and to wear out and break as does the single-cylinder engine.

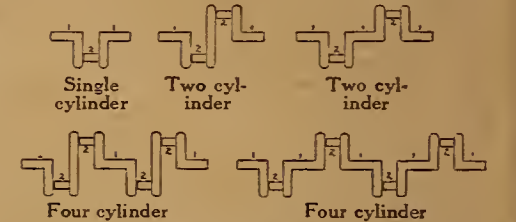
Also, the four-cylinder engine will not only have a bearing at each end of the crank-shaft, but will have at least one in the middle. Practically all four-cylinder engines have at least a three-bearing crank-shaft; whereas the single-cylinder engine has only a two-bearing crank-shaft. In order that the crank-shaft may be relieved of all unnecessary strains, all these bearings must be so adjusted that the center point of each will be in the same straight line. It is always more difficult to adjust three or five points into exactly the same straight line than to adjust two, so that the adjustment of the crank-shaft bearings of a multiple-cylinder engine is a more difficult and delicate job than that of a single-cylinder engine.

How Evenness of Power is Secured

The six-cylinder engine will deliver a still more even flow of power impulses than will a four-cylinder, and of course carry with it an equally greater multiplicity of parts. Two-cycle engines give an explosion for each revolution of the crank-shaft for each cylinder. So a four-cylinder two-cycle engine will give the same evenness of flow of power impulses as one would get from an eight-cylinder four-cycle engine.

And, since each cylinder of a two-cycle engine is much more simple in its construction than in a four-cycle, the four-cylinder two-cycle would have the double advantage over a four-cylinder four-cycle of giving twice the evenness of power impulses with a much greater simplicity of parts and a no greater difficulty of crank-shaft bearings.

The cylinders of a multiple-cylinder engine may be placed horizontally, perpen-



The various arrangements of main and connecting rod bearings. 1, main bearing; 2, connecting rod bearing

dicularly or at an angle. They may be arranged parallel with each other, in pairs directly opposed to each other or in pairs at an angle with each other. These latter are spoken of as parallel cylinders, parallel opposed, or V-shape arrangements. The relative advantages depend greatly upon the other features of the engines and the use to which they are put. The parallel opposed arrangement of cylinders has the advantage over all others in that the engine is subject to less vibration on its frame.

The Weather Report's Value

By H. E. Knies

MOST everyone reads and appreciates the government weather forecasts; but how many, especially farmers and poultrymen, realize the value of the weather report, giving, as it does, the temperature and weather conditions of the previous day in all sections of our country?

Since the advent of the rural delivery, all up-to-date farmers get a daily paper, and its value can be made immeasurably greater by a careful study of the weather report. For instance, the previous day at 8 P. M. the temperature of Detroit was thirty degrees. Then, if you happen to live in eastern Pennsylvania, that will in all probability be your local temperature the following evening. Farmers or poultrymen who have to look after the ventilation of barns or poultry-houses will find this knowledge invaluable.

It takes a little time and study before one becomes proficient in anticipating the weather, but after a time it becomes like second nature. There are many who, by closely observing local conditions, can pretty accurately forecast the weather.

Suppose you have a long drive to make and you live in eastern Pennsylvania, then if you know it rained or snowed the previous night in Chicago or Detroit, or that it had been zero, you would, if you possibly could, put that drive off until later, when the weather conditions were likely to be more favorable.

The writer has had four years' experience raising squabs, and he knows how invaluable it is to have some knowledge of weather probabilities in arranging the ventilation of pigeon-houses for the night. Poultrymen who sometimes have to get up during the night to close a door or window, or look after an outdoor brooder, because a strong cold wind has sprung up might have foreseen the conditions by a simple study of the weather report.

In reading this article do not confuse weather reports with weather forecasts. They are distinct and separate. One reports the weather of the previous day, while the forecast gives the probabilities for the day.

The United States Weather Bureau has done and is doing magnificent work, and the writer has no criticism to make or fault to find with its work, but he thinks any intelligent person who will take the time can make use of and supplement its work by personal knowledge and observation.

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The FARMERS' LOBBY.

Economies That Point to Prosperity

By Judson C. Welliver

Marketing cotton, in the South, is a business in which the middleman has always had the grower at his mercy. A man drives

to the village with a couple of bales of cotton. The buyer, a front-porch ornament, meets him in the road, rips into a bale with a knife, drags out a sample, announces that it is of such-and-such a grade and worth so much. The seller doesn't know enough about his own business to know whether it's true or not. He has always supposed that his business was to raise cotton and to take whatever he was offered for it.

The middleman—two or three of him in a string—lived off of that innocence of the grower. The Department came along and tried to better conditions. It sent agents into particular neighborhoods, to teach the people first all about grades and values; how to read the market reports, and from them judge for themselves what their cotton was worth. When they knew this they were organized into selling associations.

A New National Movement

THEY soon got their cotton together, graded it, and then wired direct to the ultimate market, offering so many bales of one grade, so many of another, and so on, in the name of the organization. The buyers learned that these associations were perfectly reliable, their gradings could be trusted, and their dealings would be square. Result: *these communities are now getting from four to six cents per pound more for their cotton than they did before.* You northern farmers may not quite realize what that means; the Southerners all will. It means the difference between poverty and prosperity.

That's a sample of the kind of work for the rural community that the Department has in mind now. It will help the people in particular sections to organize themselves for such effective marketing. I happen to know, though I am not yet permitted to publish, the name and circumstances of a particular county that is to be made a dog for trying on the scheme. In this case the project will be on a bigger scale than in most of them, at the beginning at least. To get men capable of directing this kind of work is by no means easy. The Department has secured Dr. T. N. Carver, professor of economics at Harvard, as director of the general work of rural organization. He knows it in detail, and in all manner of localities, as perhaps no other man in the country does. He may be a college professor, and a lot of farmers with mud on their heels may turn up their noses at the idea of a man from "dear old Ha'vud" knowing anything to tell farmers. But this man Carver does know it, all the same, and he is of the type of people that are going to solve this question, so far as it can be solved. It must not be understood that this new field of activity is going to absorb energy away from the work of the state colleges and experiment stations, in the development of practical agricultural business. The business of improving agriculture is to go right ahead; but it is going to be coupled up with this further business of organizing the improved agriculturists so that they can do better business.

What is a "Country Ham"?

ONE of the important works to be attended to, for example, in connection with rural organization, is to establish broadly a common language for producer and consumer to use, so that they can be sure of understanding each other. When a man orders country ham he wants to be sure that the seller means the same thing by country ham that he does. There will have to be more or less legislation, applicable to the whole country, to make weights, measures, crating, boxing, etc., uniform.

Congress recently wrote into an appropriation bill that no funds appropriated in it should be used to prosecute farmers' co-operative societies under the Sherman act. President Taft promptly vetoed it; it has passed again, and President Wilson, to the time of writing, is understood not to have decided whether he will sign it or not.

Well, law or no law, presidents or no presidents, courts or no courts, some provision will be made whereby co-operation may be carried on and developed.

By hook or crook, directly or indirectly, the co-operative business will at length be exempted from the operations of this law, or else the law will break down of its own weight. The community must have these economies, these opportunities to serve itself.

READERS of the Lobby will perhaps recall that a few weeks ago it contained a story about the development of co-operative merchandising institutions among the farmers, in the course of which a brief sketch was given of the Rockwell Co-operative Association at Rockwell, Iowa. Well, the Rockwell association is to be made the subject of a special study by the Department of Agriculture. It came about through the FARM AND FIRESIDE article, which was brought to the attention of Secretary Houston.

"That's exactly the kind of an organization we need to know all about," he promptly declared. "Now write me a memorandum about it, and suggest the right man to make the study—a man with real understanding and vision."

Co-operation in the Real Farm Community

HE WAS given the data, and it is promised that the study of this typical organization will be made as soon as possible, with a view to getting together out of its experience as much practical information as possible about how to organize rural co-operative work.

What Secretary Houston was especially interested in, regarding the Rockwell association, was the fact that it isn't a specialty marketing institution, like the orange, lemon, walnut and vegetable organizations in California. There are plenty of successful co-operative marketing concerns in the country, as the Lobby has shown heretofore. There is the Rocky Ford cantaloup business, for instance; the Maine potato co-operations; the cranberry organization; the Florida citrus-fruit operations, and many others. But the lesson of these is not a very useful lesson for the community that does general farming; and that, after all, is the real agricultural community. Suppose some county had a soil that would produce nothing but watermelons; and suppose it was the only county in the country that could grow watermelons. It isn't difficult to understand that the people with as good a thing as that would very soon pool their interests and formulate a highly efficient plan for marketing their melons in the best markets, at the best prices, for the lowest possible expense. More than that, they would succeed with it; they would stick together because there would be no room for diversity of interests to come in and occasion disagreements.

Most of the big successful co-operative organizations partake of this character. When you've found a whole community doing the same thing, it's not difficult to start co-operation.

But, as Secretary Houston pointed out to me, the lesson in such instances, for the average farming community, is more apparent than actual. "What are we to do to induce co-operation in an ordinary farming section," he demanded, "where some grain, some vegetables, perhaps some fruit, are grown; where there are some farmers feeding their grain to stock and perhaps buying both grain and the stock to turn into meat; where some raise milk instead of meat—the average farming section? What is the basis on which the people of that community, with no single great staple that binds it together in a common interest, can get together and help themselves and also their customers in the city or the town?"

Studying Cellars and Markets

THAT question was a good deal of a poser; it is for most farmers; and when the Secretary asked it of me, the Rockwell association jumped into my mind. I told him what I knew about it, and he was keen for it in an instant. Rockwell is in the way of getting a lot more fame than it has yet garnered.

Looking over the "project" which has been drawn up in the Department for the organization of a Bureau of Markets, I was struck by one bit of hugely practical sense that stuck right out from the page. It was stated in just one sentence, and didn't have an active verb in it at that. It read:

Study of methods by which consumers would buy in larger quantities, including education of architects and builders in cellar construction, etc.

Think of getting so practical as to talk about cellars in connection with co-operative marketing! Yet there couldn't be a more sensible suggestion. People in cities nowadays mostly live in pigeonhole apartment-

houses whose arrangement suggests much more the architecture of a high-backed desk than of an old-fashioned home. A family is chucked into an apartment, ten stories above ground. I've seen half-grown children of one of these cliff-dwelling city families that didn't know what a cellar was! You couldn't have stowed a whole barrel of apples anywhere about the place where they lived. A peck of potatoes was the outside limit of accommodations, and if they bought in such big bulk as that there would be no place for onions and the rest of the vegetables. A twenty-five-pound sack of flour would test the capacity of the bin; the kitchen cupboards were built expressly to accommodate a few packages of prepared cereals, and the like. Beyond that and a gas-stove there was no particular recognition of the rather elemental fact that folks have the expensive habit of eating three times a day. How much chance do the housewives have to free themselves from the grip of the retail-market man? The Department is setting about the task of finding out.

Nobody has a very definite idea how the trick is to be turned. City people haven't the room for individual houses and storage cellars. If a city man with the means to do it should figure out that he could save enough by buying in quantities to warrant him in having a real home with some old-fashioned cellar space—and he might easily figure that out—he would then confront the fact that there was nobody to sell to him on his new basis. The whole marketing organization is keyed up to the notion of selling for the hand-to-mouth consumer. The farmer doesn't haul in a load of potatoes and dump them into the city man's cellar as he once did. The city man wouldn't know where to hunt for a farmer with an ambition for that sort of business.

The Whole System Must be Changed

IN SHORT, the whole economic organization, domestically, has got to be made over before that sort of thing can be done; and it is with the thought of getting back thus to the very foundations of the system that the Department has now gone to work.

So it is necessary to reorganize things a good deal at both ends of the line. The Rockwell society looks like an excellent model for the organization of general farming communities: teaching them to sell in co-operation, thus cutting out the middleman who profits off their products, and also to buy in co-operation, cutting out that other chain of middlemen who profit on the farmers' purchases. After that, the city people need to be educated to organize themselves into real houses, and into associations of buyers, so that through their organizations they may buy direct from the co-operating societies of farmers at primary prices.

All this may sound pretty trite to readers who have seen the Lobby preaching away at this sort of thing for some years. The point about recalling it right now is that the newly organized Department of Agriculture is bent on devoting most of its effort to work along these lines. It thinks that the problems of farm production are a good deal less pressing just now than those of distribution.

Rural organizations of all kinds are first to be studied in detail, to learn what are the factors that make some fail and some succeed. Their wrecks are strewn all over the land. Why did most of them fail while some succeeded? Secretary Houston has an idea that individual communities need to be educated to the specific advantages to be secured. Doctor Galloway, the assistant secretary, told an illuminating incident:

The co-operative business? The community must have these economies—these opportunities to serve itself.

Law or no law, some provision will be made whereby co-operation may be carried on and developed.

What is the basis on which the people of a community, with no great staple to bind them together in a common interest, can get together and help themselves and their customers?

IN FRONTENAC CAVE

As Told by One Who Was There, and Edited by Hayden Carruth

Author of "Track's End," "The Voyage of the Rattletrap," Etc.

Illustrated by Edward L. Chase

Part I.

I come to Hawk's Landing and meet the Captain; then, after falling afoul of some scoundrels, I go away with him; together with the exact manner of our finding ourselves shut helpless in the bowels of the earth.



I SHOULD never have waited, as I have done, all these years to set down a plain account of a strange experience of mine, had it not been at the earnest and oft-repeated request of the Captain, though why he should have felt so about it I can't say. But the fact is the old man was never quite right in his head on this point after that day they drew us up out of that terrible hole, though he lived twenty happy and peaceful years, as he deserved to do, and died (and it makes my heart ache when I think of it) at a much greater age than many of us can hope to reach.

Even after the Captain was gone I put off taking my pen in hand for many years, but now at last I have turned to it and I shall here put down the facts of our adventure; and I verily believe, had I the skill of some book writers, or even the half of that of the best of them, that I could make a tale fit to print. But, having no knack at all with the pen, I can only tell my story plain, and in my own way, just as it happened, like a man writing a letter, and perhaps some day a book writer may get hold of it and make something which folks might read; only I warn him now, before going further, that if he in any way brings in the name of Judson Pitcher, which is my name, or that of Nathan Archway, which was the Captain's, he is not to use any of his story tricks, but stick to the facts as I shall give them, only telling them, of course, in the right and regular way that such things should be told. So I begin.

It all started the day the Liverpool gang robbed the Lumberman's Bank at Hawk's Landing. It was my ill luck to be in the bank and at the side of young Robert Archway when he was most cruelly shot down by that notorious scoundrel, Isaac Liverpool. I had asked Robert to go there to identify me, I wishing to get a small draft cashed; and why I, too, was not shot like poor Rob I know not. It was at noon-time, and we were alone in the building with the exception of two bank men, and the robbers numbered eight or nine, four of them coming into the bank, but only three going out, for during the general fight, in which Robert was killed, the cashier shot down one of them, though the next moment was himself shot, along with the other man behind the counter. These two were brave men as any I ever saw.

The next day the bank owners made public that the robbers had got off with no less than \$50,000. At the same time a reward for their capture of \$5,000 was offered, which people thought liberal enough.

Hawk's Landing was a small town in Minnesota, on the Mississippi River. It was just below the foot of Lake Pepin, and great bluffs, the highest I ever saw, were all around, divided and furrowed by ravines and coulees leading down to the river, but with their tops flat, and level with the prairie, which began in good earnest from five to ten miles back. Near by came in the Zumbro River from the west, with its own bluffs and coulees, making much confusion.

But I must tell you first how I came to be there. I had left my home in Kentucky, being then about eighteen, to seek my fortune, as the saying used to be. I had gone down the Ohio River (though my mother and sisters had no liking to the notion of my going at all), and then up the Mississippi, stopping at Hawk's Landing by chance, and nothing else. It was a lively town, the business coming from the steamboating and the rafting and logging industries, it being opposite the mouth of the Chippewa, in Wisconsin, a stream coming down out of the pines. The country round about on the Minnesota side was but little settled, the greater part of it having but newly been got by the Government from the Indian tribes.

I had scarce walked down the gang-plank from the steamboat when I chanced to hear the name of Archway, and snapped it up briskly enough, being already homesick. This I did because I remembered hearing my father speak of a Captain Archway he had known at Cairo, the Captain being then master of the *Belle of Prairie du Chien* packet. I called and was overjoyed to find him the man my father had known. He gave me a most agreeable welcome, and called me Jud the second time he spoke to me, which sounded good to my ears. He was a Yankee, born in Maine, and had at first followed the deep sea, and later had gone coastwise (as he said) to New Orleans, and from there had got into the river traffic. His wife was dead, and he lived alone with a daughter and the son Robert, who was then, and up to the day that he was shot, assistant agent at the steamboat office on the levee.

I see after all that I have mentioned the Captain's daughter, though I had not intended to do so. I thought I would just write the account of the adventures which the Captain and I had, and there were enough of them before we got through, and say nothing whatever about her. This would be the proper

way, I think. But since she has crept in I might as well say that her name was Amy, and that she was about a year younger than I. She was a very pretty girl, but this has nothing to do with my narrative. I shall spend no time telling about her hair, which was uncommonly nice, a bright brown inclined to be reddish, nor so much as mention her eyes, which were the bluest I ever saw, since our adventures in Frontenac Cave would have been the same had they been black, which I am glad they were not. She was rather small and slender, and I never took notice of any other girl whose lips were always so red, which may have been because she laughed a great deal, showing the most beautiful teeth. All of this and much more is true, but has no place here, and I vow I shall not mention Amy Archway again in this history. Indeed, at the end I shall go back and scratch out even this.

The Captain asked me, very pleasantly, what I did so far away from home, and on my telling him that I was striking out for myself to see the world and try to make my own living (my father's family being large and he not overly supplied with this world's goods, as the saying goes), he said to me that I must come and stay at his house till something turned up for me to do, and was so cordial, making nothing of my excuses, that I was obliged to accept of his invitation, and went, stranger that I was. He did this mainly, I am sure, because the Landing was a rough town, overrun with drunken and desperate men, and not a fit place for a boy who had no home there.

Amy, too, seemed very glad to see me, saying that any friend of her father's was welcome, which I thought afterward was strange since I was scarcely a

the sheriff and a posse. They were followed along the valley of the Zumbro and then up a little side coulee which led away to the northwest. Here they left their horses and went down a small opening which was known to be the entrance to Frontenac Cave. This cave had not then been much explored, but the sheriff, who knew it as far as anybody, led the way in. They searched the first part of the cave, but when they came to a small hole which was known to lead down to the main part, they found it stopped by a rock at the bottom, which they could in no way move. It was clear that the outlaws had shut themselves beyond this where there was no chance of their being come at. So the sheriff came back, leaving a party on guard outside.

It was a full week, or maybe ten days, before Captain Archway spoke to me about the matter which makes it at all worth while for me to write this. He then began to ask me about caves, knowing that I came from the limestone region in Kentucky, where there are many of them; indeed, I was born over against the line of Edmondson County, where is Mammoth Cave itself; and so I informed him, at which he seemed much pleased. I told him all I could about caves, which was something, since I had been in several, though never in Mammoth. Then he fell to asking of sink-holes, as they are called, sunken places shaped like a dish or a funnel, where the rain-water and sometimes brooks disappear in the ground. I could tell him little of these, though I had often seen them, but had never gone down into one. But this much I knew—that they usually or always lead into caves. At last he stopped pacing the floor and said:

"Jud, I have thought much about this thing, and I have made up my mind to this: to hunt out those robbers and give them over to the law. It seems as if it were my duty to do so."

"But how can you?" I asked.

"Ah, I shall hit on some way. I feel that I can do it, and that I ought to do it, before they kill other innocent people. But heaven knows that I do not do it for revenge. They shot my boy in cold blood," and the old man's voice choked, and he stopped. Then he went on: "They shot my only boy, but I have no right to harm them myself for that reason, only to bring them to feel the justice of the law. The time has been, Jud, when I would have followed them and shot them down like dogs if I could have done so, but that time is past now. I have lived too long to attempt revenge on any man. Revenge hurts the man who indulges in it more than it does the man on whom he takes it. But these villains must be brought to justice, and I must attempt it. Will you help me?"

At first I could make no answer. I suspected his plan and I could not think well of it. But I had thought a thousand times, I suppose, since it happened, that Robert would not have been in the bank that day had he not gone with me, and you may be sure I had grieved over it enough; and it seemed that I could not now refuse to help his father, however hopeless and dangerous it might be.

"If you do not care to, you must not be afraid to say so," went on the Captain. "In that case I shall go alone."

"Captain Archway, I'll go with you!" I cried, springing up. He seized my hand and said:

"Thank you, Judson, thank you. I was sure you would."

That very night I was awakened from sound sleep by knocking at my door. I found it pitch dark, and it was, as I soon learned, no more than two o'clock in the morning.

"Dress yourself, Jud," said the Captain, as I opened the door, "and come on. The horse is hitched up and we're all ready to start."

I hurried on my clothes, and in ten minutes was at the side of the buggy. By the light of a lantern I saw an ax, a gun, a dozen or more candles in a box, and a great coil of rope.

"Climb in, Jud," said the Captain. "I will tell you more about my plan as we go along."

Just then the door of the house opened and Amy came running along the short walk, her hair all down on her shoulders and her eyes very big.

"Father," she cried, "where are you going?"

"Out in the country a bit to look over the lay of the land," answered the Captain, hesitating as he spoke.

"Father, tell me the truth!" said she very earnestly.

"Well, I think I know where there may be an opening into Frontenac Cave, and Jud and I want to have a look at it."

"You aren't going in?"

"Maybe just a little. There won't be any danger."

"But I know there will be danger."

"Not a bit. We'll be back before night. Run into the house and go back to bed."

"You knew you were going and didn't tell me. That's why you had me ask Mildred to stay with me to-night."

"Oh, yes, of course. It'll be all right. We'll be back early. If we shouldn't come by night go home with Mildred—her mother will be glad to have you"; and the Captain turned and got into the buggy very quickly.

"Oh, but I don't want you to go, nor—nor—" She turned and took one of my big hands in both of hers, just as I had seen her take up the puppy, and said: "Take care of poor Father, Jud, please!—and good-by!" and then ran into the [CONTINUED ON PAGE 17]



"Father," she cried, "where are you going?"

friend of his, he not having known me above half an hour. She wore a blue dress, very neat and becoming, and she showed me her flowers and a pet puppy, which she took up and hugged. It was a very nice puppy, I thought. (This also to be cut out later.)

From the very first moment I took a great liking to the Captain. He had been retired from the river a dozen or more years, and, I thought, seemed but little like the steamboat captains I had seen, being too gentle for such. He was something of an inventor, having patented a slide-valve for steamboat engines, and was now working (and had been for a long time) on a new kind of marine engine. He was not a tall man, but strongly built, and you would have said he was not above fifty years of age, though he was really over sixty. No father ever thought more of his son than did the Captain of Robert. And Rob deserved it, being a good boy. He was three or four years older than I, and would not that terrible day have been in the bank had he not gone there to do me a favor. His father bore up better under the shock than I thought possible. He brooded a good deal, however, and I believe began forming from the first a plan by which he could bring to justice the murderers of his son. Poor Amy took the loss of her brother very hard indeed, and there was no more of her merry laughter; I felt very sorry for her, and longed to do something to make her grief more easy to bear.

This villainous Liverpool gang was no new thing in the country, having been known for two years or more as horse-thieves and stage-robbers. As I write this it seems I can hear them riding up and down in front of that bank, whooping and shooting at everybody they saw, with the ones inside stuffing and tumbling the money into grain-sacks, and Liverpool himself poking his black, smoking pistol in my face. Of course pursuit was promptly made after them by

Weeds and Wild Fruits That are Good to Eat

By Mary Hamilton Talbot



TO-DAY our catchword is "the increased cost of living"; we meet the phrase on every hand, and almost everyone is seeking ways to reduce expenses. Uncle Sam in his Bureau of Plant Industry, at Washington, knows what troubles the housewife is having to make one dollar do the work of two, and he is as busy with her problems as those of her husband. He tells her if she will look into the fence-corners and back yard and wander over the pasture-field she will find new and wonderful food-stuffs which she has always regarded as weeds, but which in reality are highly nutritious and valuable vegetables. One of the experts of this bureau says: "What we call weeds are no more so than other plants we term vegetables; weeds are vegetables, and our so-called vegetables were once upon a time nothing but weeds. The classification results from a matter of habit, and because we are such slaves to habit it has not occurred to us to eat anything but the vegetables that our ancestors have eaten for generations. Now we are learning that many wild weeds possess even higher food values than our familiar staple vegetables, and in eating them we are experiencing new and delightful sensations of taste."

Perhaps one of the most delicious vegetables known is milkweed, which has a strong, palatable flavor and is rich in nutritious food values. So important has it proved that it is now being cultivated in gardens, where the stalks grow to a very large size from fertilizing. The wild milkweed becomes tough and loses its delicate flavor after the blossoms appear, but when cultivated is good until fall, thereby giving a new all-summer vegetable with a flavor similar to asparagus. The brown seeds so familiar to us all should be sown in rows in the garden in the late summer and autumn and in the spring a fine crop of tender shoots will appear. Shoots of both the wild and cultivated should be cut when about a foot high. The plant will spring up again and again, and one may gather several crops from the same root. Like peas, the seeds may be planted at intervals, thus insuring a crop all summer.

Milkweed is cooked like asparagus and served with either butter or cream sauce, and in fact may be substituted for asparagus in any recipe for that vegetable, and the tender tips of the leaves make a salad with a taste so unlike anything

now used for the purpose—when served with either mayonnaise or French dressing—that those seeking new dishes will enjoy it.

Another weed, found in the woods and on the borders of the woods early in the spring, is the poke-shoot, better known in some parts of the country as soko or pigeonberry weed, and so closely does the taste resemble that of asparagus when cooked and served on toast with a cream sauce that no one need hesitate to serve it as a substitute when the former is high in price, as it usually is in the early spring. Early shoots of the bellwort, or strawbell, found in woods and thickets, are, too, an excellent substitute for asparagus. The roots of this plant are good when boiled.

Most housekeepers have long been familiar with the tender dandelion-leaves as a spring salad, but they do not know that the leaves and roots may be gathered for cooking when the plant is quite large and spreading. The flowers may be used as well as the leaves, both for cooking and the raw salad. They must be picked as they are blossoming out, when they are tender and well flavored, and for a salad they should be pulled to pieces and scattered over the leaves and served with either mayonnaise or French dressing. When used as greens dandelions may be prepared in almost any way recommended for spinach. In many countries dandelion-root is roasted and ground, mixed with barley, and sold under the name of "Poor Man's Coffee."

Lamb's-quarter, or white pigweed, is a common garden weed in America and Europe. When cultivated, as it is extensively in England, it grows in astonishing luxuriance if sown in loose, open ground. It has a very large stem and succulent leaves. It is cooked like spinach or other greens and served in similar fashion.

The wild yellow dock—whose long and curly leaf distinguishes it from the short, thick-leaved dock, which is not edible—is considered an outlaw, and yet it is one of the best and most nutritious of food staples, a plant that makes a richly flavored dish with an entirely new taste. The tender leaves are gathered and cooked like spinach and eaten with butter. After the cooked dock has become cold it may be dressed as a salad, the slight bitterness being very palatable. If the tender leaves of the common horseradish are cooked with dock a spicy flavor is imparted that is especially good.

Purslane boiled in a little salted water and served with a bit of rice is a very nutritious dish. This is one of our com-

monest weeds, growing not only by the roadside, but also in every garden and yard. It is very good, too, when boiled, cooled and served with French dressing, or it may be added to stews and made into sauce to serve with boiled salt beef. If chopped after being boiled and pressed into small cups to mold, this weed makes a delicate salad served cold with mayonnaise dressing.

Then we have the common sorrel, or sour grass, a very well-known weed in all parts of the United States. A similar variety is cultivated in all French gardens and by some Americans. Under cultivation these weeds grow large and are much more delicate. When mixed with lettuce or cabbage and served with French dressing they make a delightful dinner salad. Sorrel boiled with beef-stock makes a spring soup, and when boiled and pressed through a sieve and added to drawn butter it is an excellent sauce to serve with veal, either boiled or roasted. In fact, it is a common accompaniment to a fricandeau of veal. All sorrel contains a small quantity of oxalic acid, but a whole kettleful would not contain as much as a piece of rhubarb.

The young and tender shoots of hops make a welcome dish in the spring. The shoots may be cooked or eaten raw as a salad with other salad greens. When cooked and eaten with butter they do not taste unlike fresh peas. Another food tasting like peas is the lupine, or wild pea, which may be shelled like ordinary peas and is quite as nourishing. The pod of this wild food is broad, flat and very hairy, and contains four or five seeds. The flowers are a vivid blue.

The common mallow, or "cheeses," as the children call it, owing to the little pulpy seed-containers which it has that have somewhat the flavor of cheese, has proved to be a most valuable vegetable. It can be eaten either cooked or as a salad, but when cooked it is not very satisfactory because it is almost tasteless. It is a valuable tonic vegetable, however, and makes a substantial salad, with a mild, delicious flavor not quite like anything else.

A new and delicious salad can be made from the tender leaves of red clover and some of the blossoms, which should be separated and only the colored part used. The flavor of the flowers is most delicate. The leaves are strongly peppery and almost burn the tongue after a number have been eaten, so few condiments should be put in the dressing used with them. Another peppery grass is the wild mustard, to the farmer a well-known and troublesome weed, when whole fields be-

come yellow with its beautiful flowers. The leaves of the wild mustard are smaller than those of the true mustard, and when picked carefully and washed they make most excellent flavoring for salads, and are an agreeable addition to meat sandwiches. They may be used in place of watercress or lettuce, and contain just enough mustard flavor to be agreeable without the irritating effect of the true ground mustard.

The roots of the wild golden thistle are now being used as a valuable vegetable. The flavor is somewhat like salsify, and they are cooked in the same manner. Like turnips, carrots and other tubers, this is an all-the-year-round vegetable, and the roots may be dug in September or early October and kept through the winter. Roots dug in the pasture or meadow are not as well flavored as those cultivated in the garden, but their keeping qualities are equally good.

Few are aware of the food value of the yellow pond-lily, or spatter-dock, yet its long roots, growing four feet under water, may be boiled and eaten alone or cooked with meat.

Yet vegetables and salads are not the only foods for the table to be had free for the gathering, for many of our common wild fruits may be utilized.

Any kind of wild fruit has a superior and inimitable flavor. In many States wild crab-apples abound; they are sour and hard in a raw state, but they make a jelly that carries its own wild tang and not only is highly prized by the discriminating, but is increasing in popularity. Wherever the wild crab-apple flourishes the red haw, or thorn-apple, is generally to be found, from which a delicious jelly can be made. Elderberries are simply uneatable in a raw state, yet few jellies made can equal that which is made from them.

The tiny leaf-buds of the sassafras-tree, dried and rubbed to a powder, are sold in Southern markets. The leaves are rich in mucilage and have a dainty flavor without any of the sassafras characteristics. A teaspoonful added to a gumbo soup or a Brunswick stew adds greatly to the flavor and appearance.

It looks as if the waysides and wild pastures and fields and fence-corners held an endless store of good things that will bring health to anyone who will eat thereof. For the poor the knowledge of these weeds and wild fruits which Uncle Sam suggests that we add to our bills of fare ought to be a godsend, and for the rich it opens up a vista of new and delightful dishes.

Training Children in Bodily Health Habits—By Manthei Howe

IN A recent conversation with a specialist in children's diseases, we happened to touch upon the subject of how hygiene should be taught to children, and the fact that it seemed no more than fair that children should early receive training in the care of their own bodies. "For," said the doctor, "if every mother would teach her child a few of the simple rules of right living I and my brother practitioners would have much smaller bank-accounts."

And some of his suggestions were so simple and full of common sense that you will wonder as I did, "Why haven't we always done these things?" Among them there was not one which cannot be taught to the child in less time than it takes to clean up a room or teach an obstinate calf to drink. We all agree, of course, that the boy and girl are the most valuable possessions in the town or country, and we believe, too, that we ought to do everything within reason to help them to a healthier existence. And one of the first suggestions the doctor made was this:

Teach the child to gargle his throat. Even a four-year-old can master this, and get a lot of fun out of it too. Warm salt water is the best for this purpose. Tell the little children to watch a bird drink, to see how he throws back his head after every mouthful of water. Let the child do the same with a mouthful of water, holding it in the back of the throat and gargling it. He will soon learn the trick, and you will have laid the basis for throat health.

An atomizer should be in use in every family. If possible each child should have his own. Spray the child's nose and throat and then teach him, so that he may do it himself. That will save your time, and it is better for the child to do things for himself whenever possible. We have a family of eight in our neighborhood. From the youngest to the

oldest they spray their throats morning and night. During epidemics of sore throat, tonsillitis and similar ills they are free from trouble, and spraying their throats has become such a habit of the daily toilet that they do it for themselves, just as they wash their hands.

If we would use as much water on the inside of our bodies as we do on the outside, we should all be in better health. Few of us drink enough water between meals, particularly in warm weather.

In spite of careful spraying, the child's throat may become sore when some particularly obstinate germs lodge there and begin to multiply. You, or the physician, must get a look at the throat to see how bad it is. Tell the child to say "ah"; that will open the throat and give a reasonably good view. But there is even a better way. Have someone hold a light behind and above the child's head. You stand in front of him with a hand mirror. You remember how the boys used to hold pieces of looking-glass in their hands at school, and catching the sun's ray they would "shine" the teacher. The principle of the throat-examination is the same. Throw the reflected light from the mirror into the throat, press the tongue down with the handle of a teaspoon, and you will be able to see clearly if the tonsils or throat need more care than you can give at home.

If you will make a game of this throat-examination and accustom the child to it when he is well he won't make a fuss when sickness makes it necessary. No one else may appreciate your work, but the physician who is called to care for the patient will mentally note you as a wise and sensible mother.

The daily cleansing with water will do much to keep the mouth in good condition, but it cannot dislodge food-particles from between the teeth, and should you allow this stuff to remain, the teeth will decay in time. If Dame Nature does her

duty, every one of us will have thirty-two second, or permanent, teeth. Sometimes we are careless, other times poor health is to blame, but not many of us can boast of perfect teeth.

The other day a dentist had an argument with a patient who would not believe that it was necessary to clean the first, or baby, teeth. Of course she was in the wrong. The child should be taught to use the tooth-brush as soon as he can hold it. At first he will not make a very good job of it, but he will form the habit, and it will become second nature. When he grows older he will never think of neglecting his teeth. You can get tiny tooth-brushes for little tots.

The mother will have to take particular care of the child's teeth during the fifth and sixth years. That is when the first permanent grinders, or molars, come through. They decay rather early sometimes, so look after them carefully. Remind the child to brush the inner, as well as the outer, sides of the teeth, using a side-to-side and then up-and-down motion, so that all the food is cleaned out. Proper brushing of the teeth, gargling and spraying will mean good health and a clean breath. We owe that to our friends and to ourselves.

A clinical thermometer is a good investment. It is a safety gage that tells you when an illness is getting out of the bounds of simple home treatment. Accustom the child to holding the thermometer under his tongue. If the temperature persists in remaining up to 99.6° or higher it is better to call a physician instead of applying home remedies. Practically all the contagious diseases are accompanied by a fever of 100° or more. A temperature of 101° for a day or two may mean an attack of indigestion, as a result of unwise indulgence in goodies; but it should become normal after a thorough cleansing of the system, and the omission of one or two

of the regular meals of solid food which children demand.

One remark that the physician made struck me as something which does not receive the attention it should. He said: "There is a difference between taking reasonable precautions to stay in good health and becoming a mollycoddle. Accustom children to endure some pain."

This does not mean that children should be hurt deliberately, but that a slight headache or stomachache should not be made an occasion upon which the whole family must walk on tiptoe and coddle the sufferer. It is good for the average healthy youngster to learn to bear slight pain bravely and without whining.

Children instinctively stick things in the mouth. Pencils, beans, sticks, everything, goes into the infant's mouth. Begin early to overcome that tendency. We have an old saying that everyone must eat his peck of dirt. None of us need fear that we'll fall short of the maximum measure, even if as children we have been forbidden to put things in the mouth. If we could (if you'll pardon the bull) have clean dirt the practice might be harmless; but, as germs and the eggs of many kinds of worms are in the soil, the child who puts dirt into his mouth becomes a host for intestinal worms that seriously interfere with his general health.

And please don't use the dentist and the doctor as bugaboos with which to establish the child's obedience. You remember the old story of the boy that cried "wolf" once too often, and the people, fooled so many times, refused to listen to him. It so happened that the last time there really was a wolf, and he devoured the boy. If you always hold up the dentist and doctor as a bogie-man, you will have a terrified child to deal with should sickness or toothache necessitate a call from a professional man.

Reading for Sunday's Quiet Hour

The Blinding Effect of Sin

By Rev. Chas. O. Bemies

Sunday-school lesson for June 22d: Amos 6, 1-5.

Golden Text: Seek good, and not evil, that ye may live.—Amos 5, 14.

The Bible, especially in the Old Testament and the four Gospels, is a country-life book. Let us interpret it accordingly. We believe that the Bible is a true record of facts.

AMOS, like many another prophet, was country-born. He lived in Judah about twelve miles south of Jerusalem, out of direct contact with the corruption of the court and the mass of the people. He was a humble herdsman and a gatherer of wild figs. He got a telescopic view of human affairs just as they were, and had time and spirit to correctly diagnose the national sins. He was a good judge of men.

Seven eighths of the gospel ministers now come from the country. The country church has gone backward in influence and members. Therefore there is a decrease in the number of candidates for the ministry. Strengthen the country church if you want more ministers. Amos was a seer. He looked over the lesser sins of his own king Uzziah of Judah to the gross and wide-spread wickedness of king Jeroboam, II., of the northern kingdom of Israel. Jeroboam was the thirteenth king of Israel, reigned from 825 to 773 B. C., was a victorious fighter and regained all the northern border territory that had formerly been captured by the Syrians, making his possessions as large as when the kingdom was divided after the death of Solomon, a hundred and fifty years before. The land became prosperous, but the ruling classes squeezed the earnings of the people into their own coffers and lived in shameful luxuriousness, dissipation and idleness.

It takes hundreds of poor toilers to support one millionaire in idleness, and many thousands to make the multimillionaire who can dispense with lavish hand munificent gifts to various cities

and to educational and church causes. We are proud of our many moneyed men! It seems to be an evidence of prosperity to see wealth flaunted before the public.

The immense prosperity of the few is always a sign in every age of the virtual enslavement of the many. It is always the forerunner of national disaster or of revolutionary reform. The latter is what is happening in our own present time. Unlimited prosperity spells dissipation. Here is the train of natural events: Prosperity, Luxury, Corruption, Dissipation, Idleness, Drink and Immorality, Physical, Mental and Moral Decay, Ruin or Reformation. Until present times no nation has reformed. Each has prospered, corrupted itself and fallen. Now many nations are in process of reforming.

Amos saw the grasping cruelty of the powerful few in their grinding oppression of the poor producers of their wealth, the toilers, and clearly foresaw the consequences. God stirred him up with a prophetic vision and zealous spirit and sent him right up to Bethel where the king's chief sanctuary and the priesthood of the nation were located. He didn't beat around the bush or stay safely down in Judah and preach about the high-handed wickedness of his neighbor!

Amos thundered forth as a trumpet of God against the sins and dissipation of the king and people and predicted the utter overthrow of Israel and its captivity into foreign countries. Every true minister must be a prophet. Our own beloved nation is in idolatrous partnership with a diabolical business as bad as any heathenism. The liquor traffic is universally acknowledged to be the greatest cause of crime, poverty, human misery and wretchedness, idleness, disease and insanity, ill-born children, political corruption and public expense that is in existence. It is the avowed enemy of human rights, of prosperity, of the school, of the home, of childhood, of the church, of the nation, of every good thing. And every political party supporting the traffic, and every man voting with such a liquor-supporting party, is

guilty before God and man of the resultant crime, degradation and financial loss to the people of this nation. The \$2,000,000,000 spent each year for liquor, now worse than wasted, could have built full twoscore of Panama Canals if applied to that purpose since the canal was really started in 1904! Instead of a flood of liquor, we could prevent devastating floods by suitable reservoirs and deepening of rivers, conserve and develop our natural resources, perfect our school systems, national roads and canals, other public improvements, in fact anything we wished, and could increase immeasurably the prosperity of the toiler besides. The national abolition of the drink traffic would inaugurate the greatest era of universal prosperity that this nation or the world has ever seen. It is a practical and a national question and can be settled only by national enactment. There's no such thing as a temperate murderer, or thief, or adulterer, before the law. Neither is there such a thing as "temperance" any longer in regard to the liquor business. Annihilation is the only answer left. Every kind of regulation has been tried and has miserably failed.

The Victories of Faith

By Rev. Chas. O. Bemies

Sunday-school lesson for June 29th: Acts 7, 9-16. Heb. 11, 20-22.

Golden Text: This is the victory that overcometh the world, even our faith.—1 John 5, 4.

IT MAKES no difference what our separate religious and scientific beliefs may be, it is a fact that God deliberately and continuously selected the best human material He could find in starting and perpetuating the line of righteous people in the world, the same as Burbank selected the finest plum-tree among ten thousand seedlings for his best line of plums. Constant selection from pedigreed stock in each generation of seeds, plants, horses or other stock, or of human beings, is the only way to keep up

and to develop the excellences of the breed. It was God's business to weed out a man like Esau from the pedigreed stock of Israel, just the same as for the dairyman to weed out the three-year-old cow which only gives three per cent. butter-fat and only three thousand pounds of milk per year from his herd. Blood don't count in the majority of cases; it is constant selection and development that counts. God's selection, or the survival of the fittest, has been a bone of bitter and useless theological contention for many ages, under the headings of "predestination," "freedom of the will," "election." Just put an S in front of "election," and you have the practical key to the problem.

Say what we may, God certainly selected the ones that suited His purpose, because of their fitness, gave them the promises and developed them in faith. Yet He could have done nothing with them unless they were willing to be developed and used. In this Christian age or dispensation of the Spirit, any one who voluntarily becomes a real candidate is "elected"! So we see that faith is the necessary human response to God's "selection." Follow it through: Esau was not faithful, Jacob was willing to be and was developed into a "Prince of God." Joseph was obedient and reliable under every duty even as a boy, and Jacob selected him as the trusted one over his ten older brethren. Joseph was developed in faith, position and power under handicaps of slavery and prison because he was willing and became the means by which his brethren in turn were developed into a body of true, noble-hearted, united patriarchs, fitted to become the heads of the tribes of Israel. God's selection on the one hand and human faith on the other make a combination which cannot be beaten. God selects each one of you now for some kind of work. If you accept, you are "elected" by His selection and your own faith combined. We must seal God's selection by our own acceptance. Without faith it is impossible to please God.

For Cousin Sally's Boys and Girls

The Earliest Spring Planter

By Uncle Fred

DO ALL the boys and girls who read Cousin Sally's page know who is the earliest planter in New England? It is little Gray Squirrel. Some of his work is done in the fall, but he is very busy in the spring. He moves with quick starts through the brown leaves. Here he sniffs, and there he stops to ponder. He seems to locate every fallen chestnut and to know just where and how deep it ought to be buried. Holding the nut in his mouth, he darts to the right place, and with wonderful swiftness scratches with first one front paw and then the other. Those two sturdy little forearms often go in up to the elbow, for in some cases he must have quite a deep hole. Then he looks at his work with one round, bright eye and decides it is all right. So he pushes the nut into place and firmly pats the soil down upon it. While he is at this work he does not eat the nuts which he finds, but carefully plants them. I hope all of Cousin Sally's boys and girls are as painstaking and industrious when planting their gardens.

Gray Squirrel is the planter of forests. It takes many years for the nuts which he plants to grow into trees and bear more nuts. Think how much sooner we get corn and potatoes! So let us patiently wait for our gardens to bring forth the harvest. But let us work while we wait. Let us weed and water them and do our part faithfully.

The Green-Woods Picnic

DEAR COUSINS—I promised to give you a plan for a green-woods picnic, and I don't think anything could be nicer than a picnic some little friends in New Jersey had the other day. These girls and boys all go to a church which the committee decorates with flowers every Sunday. One week the chairman of the committee asked all the girls and boys to go to the woods with her early Saturday morning to gather flowers. It was a lovely day, and there in the cool, green woods they roamed around, laughing and chattering and having a splendid time, all the while looking for lovely, fresh wild flowers. When noontime came they had heaps of them, and, my! how hungry the girls and boys were. So they built a big fire and roasted potatoes in it, and when the potatoes were done they had a "bacon bat." Do you know what that is?

Each child held a slice of bacon spiked on a long twig over the fire, until it was cooked to a delicious crispness, and then they put it between two slices of bread. And didn't it taste good! After that they had strawberries picked in the woods, and cake and milk brought from home.

That finished the green-woods part of the picnic, for the flowers were piled into the lunch-baskets and carried to the church, where the boys and girls had more fun helping the committee arrange the decorations. And no one could be prouder than they were the next day,

when everyone admired the lovely flowers and praised the boys and girls for making the church so beautiful. They felt as though their green-woods picnic had been a great success, and I am sure you will agree with them and will wish to have one just like it.

And if you do, here's to the best time you ever had!
Lovingly,
COUSIN SALLY.



Hands Across the World

By Violet Moore Higgins

WHEN I am going to bed at night,
There comes a thought surprising;
Over the sea, half round the world,
The little Japs are rising.

And after I have said my prayers,
I look up where they're peeping
Over the rim of earth at me,
As into bed I'm creeping.

We never can be playmates, 'cause
When they're asleep I'm waking,
But when they're dressed and playing games,
My long night's rest I'm taking.

Still we are friends, though far apart,
With not a chance of meeting;
Across the world we stretch our hands
To wave each other greeting.

Contest Prize-Winners

THE prize-winners in the recent "George Washington" contest are: first, Bert Culbertson; second, L. D. Green; third, Edward Perry Wortman; fourth, Willie Frazier; fifth, Ernest Mortensen.

The "Valentine Party" prizes were won by: first, Freda Glock; second, Hilda Holmes; third, Edna Foruey; fourth, Winifred Crabtree; fifth, Elsie Rachut.

Letters from Cousins

Dear Cousin Sally—I live in a new country where it is not broken up. We live in a log house with only one room; it is very small but very nice too. West of the house are some high hills. I love the hills and woods.

I have a pony which I love very much. I ride her through the woods and out upon the hills. Every day we turn the cattle out over the hills to eat, and at night I take my pony and go after them. There are many lakes nearby where we go swimming in summer. My pony can run very swiftly over the logs left from the great fire two years ago which burned down large trees.

Your cousin,
M. L. R.

Dear Cousin Sally—My Mama takes FARM AND FIRESIDE, and I love to read the Young Folks' Page. I am seven years old. I have a darling little sister five years old. I like to help Mama with the housework. I have a little black and white hen of my own, and love to help with Mama's chicks. I like to go to school. Your loving cousin,
RUTH ESTELLA HAYES.

Note to the Cousins

WILL the cousins when writing to Cousin Sally please be sure to plainly write their names and addresses? Sometimes they fail to do this, and so I am unable to answer their letters, much as I desire to do so.

IN FRONTENAC CAVE

[CONTINUED FROM PAGE 14]

house while I stood like a big sheep and said nothing; less than a sheep in fact, which would at least have *baa-ed*, and I was silent. If I had known what she was going to do and say I should have been ready for her, and answered the right thing, but I was surprised, her taking my hand that way and calling me Jud, it always before having been "Mr. Pitcher," very proper.

We drove off, not along the valley of the Zumbro, where the robbers had gone, but up a narrow, winding coulie, which I thought must lead to the prairie north of that river.

The night was cool, though it was in the latter part of July. As I had come out of the house I had noticed that a mist was hanging over the river, and out of it had come the deep, regular breathing of a steamboat feeling its way round Shelter Nose Island. The moon was set, but I thought the stars shone with greater brightness than common.

The Captain scarcely spoke till we were well up onto the prairie, where we bore away due west. It was then that he explained his plan. Thus I may very briefly give it: To get down into Frontenac Cave through some of the sink-holes on the prairie, if any of them led into it, as he believed they did.

"Of course," he went on, "we can do nothing at capturing that band of outlaws alone. It is not even my idea to try to find them, for it would not be safe. What we'll do will be to get down, if we can, and see if we are not in a cave which promises to be the right one. Then we can come back for help, and people will be willing enough to listen to us. They would only laugh at us now, as they do at my engine," and there was a tone of sadness in his voice as he said this. "We ought to be able to find out all we want to know in a couple of hours, and, if we can get down this morning, be up before night. Then, if we think we are right, we can go down with enough men to-morrow to hunt out the robbers. I believe the water that goes down these sink-holes, and probably much more that comes from farther, follows a cave and gets into the Zumbro through springs in the bottom of the river. I know there are such springs all along there, for I've seen it on the surface of the water. I've got a long rope and plenty of candles. Then I brought a gun too, though of course we sha'n't need that, and food enough for two or three days; so if we have trouble in getting down we'll not have to go back for supplies."

"But, Captain," I put in, having, "I will say plainly, no relish for the prospect, 'caves are so crooked—they lead up, down, everywhere; with pits and domes where sink-holes come in, and ten thousand holes, pockets, crevices, tunnels, and every shape of opening you can think of. Besides, don't you suppose the men have gone out some other way?"

"Ay, like enough," he answered, no whit discouraged. "Though probably not, since the whole country is on the lookout for them, and they have not been seen anywhere. Besides, even if they have gone, maybe their plunder can be found and given back to the people they have robbed; and they would be back some day, too. And as for the crookedness of a cave, we'll have help enough when we begin to explore it in earnest."

The Captain kept on talking all the way, saying, among other things, that another reason he had for thinking that streams of water went down to the river in a cave instead of in a valley was that some of the settlers had had wells drilled through the rock, always finding water if they went deep enough, it being three hundred feet to the bottom of some of the wells near the river.

Just as the sky was getting red in the east we drove into a little grove at the north of a small mound, and concealed the wagon in a thicket of underbrush. The Captain unharnessed the horse and turned him loose, saying that he would not wander far. I put the candles in the basket with the victuals, and took it, together with the ax, lantern, and gun, which was a long, single-barreled shotgun with powder-horn and shot-flask, while the Captain shouldered the coil of rope. He said he thought the most promising sink-hole was a quarter of a mile to the southwest.

This sink was in the middle of a patch of bushes and small trees. I noticed, too, some late wild roses, and said to myself I would pick some of the buds before we started home and take them to Amy. The ground sloped in that direction all around, and a shallow ravine led to it from the northwest. The sink itself was about ten rods across, very rocky, and the sides ran down to the middle, just like a funnel, only not so steep. We found a great lot of limbs, tree-trunks, and roots in the bottom, and set ourselves to clear it out. This was a good two hours' work, and by the time we had finished it (first eating breakfast) the sun looked down at us pretty hot. The hole which we had uncovered was jagged and irregular, some four feet one way by three the other, though down about the height of a man it was rather smaller and worn smooth by the water. We placed a young poplar stick, ten feet long and six inches through, across the middle of the hole. Then we tied a stone to the end of

the rope and sounded. This stone struck something about thirty feet down, but rolled off and went on, and at last seemed to rest on a good bottom and leave about ten feet of the rope to spare.

"That's a good hole to get down," cried the Captain, "and not so deep as a bark's mainmast is high."

I was afraid to risk going down the rope, never having done such a thing, so the Captain proposed to go first, he being an old sailor, as you know, get the lay of the land, and then come up and lower me like a well-bucket, if the prospect proved good; but as I saw this would make him extra work I told him to let me down first and then come down himself. So he made a loop in the end of the rope with a queer knot, into which I slipped my left foot. Then he put a small strap around just un-

lower, and the walls full of holes, tunnels, up and down and every way. Indeed, I instantly saw that I was in a genuine limestone cave, such as I had known at home. And I suppose that there is not another thing in the world so irregular and mixed up as such a cave. Many times I have said that if the potatoes in a hill could be removed with all the roots without disturbing the soil that the holes and spaces left would make a fair model of a small cave, though I verily believe not nearly so uncertain and confusing.

For a long time we went on, now walking upright under an arched ceiling twenty or thirty feet high, now crawling through places so small that we had to draw ourselves along by our elbows; this moment walking on hard rock, the next on sticky clay, the next on dry sand. In a few places we saw stalactites, all dripping with water, and we passed one pit which we judged, from a stone thrown into it, to be at least a hundred feet deep. Of course we soon lost all sense of direction, but the cave had seemed to start the way we had hoped, and we had no reason to think that its general course changed. We were certain that we were going down much more than up.

We had reached a fine, large room, and had stopped to rest, when the Captain looked at his watch, and said:

"Why, Jud, it's three o'clock. We've seen enough, and I believe we're right. When we go farther it ought to be with a large enough force so that if we come up to those fellows we can take care of them as they need to be taken care of."

We had left smoke marks on the lower ceilings as we came along to help us in getting out, but even with these we went wrong a dozen times, and at least half a dozen were completely lost. Once we turned up at the place we had started from, and had to begin all over again. But at last, after vast creeping and crawling and climbing, we struck into a place which we knew was not far from the entrance. As we did so we first took notice of a strange humming sound, something like a swarm of bees. We went on, and soon it became a roar. We stood looking at each other, perplexed and a little scared, when we caught a gleam of something through a low arch, and on running to it found it was a stream of water.

"Ah," cried the Captain, "it's raining, and the water is coming down the sink-hole—that's all. Let's hurry up and get our basket before it is washed away."

We blundered along as fast as we could, my candle going out in our hurry. We caught glimpses of our first bats, dipping and plunging about. When we came up to the foot of the steep tunnel we found a torrent of water coming down it like a mill-race, with a vast cataract falling into it at the upper end with a roar like any Niagara.

"Around this way!" shouted the Captain in my ear, and we crept and stumbled away up a rocky hole till we could look in under the dome where the water was crashing and boiling. I darted through the mist and seized the basket and gun, brushing against the rope, down which a clinging stream of water was coming with a rush. We backed a little into the room behind us and stood facing the torrent, though we could see little with our faint light.

"It's only a thunder-shower, and we'll get out after it stops," said the Captain.

He had scarce got out these words when there was a crash like the fall of a mountain and a great coil of the rope splashed down at our feet and something rolled out of the whirlpool in front of us.

"It's our log and rope come down!" I cried, and at that moment the water column took a new leap and splashed over us, drenching us to the skin and putting out the lantern. The torrent was running half-way to our knees as the Captain grasped my arm, and we groped back into the total darkness, like rats being drowned out at the bottom of a hole.

[CONTINUED IN THE NEXT ISSUE]

The Funny Things We Say

THRIFTY HOUSEKEEPER—"If you will trim the grass and shrubbery and pull out the weeds in this yard, I'll give you a nice meal and a good pair of old pants."

TATTERED TRAVELER—"Delighted to oblige, ye, lady. I'm sure; but what ye ask is so intirely agin me principles."

THRIFTY HOUSEKEEPER—"Your principles!"

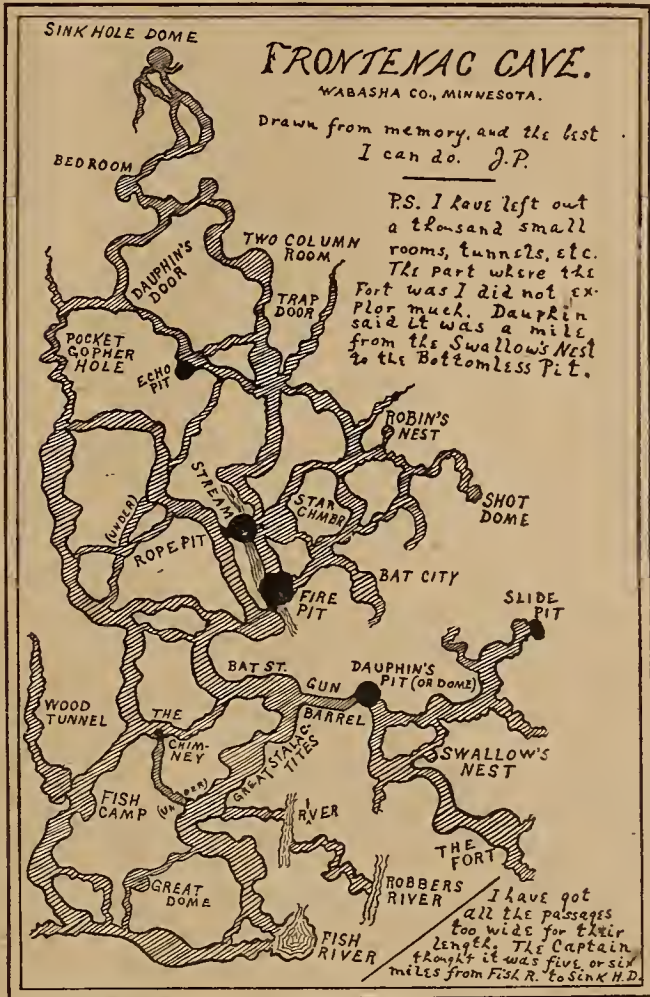
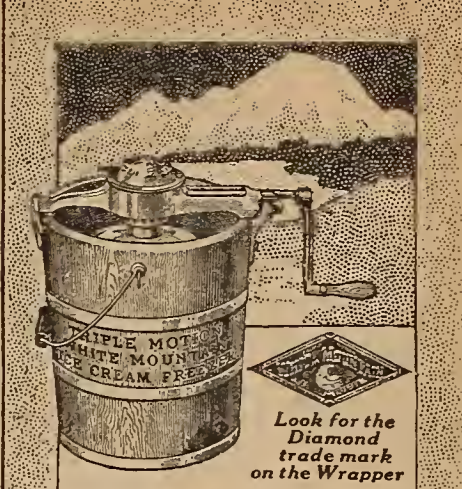
TATTERED TRAVELER—"Yes'm, certain. Ye see, I'm an ardent advocate of the conservation of our natural resources."

"I'm afraid you may think we're giving you a lot of fish this week, old man," said the genial host, as they sat down to dinner. "The fact is, my wife has got hold of what sounds like a really capital device for removing a fish-bone stuck in the throat, and we want to see if it works."—London Globe.

"Say, boss, can I get off this afternoon about half-past two?"

"Whose funeral is it to be this time, James?"

"Well, to be honest, boss, the way the morning papers have it doped out it looks like it's going to be the home team's again."—St. Louis Republic.

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Section of oval rug made of cream, tan and green rags

New Ideas in Rag Rugs

By Evaline Holbrook

THERE is nothing new about rugs crocheted or braided of rags, and the average woman has little to learn about the actual making of them. The new point is their coloring. Since the days of our grandmothers rarely has any but the hit-and-miss pattern been used, the home-maker having had in mind utility rather than the beauty of the finished product. The housewife of to-day considers both of equal importance and so plans her rug that it is both useful and beautiful.

A Rug for a Mission Room

Two of the rugs illustrated are crocheted, the other two are braided. The small braided rug, slightly oval in shape, is best suited for use in a room with mission furniture, on a stained or hardwood floor. This rug is made of heavy cloth cut in half-inch-wide strips braided tight. The center is braided of two strands of light-colored cloth and one strand of black cloth (cut from old

trousers). There are three rounds entirely black, three rounds of the center coloring, three black, three more rounds of the center coloring, two rounds of black, and an edge round in the center coloring. The entire color-scheme is most simple, but it is this simplicity which makes the effect so beautiful when the rug is laid on a plain wood floor.

The second braided rug is larger and is decidedly oval in shape. It is made of muslin rags, not woolen, each strip three fourths of an inch wide. Three colors are used in this rug—cream color for the center and lighter bands, tan and dull green for the darker bands. This rug makes an effective floor-covering for a bedroom where white enameled or maple furniture is used.

Blue-and-White Rags for a Rug

The other two rugs illustrated are crocheted, and for them strips three fourths of an inch wide are used. They are easier to handle if they are cut on the

bias. The fringed rug, only one end of which is shown, is oblong in shape. It is twenty-four inches wide and six feet long, but the dimensions may be changed to suit the place the rug is to occupy. This rug is suited for use in a blue-and-white bedroom and is an ideal floor covering for the cool, summery looking place into which we are learning to transform our homes for the hot weather. Single crochet stitch is used, and a big wooden crochet-hook. Begin with a chain of the white rags, having it twenty-four inches long, and on the chain work fourteen rows of single crochet, picking up the stitches on the double thread. Then make eight rows of single crochet with the blue rags. In selecting the blue rags choose a medium shade and one which will not fade or run. Make three rows of white, three rows of blue, four rows of white, two rows of blue. Make center of rug all white and as long as desired, then work second end like the first.

The fringe on this rug is made of white knitting-cotton. A strand of six double threads should be knotted in each stitch. The finished fringe is three inches deep.

Using up Odds and Ends

In the second crocheted rug a variety of colors is combined, providing a way of using up odds and ends of rags and at the same time producing an artistic effect. The colors are as follows:

Eight rows of white, one row old rose, three rows white, four rows old rose, one row white, one row heliotrope, one row pink, one row pearl gray, one row turquoise blue, two rows white, one row pearl gray, one row black, one row old rose. This completes the end border.

For the center of the rug, one row of old rose and five rows of white are repeated alternately for the length needed. This rug, like the other crocheted rug, is twenty-four inches wide and about six feet long, but it is not worked in the single crochet stitch. Instead of that stitch the following is used: Make a chain twenty-four inches long, turn, skip the first chain, pick up a loop in the next, draw the thread through one loop, then through two loops. Repeat this stitch in

each of the chain stitches, and work row after row in the same way, picking up on the double thread of the stitches of the preceding row.

The ends of this rug are finished with fringe made of white knitting-cotton, as described for the first rug.

Rugs Crocheted of Carpet

By Helena Korte

HOUSEKEEPERS who have pieces of worn ingrain carpeting can make them into very pretty rugs with either knitting or crochet work. The crochet is firmer and therefore more durable.

The whole rug could be started at once, but it so quickly becomes heavy and hard



This rug would look well with mission furniture

to handle that it is not advisable to do so. It is better to make it in strips. For a rug thirty by sixty inches make three strips, each ten inches wide.

The foundation of the crochet is brown carpet-warp. Ravel out the ingrain carpet. Use the weft, not the warp, and lay the strands in bunches as thick as one's little finger. Cut these into pieces a little over an inch long, not over an inch and a half.

Start with the warp, and make a chain for the width, and on the chain work two rows in slip stitch, which gives the necessary firmness. For the next row take up a bunch of ravelings, doubled to form a loop through which the needle may be put. Make a third row of slip stitches, catching a bunch of ravelings in with every stitch.

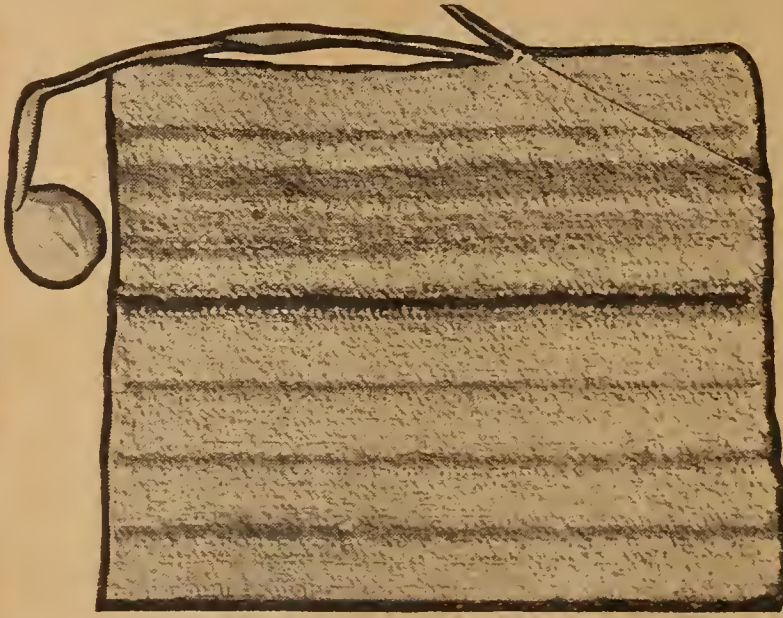
Fourth Row—One slip stitch in each stitch. Work third and fourth rows alternately until strip is as long as desired.

The plain, "hit-or-miss," style of work makes a handsome rug and is easy to do, but a design may be secured by a careful selection of colors. If this is done all the strips must be made exactly alike so there may be no mismatching when the pieces are sewed together. This means a little more work, but the softly blended stripes of harmonizing colors make a very beautiful rug.

When the strips are finished, sew them together on the under side, matching stripes. The tufts hide the seams, and any irregularity in the nap may be remedied by clipping. The finished effect is similar to that of a rich oriental rug.



Blue-and-white rug for a blue-and-white bedroom or a summery sitting-room



Varicolored crocheted rug for which odds and ends of rags may be used

Practical Helps for the Kitchen

Contributed by Practical Housekeepers

Before using new enameled cooking-utensils grease the inside with butter. This will prevent the enamel from cracking and chipping afterward. B. C., Kentucky.

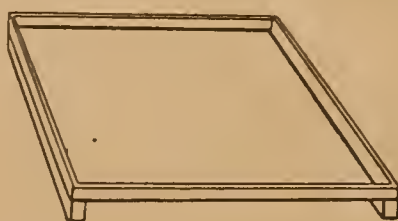
Iron-Rest for an Ironing-Board—A flat iron-rest can be made on an ironing-board by driving a number of large tacks into one end of the board. The tacks should be about one inch apart, and driven in only part way, leaving about one fourth of an inch above the board in the center and one-half inch at the outside edges. Then the hot iron cannot burn the wood and cannot slip off the tacks.

This iron-rest is always with the board and always ready. Mrs. J. V. R., Ohio.

To Stop Cracks and Holes in Stoves—Make a cement of equal parts of ashes and salt, adding enough water to form a soft paste. Use on stove when stove is cold. B. C. J., New Mexico.

Cake-Tray—One of our greatest conveniences is a cake-tray. It is a thin

board large enough to hold four cakes. Close to the edges on the upper side I have narrow wooden strips tacked on so that in cutting cake no crumbs will fall on the shelves. At the ends, on the un-



der side, narrow strips were also nailed, partly to permit a free circulation of air beneath the tray and partly because it is thus more easily lifted from shelf or table.

The tray is always covered with oiled paper before using it, and when the cakes cool I ice them on the tray. V. B. G., Ontario.

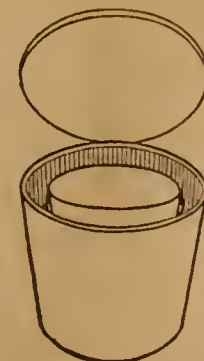
To make the old lids of fruit-jars look like new, boil them in weak vinegar twenty minutes, and then scrub them with soapsuds and a brush. B. C., Kentucky.

To Clean Food-Chopper—After using your food or meat chopper, run a crust

of bread through the machine, and it will be much more easily cleaned. R. E. P., Pennsylvania.

Mending Leaky Pans—Take small brads and washers. Cut a piece of leather, punch a hole in it the size of the brad, insert the brad through the hole in pan, slip washer and leather on brad, and pan will not leak. B. C. J., New Mexico.

A neat kitchen convenience for waste water that will not attract the flies is made of a candy-bucket covered with oil-cloth. The lid is covered with the oil-cloth and fastened with a small hinge. Any kind of a vessel can be used inside to hold the waste water. The outside has a clean and neat appearance when covered with the oil-cloth and can be easily kept clean. A square box can be used instead of the candy-bucket. A. S., Ohio.



Cooking in a Jar in the Oven—Not until she has tried it will a housekeeper realize how delicious are vegetables and

fruits cooked in a jar in the oven rather than on top of the stove. As little water as possible should be added, then the full flavor of the food-stuff is retained. A casserole answers admirably for vegetables or fruits prepared in this way. Apple sauce, rhubarb, prunes and beans are some of the things which are really excellent cooked in the oven. The process is simple for the housewife, for there is not the danger of burning as on top of the stove. Mrs. J. J. O'C., Washington.

For a self-wringing mop take a water-pail made of wood, and insert a galvanized clothes-line hook on inside of pail. Have opening in hook on lower side, and place three inches from top of pail to back of hook. Fasten with round-headed bolts; cut bolts level with nuts on inside of pail. A galvanized pail can be used by having holes for bolts drilled through side of pail. Have hook out of water. Place mop in handle with both ends toward handle, forming a loop in center, dip mop into the water, hitch loop into hook, and by turning mop-handle around it will wring mop as dry as desired, and the hands are kept dry. Mrs. C. H. H., Connecticut.



Useful Summer-Time Clothes

Designs by Grace Margaret Gould—Drawings by May Fairchild

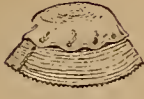


No. 2295—Garden Hat and Sunbonnet

One size. Material for garden hat, three fourths of a yard of thirty-six-inch, with three fourths of a yard of thirty-six-inch contrasting material. For sunbonnet: One yard of twenty-seven-inch and one-half yard of twenty-seven-inch contrasting material. Pattern, ten cents

No. 2309—Belted Rompers and Shade Hat

1 to 6 years. Material for 2 years, two and one-eighth yards of twenty-seven-inch material, with three fourths of a yard for hat. Price of pattern, ten cents



No. 2309



No. 2309



No. 2309 *



Bloomers which are included in pattern No. 2308



No. 2308



No. 2308



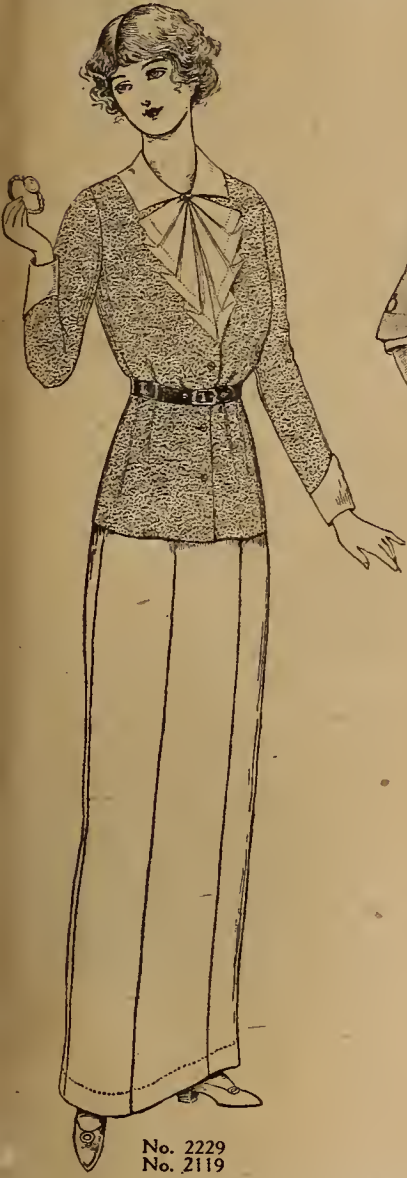
No. 2308



A pattern for the garden hat shown in the above illustration is included in pattern No. 2295. This hat, because of its crown, which may be opened and laid flat, is easy to launder. It can be made of plain and striped linen and gingham

No. 2308—Play Dress with Bloomers and Hat

1 to 10 years. Quantity of material required for medium size, or 6 years, four and five-eighths yards of twenty-seven-inch material, or three and five-eighths yards of thirty-two-inch material, with three fourths of a yard of thirty-six-inch material for the pretty little hat. The price of this pattern is ten cents



No. 2229
No. 2119



No. 2293
No. 2294

Woman's Home Companion patterns are not sold in stores nor through agencies. They can only be obtained from our three pattern depots. Order patterns from the nearest of the three following pattern depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 1554 California Street, Denver, Colorado



No. 2299—One-Piece Corset-Cover Buttoned on Shoulders

32 to 48 bust. Material for 36-inch bust, one and one-fourth yards of thirty-six-inch material. Price of this pattern, ten cents



The corset-cover pattern, No. 2299, laid flat



No. 2228
No. 2297

No. 2228—Waist with Sailor Collar

32 to 44 bust. Material required for 36-inch bust, one and seven-eighths yards of thirty-six-inch material, with five eighths of a yard of contrasting material. This waist with its large armholes is very comfortable. Price of this pattern, ten cents

No. 2297—Garden Apron with Pockets

Cut in one size. Quantity of material required, one and one-fourth yards of thirty-six-inch material. This apron made of denim, gingham or galatea in a dark tone will be found most convenient. The price of this apron pattern is ten cents

No. 2296—Buttoned-in-Front Dress with Pockets

32 to 44 bust. Material required for 36-inch bust, five yards of thirty-two-inch material, or four yards of thirty-six-inch material, with one-half yard of contrasting material. Use a dark fabric which will not soil. Price of this pattern, ten cents

No. 2229—Belted Russian Blouse
32 to 42 bust. Material for 36-inch bust, two and one-half yards of thirty-six-inch material, three-fourths yard of contrasting material. Price of pattern, ten cents

No. 2119—Six-Gored Skirt: Plaisted or Plain Panels
22 to 34 waist. Material for 26-inch waist, four yards of forty-four-inch material. This illustration shows the plain panels. The price of this skirt pattern is ten cents

No. 2293—Waist Buttoned at Side: Flat Collar
32 to 46 bust. Material for 36-inch bust, one and one-half yards of thirty-six-inch, three-eighths yard of thirty-six-inch contrasting material. Price of pattern, ten cents

No. 2294—Three-Piece Skirt: Plaits at Back
22 to 36 waist. Material for 26-inch waist, three and one-half yards of thirty-six-inch material. Width of skirt, two and one-half yards. Price of pattern, ten cents



No. 2229
No. 2119



No. 2293
No. 2294



No. 2302—Dart-Fitted Open Drawers



Back of No. 2299

No. 2302—Dart-Fitted Open Drawers

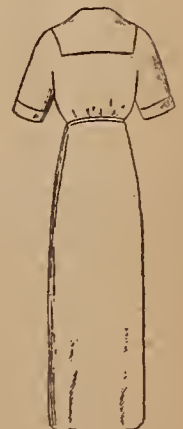
22 to 36 waist. Material for 26-inch waist, two and one-half yards of thirty-six-inch. If embroidery is used for ruffles, three eighths of a yard less of thirty-six-inch material is required, and three yards of embroidery needed. This pattern, ten cents



Back of drawers pattern No. 2302



No. 2228
No. 2297



No. 2296

Treat Them
to the treat of treats—
always welcomed, by all,
everywhere—



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supremely wholesome.

**Delicious—Refreshing
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Demand the Genuine—
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THE COCA-COLA COMPANY, Atlanta, Ga.

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1. Get two of your neighbors to hand you 50c each for a one-year subscription to FARM AND FIRESIDE. As soon as we get the subscriptions, you will be sent this valuable Crocodile Wrench as reward for the club.
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ARE YOU INTERESTED IN Embroidery?



We want to introduce THE HOUSEWIFE, "The one magazine necessary for the woman who has the interests of her home at heart," to a large circle of new readers. In order to inter-

est you we agree to send THE HOUSEWIFE for six months on trial (July to December, 1913) and give you our New Portfolio of 100 Exquisite Parisian Embroidery Patterns and a 100-page book of Embroidery Stitches all for only 25 cents.

A WORD ABOUT THE HOUSEWIFE

Hundreds of happy subscribers say that they could not keep house without THE HOUSEWIFE. It is so bright, helpful, practical, entertaining and so thoroughly clean and wholesome that its presence is a constant encouragement and inspiration to the housekeeper. Its aim is to brighten the home, save money and labor for the home maker, advise and instruct her on all household problems, and furnish her with absorbing, fascinating reading for her leisure hours. THE HOUSEWIFE is deservedly proud of its Cooking pages. All the latest ideas in embroidery, knitting, crocheting, tatting, ribbon-work, are presented, with full directions for making various beautiful and serviceable articles. During its thirty years of life THE HOUSEWIFE has enjoyed the reputation of the most "homey" magazine at any price.

100 PATTERNS IN PORTFOLIO NO. 1

Designed especially for us by a noted French designer of embroidery patterns, combining new and original patterns of rare beauty with dainty simplicity and elegant taste. All designs are planned for the newest styles in needlework, including the popular Punch, Medieval, French Knot and Goblin embroideries. In the assortment are a Shirtwaist, Corset Cover, Collar and Cuff Sets, Centerpieces, Doilies, Jabots, Baby Sets, etc., etc. all combined and carefully selected to meet the most exacting taste. Each design may be transferred several times and will not injure the most delicate material. The process is simple and any one can do it. In addition to these patterns we will send a 100-page

REVISED BOOK OF EMBROIDERY STITCHES

in which are shown in detail and comprehensively described every stitch used in embroidery including the latest and most popular ones. It is a book of help for the beginner and inspiration for the advanced needleworker. There are twelve exquisite original full-page reproductions, illustrating Pillows, Scarfs and Centerpieces in beautiful harmonizing colors. It also contains many helpful hints about Embroidery Implements, Needles, etc. How to launder embroidered articles, and much other valuable information.

This is a Special Introductory Offer and is remarkable value, so do not delay but order today. For 25 cents we will send you THE HOUSEWIFE, July to December, 1913, and give you The Portfolio of 100 Parisian Embroidery Patterns and the 100-page book of Embroidery Stitches with 12 color plates. Send all Orders to

THE HOUSEWIFE, 24-E IRVING PLACE, NEW YORK

THIS IS THE PORTFOLIO



Hot-Weather Dishes

Contributed by Readers Who are Good Cooks

Bean Salad—One pint of string beans boiled and cooled, two cupfuls of chopped cabbage, one teaspoonful of celery-seed or chopped celery and one-half dozen small cucumbers sliced very thin.

Dressing for Salad: Two eggs beaten, one-half cupful of vinegar, one teaspoonful of salt, one-half teaspoonful of dry mustard, one-half teaspoonful of black pepper and a good-sized lump of butter. Cook, let cool, and pour over salad.

Mrs. H. E. P., Missouri.

Creamed Asparagus—Wash a few stalks of asparagus, and cut off the white part. Divide the tender green portion into pieces an inch long. Cook in boiling water until tender. Arrange on a piece of buttered toast, seasoning with salt and pepper, and pour a little melted butter over it. This makes enough for one person. Is a good recipe for an invalid.

B. B. B., Ohio.

Scalloped Onions—Boil six or eight onions till tender, changing the water once. Separate them with a fork, and arrange in layers in a buttered earthen dish, alternating the layers with buttered bread-crumbs. Season with salt and pepper, pour over milk to nearly cover, spread with melted butter, and brown in a moderate oven.

B. B. B., Ohio.

Charlotte Russe—One quart of cream, one box of gelatin and four eggs, whites only. Pour a little cold water on the gelatin, then set it on the stove, and stir until it melts. Set it where it will cool.



Stuffed Peppers

not congeal. Sweeten and flavor the cream to taste, beat to a stiff froth, add the whites of the eggs well beaten, then the gelatin. Have a sponge-cake ready, pour this on, and set away to congeal.

Mrs. B. L., South Carolina.

Peaches in Jelly—Take one pint of the juice left from canning peaches and add to it the juice of one orange. Season with grated lemon peel and add half a package of soaked gelatin. Half fill a mold with this mixture, and when set add another pint of the juice, to which has been added a cupful of whipped cream and finely chopped peaches. Garnish with halved peaches and whipped cream.

M. H. N., Massachusetts.

Mock Lemon Pie—One cupful of sugar, one heaping tablespoonful of flour, yolks of two eggs, two-thirds cupful of boiling water, two thirds of a cupful of stewed pieplant and one teaspoonful of lemon-extract. Cook in double cooker, and pour in baked pie-crust. Put the whites of eggs on top.

Mrs. J. D. P., Indiana.

Summer Mince Pie—One-half cupful of molasses, one cupful of sugar, one-half cupful of vinegar, two tablespoonfuls of butter, four crackers rolled fine, two eggs well beaten, one cupful of raisins, and spice to taste. Cook all together; if too thick add a little water. This makes two large pies.

Mrs. E. E., Arkansas.

Angel-Food Cake—Whites of eleven eggs, one cupful of powdered sugar, one level teaspoonful of cream of tartar, one cupful of flour and one-half teaspoonful of vanilla-extract. Sift flour, sugar and cream of tartar together four or five times. Beat whites stiff on a platter, so that the platter can be turned upside down and they will adhere to it. Then add the flour and other ingredients to the eggs. Do not let it stand a minute after it is thoroughly mixed. Pour into an ungreased pan, and bake in a moderate oven forty-five minutes. Do not open the oven-door until the cake has been in at least fifteen minutes.

Mrs. B. H. S., Ohio.

Sour-Cream Pie—One cupful of sour cream, one cupful of granulated sugar, one-half cupful of seeded and chopped raisins, one tablespoonful of flour or

corn-starch, yolks of two eggs, one teaspoonful of ground cinnamon, one-half teaspoonful of ground cloves and one-half teaspoonful of grated nutmeg. Bake in one crust, and beat whites of eggs stiff, sweeten and flavor to taste, spread on top, and return to oven to brown.

Mrs. W. H. D., Ohio.

Apple-Custard Pie—One cupful of stewed sour apples free from lumps, one cupful of sugar, yolks of two eggs, tablespoonful of flour or corn-starch and teaspoonful of butter. Flavor with lemon-extract, bake in one crust, and cover top with meringue as in above recipe. This is as good as lemon pie, with less trouble.

Mrs. W. H. D., Ohio.

Cabbage Salad—Cut a small head of cabbage in halves, and cover with cold water in which you have dissolved one teaspoonful of soda. Let cabbage stand in water twenty-four hours. Change the water once in the twenty-four hours. When you wish to use it chop fine, also grate six cored and peeled apples, and add to the cabbage and apples two heaping tablespoonfuls of sugar, salt to taste, celery-seed or celery-salt, or a little chopped celery is better, and enough good vinegar to give a tart taste. Previous to grating the apples, make a dressing of one-half cupful of vinegar, one-half cupful of boiling water, put on stove, and add to this one tablespoonful of corn-starch dissolved in cold water, one egg well beaten, one tablespoonful of sugar, one teaspoonful of mustard and a pinch of salt. Stir this into the vinegar, and let simmer till clear. Let cool, and add one-half cupful of thick sweet cream. Then mix it well with the chopped cabbage and grated apples, and set aside to cool.

M. R. B., Colorado.

Lemon Sherbet—One pint of cream, one pint of milk, two cupfuls of sugar and the juice of two lemons. Stir all together, and freeze. This makes a fine frozen dish.

M. E. K., Ohio.

Fried Lima Beans—Fry one-half cupful of minced onion in one-half cupful of butter until soft. Then add three cupfuls of Lima beans which have been cooked and cooled. Season highly, and cook gently until brown and butter is absorbed.

F. K., Michigan.

Green-Tomato Soup—Four green tomatoes and one large onion sliced. Cover



Stuffed Peaches

with salted water, and cook until the tomatoes are done. When ready to serve add one cupful of milk and two cupfuls of sweet cream. Serve with crackers or bread-sticks.

Mrs. P. P., Pennsylvania.

Green-Pea Soup—One-half peck of peas, two teaspoonfuls of butter, one tablespoonful of corn-starch, one and one-half cupfuls of milk, one teaspoonful of white syrup or sugar and salt to taste. Shell the peas and set one side. Wash the hulls thoroughly, and put on to boil in a little more than enough water to cover. Let boil about thirty minutes. The good will be extracted when the hulls will have turned a pale yellow. Take the hulls from the pot, and boil the peas in the liquid, adding more water if necessary. Make a sauce of butter, corn-starch and milk, and add syrup. Strain the liquor through sieve, and press the peas through; add this to sauce, and boil up once.

Mrs. F. H., Nebraska.

Stuffed Peaches—Select fine peaches, rub off the down with a damp cloth, and steam until they can be pierced with a straw. Cool, and remove skins; cut in halves, and take out the stone. In place of the stone put a marshmallow or a spoonful of chopped nuts; press the halves together, and dust each peach well with powdered sugar. Serve with whipped cream.

M. H. N., Massachusetts.

Stuffed Peppers—Take three red and four green peppers and fill with boiled corn. Season, and pour melted butter over the corn; then bake. Arrange them on the plate so that a red pepper comes between each green one. Garnish with parsley.

N. H., Massachusetts.

FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

U.S. POSTAGE
RECEIVED
AUG 7 1913

ESTABLISHED 1877

SATURDAY, JULY 5, 1913



THE EDITOR'S
BULLETIN OF BETTER
THINGS COMING

WITH THE EDITOR

ADVERTISEMENTS
IN FARM AND FIRESIDE
ARE GUARANTEED

Cover Design

The next cover will accurately portray "Maud Muller Up-to-Date." It is one of the most cooling midsummer covers that FARM AND FIRESIDE has ever secured.

Special Articles

A full page of the next number will be devoted to "Friendly Letters from Old Settlers." As the title leads you to believe, these will be reminiscences of the old days when taxes were lower, cities were smaller, trusts were unheard of and farm help was plentiful. Those were days that deserve to be recalled. Most of the letters to appear were written by men and women over sixty years of age.

Another full page will be devoted to telling the merits of the barrel as a market package, also how the modern barrel can be purchased in knock-down form and put together on the farm. The barrel was invented over forty centuries ago, but only recently have we learned some of the best ways for making them.

The Headwork Shop

There will never be a famine of Headwork Shop ideas, for the scarcity of good farm help makes us think harder than ever before of better ways of getting our work done. Some of the best ideas that have ever appeared in FARM AND FIRESIDE will be printed in the next number. Remember, the Horseshoe Contest announced in the last issue closes July 10th. That means you have only five days more to send in your best method of using old horseshoes.

Live Stock and Dairy

Have you been having difficulty in keeping the milk this summer? Many have been troubled, and so we have secured from a dairy authority a very comprehensive statement which tells of methods successfully used to prevent milk from souring. This will appear in the July 19th number.

Gardening

Mr. Greiner will mention some of his experiences in getting vegetables late in the summer and early in the fall.

Poultry

Silage for chickens. The idea isn't new, but there are too few using it. One reader who has had a great deal of experience with chickens and the value of silage in their ration tells in the next issue of his work.

The New Serial

The second instalment of "In Frontenac Cave" will be found in this issue of FARM AND FIRESIDE. Captain Archway and young Judson Pitcher finding themselves shut in the cave make vigorous efforts to get out, naturally enough; but how are they going to do it? And who stole their rope, and what was it that so astonished Jud when he got back to the pit over the edge of which the Captain had fallen?

The Children's Page

Mothers and fathers are now facing the summer vacation. The Fireside Editor—a mother herself—believes that vacation-time may be made as valuable to children as study-time. The development of the minds and hearts of children through play is the great new message of our generation to parents and their little ones. It is with special pleasure, therefore, that we shall give our readers a practical article on amusements for the Children's Corner of the dooryard.

Patterns in Needlework

We shall publish an article on simple patterns for bedspreads by Evaline Holbrook, patterns which can be knit under the trees or on the porch in that hour of leisure which we believe necessary to the health—yes, and goodness—of every hard-working woman.

Interesting Reading for All

We shall give recipes for frozen delicacies with which to refresh yourselves and your friends.

Miss Gould will give us a page of her valuable fashions. Dear Cousin Sally has written one of her inspiring letters, and Bobbie gets a message from Mommie through the telephone-pole.

The next number will be full of inspiration and suggestions for summer life, planned for father, mother, children and all workers in the home.

**The Deacon's
Opinion**

Once a good deacon was called upon to lead a prayer-meeting. He did not feel the divine afflatus which ordinarily made him so eloquent a leader, and so he called upon other sources for matter of edification. "Sisters and brethren," said he. "I don't feel much like talking this evening, and so I think I'll read the Sermon on the Mount. It's about as good as anything I could say, anyhow!"

In this column and on this occasion I shall give large place to a letter which comes to the editor's desk from a woman in Michigan who is a valued friend of the paper. It's "about as good" as anything the editor could say, anyhow!

As my father is a retired Ohio farmer and for many years has had the FARM AND FIRESIDE on his reading-table, for me the magazine has old home associations. Yet I have been at home so little that after all I have not had a wide experience with the FARM AND FIRESIDE. But in my esteem it has always had a high place.

I was impressed immediately with the generous space allotted to the farm home which is too often slighted, though it is just as much a part of the farm as is the stable or the wheat-field.

**Improving
Farm Homes**

Then I noticed the quality of the articles, for instance, "What to Plant for Beauty Around the Farm Home." To me it does not seem that anything finer could be done for the farmer folk than to make them actually see that their humble or more pretentious homes can be made really charming, and that the lives in them may be made beautiful. But many farmers have appeared swamped in hard work with the paralyzed, esthetic sense which comes from bodies too tired. I do not believe that their Creator ever intended this: there must be some way to bring the farmer to a wholesome normal life with the joy of living.

"What Three Women Did" appealed to the practical side, which also is essential. Farm women must be taught to think practically if they are ever going to get time really to live. Then I liked the fancy-work page; some fancy-work women simply must have. In the midst of brain-work I have found myself simply driven to do some embroidery or other work of the kind. And then the cooking recipes—no real housekeeper will ever be prepared to dispense with those which are really fresh and practical. And every day new ones are being discovered. But recipes so complex and expensive that they can be prepared only in big hotels have no proper place in any kind of a home magazine.

I certainly do like your idea of improving the homes, the planning of conveniences to save steps and time, the rigid elimination of unnecessary tasks that opportunity may be secured for higher living, the inculcating of the idea that though farm life may have to remain plain it may still be fine and artistic.

But in all beautifying of the outer as well as the inner life the women must have the support of the men. If they are tactfully persistent this most of them can have.

**Now Let
Me Talk**

I wonder if there's space for a few words from the editor. In the first place, he appreciates the friendliness of this thoughtful letter—and he wants to ask every woman and every man who reads it to call the attention to it of the nearest person who ought to think about these things.

Half a century ago men and women were about on an equality in the matter of the drudgery of farm life. The man had to slave among the stumps and stones. The woman had to make soap, weave, spin and knit. The man was obliged to break his back over the sheaves in the harvest-field, to wield the corn-knife, and to labor with the flail and hoe. The woman had to carry water from the spring, to carry in the wood, and sometimes to chop it, to sweep and scrub and fight flies.

Necessity has largely emancipated the man. Invention made it cheaper and better to use the mower, the binder, the corn-harvester, the windmill, the gasoline-engine, the shredder, the silo, the riding plow, the manure-spreader. The cream-separator and the milking-machine are making the wife's work easier too, and so are many other things. But in many things the inventions of to-day have not been placed in the woman's hands because it has not been necessary to adopt them in order to make the farm pay.

So in the course of events that led up to making the farm pay, the woman has kept on as she used to, in order to make possible the purchase of implements by which her husband could do more work with less effort. But I can see no good reason why her sacrifice instead of being perpetuated by habit should not be terminated when the reason for it no longer exists.

The time has now come when we must move the flag of woman's comfort up to that planted for the men. Any farm that can afford a silo can afford electric light or gas, the vacuum cleaner, the dish-washer and the washing-machine. Any farm that can afford a gas-engine can afford a bath-room and an interior closet. And any farm that can afford a manure-spreader and a hay-fork in the barn can afford running water in the kitchen.

**A Square Deal
for Women**

It's a matter of looking at the question in the right way. It also means giving the women a square deal. And in the main it's a matter of the women themselves thinking of these things as attainable necessities. Of course it is perfectly true that thousands of farms have only a few of all these fine things for the men. On these farms there is a hope that next fall, or the year after, the spreader or the silo or the gas-engine may be within reach—and perhaps only a hope. But is it right to let the line of march in the way of progress actually reach the goal of full equipment for the men, and leave the women struggling along on the basis of twenty-five years ago until the men "get there"? It doesn't seem right. It doesn't tend to make for the content and happiness of women, girls, children, nor, for that matter, of the men either. When something is got to make the outdoor work easier and more profitable, is it not the part of wisdom and kindness to "trade up" with the house, and get a balancing comfort or labor-saver there?

Let us have good farm equipment and good stock by all means, for those are the things which make the farm profitable and profits pay the bills for the home comforts. But when the farm is what you would call "improved," let your wife or daughter point out the needs of the house before you reach out for more land or go in for investments that are far removed from comfortable living. For is anything more important than comfort and happiness indoors?

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FARM AND FIRESIDE



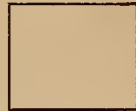
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Ohio Blazes the Trail

OHIO is the first State whose legislature has taken definite steps to avoid duplication of effort in agricultural development work. The ambition of the leaders of the new movement is to so adjust state matters as to have them managed on a business basis. "When you divide a dollar," says Governor James M. Cox last week, in conference with FARM AND FIRESIDE, "you lose much of its efficiency. Our aim is to place the agricultural and other interests of the State on such a basis that no two men or groups of men will be doing the same work." That ambition accounts for the Agricultural Commission Bill passed last May, which delegates the powers of the numerous boards interested in agriculture to one commission.

This bill provides for a commission of four members, three of whom are to be appointed by the governor of the State. The board of trustees of the state university appoints the fourth. Each man must be directly identified with agriculture or agricultural education. The governor is ex officio a member of the commission and has the deciding vote in case of tie. Each commissioner receives a salary, but the amount spent in this way will be more than saved by the more efficient and economical methods made possible. The commission takes over the duties of the state board of agriculture, the board of live-stock commissioners, the board of control of the state agricultural experiment station, the state dairy and food commissioner, the commission of fish and game, the state board of veterinary examiners and part of the work of the state board of pharmacy. The extension work of the agricultural college is also to be carried on under the direction of the commission. Where a consolidation of departments will make greater the value of the efforts to the farmer, consolidation will take place.

The State of Ohio in taking this advance step has courageously assumed a responsibility which many another State has shunned. There are too many States where the various matters of farm interest are handled in just the way they grew up. A need called for a trained man in one field. He was supplied, perhaps by the State, and made responsible to the governor. The next official was made responsible to the director of the experiment station. Perhaps the next appointee was made responsible to a board, until now there is scarcely a State without two or more agricultural officials working along some of the same lines, and one not knowing what the others are doing. The plan in Ohio is to have one force, and only one, doing a certain piece of work. Responsibility is definitely placed. If the agricultural interests are not rightly regulated the people can place the blame directly and justly on the commission, and finally on the governor, who appoints most of the commission. This Agricultural Commission Bill, which soon becomes a law, bids fair to work out better conditions. Other States that are groping about in the darkness of confusion caused by the multiplicity of offices can well look to the Ohio bill for the way out of their difficulties.

David J. Lewis on Parcel Post

THE name of the Honorable David J. Lewis, Member of Congress from Maryland, is synonymous with parcel post. You can't think of the one and not the other. He has thoroughly studied transportation matters and knows them. It is for this reason that his words are of great value. He writes the following facts—they give the pith of the present situation—for the readers of FARM AND FIRESIDE.

THE OBJECT of parcel post is to reduce express rates and the cost of living.

MEANS must be provided for the adequate transportation for retail shipments; namely, shipments small enough in sizes to suit consumers' needs.

EXAMPLE—Farm products are usually produced in such retail form (eggs, chickens, butter, hams, etc.), but as there is no direct transportation existing to

carry them direct from the farm to the kitchen they now must go into the roundabout processes of commerce, which double the price to the consumer.

RETAIL TRANSPORTATION—The railway is engaged only in the wholesale or commercial business. Its minimum weight is one hundred pounds—too high for retail purchasers. Besides, it does not articulate with the farm. The express company does not articulate with the farm, and its rates are prohibitive.

PARCEL POST is the natural agency to carry such retail shipments. It does not do so now, because of two restrictions upon its operation: the prohibitive weight limit and abnormal pound rates which, excepting the rate on the first pound, are from four to six times the cost of service on short distances.

REMEDY—The Postmaster-General has legal power, with consent of the Interstate Commerce Commission, to reform the rates, weight limit, zones, classifications and "other conditions of mailability." It is up to the President to make the changes necessary to serve the public properly.

The costs of service and service conditions warrant the following changes: Raise the weight limit to one hundred pounds. No weight limit on shipments deliv-



Hon. David J. Lewis

ered to the railway terminal by the consignor and collected from it by the consignee. A zone system of one hundred miles to each zone, including the local zone. A rate of one-half cent per pound for each such zone, plus the initial charge of three cents, arbitrary, for the first pound. An improvement of classifications to include books.

THE RESULTS—Farm and standardized products can then be marketed direct to consumer at one-half cent a pound in the first zone, embracing an area of 20,106,240 acres; at one cent per pound in the second zone, with additional area of 60,318,720 acres, and one and one-half cents a pound in the third zone, with additional area of 100,531,200 acres.

Suburban gardening, a new industry, will develop, such transportation being provided through the utilization of rural delivery, and the possible trucker being released from necessity of buying and maintaining an independent transportation system of his own.

The articulation of the railways, through the rural delivery, with the farms will be complete.

No one can miss the point of these statements and, if unprejudiced, fail to see the merit of parcel post. No one would think of returning to the old system. On the other hand, no one would say that the present parcel post is as efficient as it should be. Producer and consumer, all together, must work for a better parcel post. A parcel-post brief embodying the points above has been submitted to President Wilson, Postmaster Burleson and a general joint congressional committee. Results of at least a partial character are expected.

Lye as a Rodent-Destroyer

THE superintendent of the State Board of Agriculture of Nebraska recommends concentrated lye as a destroyer of pocket-gophers. With a small iron rod he finds the runway of the gopher, makes a hole down into it, and pours a little dry powdered lye down into the gopher's highway. The gopher gets the lye on his feet, licks it off, and thus is poisoned. If this will work with pocket-gophers, there would seem to be no reason why it will not destroy ground-squirrels, prairie-dogs, meadow-moles, woodchucks and other burrowing pests. But first we must recognize the extent of the evil.

Few persons realize the millions of dollars in damages caused by these little animals, in meadows, lawns; orchards and cultivated fields. There are many ways of poisoning them, none of which will work all of the time, but some of which will help every day in the year. Use them all, and make the conditions unhealthy for the burrowers all through the season. The evil may be cut down, if not abolished.

Distribution Must be Cheapened

THIS generation has witnessed astonishing development of transportation facilities, bringing all corners of the globe into most intimate relations. Railways, steamships, trolleys and motor vehicles now move produce and passengers so rapidly that we no longer consider any civilized country remote.

This great increase and diversification of products consumed has more to do with the higher cost of living than many generally appreciate. But few will contend that such expansion of commerce is not in accord with this era of progress.

We want and must have the best fruit of the world's progress, and while procuring the products of all lands, the cost of distribution must be kept from becoming burdensome. Transportation overcharges and unnecessary middlemen's profits are the twin causes of hardship to the consumer. The number of middlemen can and will be reduced, and the cost of carriage must also be lessened.

A change must be made in our delivering conditions. The common uneconomic practice of delivering milk, groceries and miscellaneous merchandise by a score of dealers where a half-dozen could do this service has added enormous unnecessary cost to our expenses. A concrete example of this loss has been computed for the delivering of bread in the city of a half million people.

Should the present hit-and-miss system of delivery be replaced by a block system, the estimate places the saving at \$70,000 per week. Add to this the saving possible where milk, meat, fish, groceries and general merchandise were delivered systematically by consecutive blocks, and the whole saving would be a big economic consideration for every city.

Carrying the plan a step farther, the distribution of farm products to the cities would be similarly lessened in cost. As now handled, much of the farm produce that is ultimately used in the smaller cities and larger towns is first shipped to the large market centers and then reshipped.

The various farm associations now being organized in every State can ultimately distribute the products of the farm so as to avoid congestion of markets and the losses in consequence to certain glutting of markets. Much unnecessary transportation cost can also be saved by more direct shipment of merchandise purchased by the farmer.

Organized marketing is now the hope of farmers everywhere. Tennessee alone has approximately a half hundred fruit and vegetable growers' associations, all working to lessen the cost of distribution of farm products, and thereby make more equitable the division of the fruits of farm labor. Every farmer has a duty to perform in assisting this movement to success.

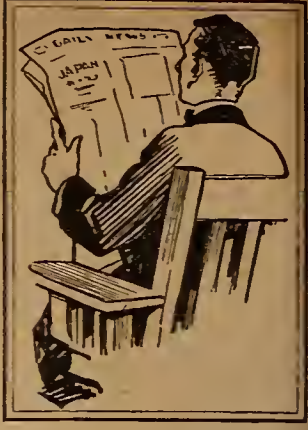
California's Anti-Alien Legislation

The Land and Labor Situation in the Farming Districts

By H. A. Crafts



The lowly "Chink" was in demand



They read the newspaper despatches

DOUBTLESS a good many people of the East are more or less mystified as to the real causes leading up to the anti-alien land legislation in California. They read the newspaper despatches, but these relate chiefly to doings at Sacramento and Washington, and do not enlighten one to any great extent as to why Californians so strenuously object to the Asiatics getting a foothold in their State.

No one who has not lived here for some considerable length of time and mingled with all classes of people can form a very clear idea of the situation, as there are many deep and far-reaching causes that are not apparent to the casual observer.

First of all, we must go back to the days of Chinese immigration, which reached back even to the days of forty-nine. In those days the Chinese were very welcome, as help was scarce. The bulk of Americans and Europeans disdained to perform menial service, and sought rather to become employers of labor than to perform labor themselves. Under these conditions the meek and lowly "Chink" was in great demand, and he was found in the mining camps, on the ranches, on farms, in the lumber camp, as well as in the towns and cities, where he served in a great variety of humble capacities, from chambermaid to laundryman.

The Chinamen also took up things on their own account, especially market gardening, fishing and clam-digging, all of which were done in a primitive fashion that marks the rural industry of the Celestial Empire, now the Chinese Republic. In Visitation Valley, on the peninsula just south of San Francisco, the Chinese market gardeners laid out their gardens, erected their rude and quaint windmills for irrigation and ever since have supplied the city with the greater part of its vegetables.

Another line of occupation made much of by the Chinese was the laundry business, and even to-day the Chinese laundry is in evidence in all the principal towns in the State.

For this business the Chinaman is not very particular about the kind of building he occupies, taking almost anything in the way of abandoned barn, shop, cabin or stable, just so long as the rent isn't much. In one of these primitive abodes he labors on, quite contentedly, smoking his pipe and eating his rice.

Beginnings of Anti-Oriental Feeling

But many of the Chinese, especially of the coolie type, were secured by contractors for railroad-building, mining, ditch-building, and such purposes. The State began to fill up with laborers from all over the world, and the competition for jobs became more acute. At the same time there was a reaction from the bonanza era to more conservative conditions, and men became more dependent upon the sale of their labor power for a support than in former days.

Thus, labor conditions began to be more a question of public agitation. Labor began to organize, and then began its crusade against Asiatic immigration. Dennis Kearny voiced the spirit of antagonism on the San Francisco sand lots, and as a result the Chinese Exclusion Act was passed by Congress, and the tide of Oriental influx stayed.

Later on the anti-Oriental opposition was functioned by the Asiatic Exclusion League, an organization backed by organized labor and carrying on a militant and ceaseless campaign against the admission of Asiatic labor into the State.

Chinese exclusion under these conditions has been very effective, and while a few Celestials are now and then smuggled into the State, the aggregate Chinese population is said to be on the decrease.

According to the Bureau of Labor Statistics of the State of California there were in the State in 1908 approximately 30,000 Chinese and in 1910 something like 31,100; and it is probable that the number to-day keeps pretty close to these figures. The original Chinese are growing old and gradually dying off, and their natural increase, together with all newcomers, is not sufficient to maintain the original population.

The advent of the Japanese into California is of much more recent date, and

it exhibits phases that differ greatly from those marking the Chinese occupation.

The great majority of the Chinese who have come here have been of the more reactionary class. They have largely retained their native habits, customs and beliefs, while with the Japanese it is quite different. Japan, as we all know, has experienced a remarkable awakening, and her sons who come to America exhibit all the evidences of having become imbued with Japan's modern progressive spirit: and especially do they plume themselves since the Japanese arms successfully coped with the Russian Bear and gave the nation the right to claim a position among the so-called world powers.

The Japs Copy American Ways

Yet there is nothing offensive in this new attitude of independence. The Japanese who come to California appear to be anxious to learn American ways and customs, and conform to them as far as lies in their power. They adopt the clothes of the American, and in their family relations appear to copy closely the customs of their adopted country. So long as necessity compels, they accept

almost any employment that seems open to them, and they make very skilful, industrious and sober helpers.

In the towns and cities they act as household help, cooks, janitors, caretakers and gardeners; in the country they secure employment on farms, ranches, in vineyards, orchards and gardens and are skilled in their work.

White and Jap Labor Compared

The Bureau of Labor Statistics publishes two very interesting charts showing the comparative percentages of Jap and white labor, and Jap and all other kinds. As compared with the whites the Japs constitute ninety-five per cent. of the vegetable-pickers, ninety-four per cent. of celery hand-workers, eighty-eight per cent. of beet-toppers and loaders, eighty-five per cent. of beet hoers and thinners, seventy-three per cent. of tree-pruners and fifty-eight per cent. of fruit-pickers.

In 1912 the entire Japanese population of California was 58,000, and fifty per cent. of this number were to be found in the country and engaged in horticultural and agricultural occupations. They make excellent gardeners, fruit and berry pickers, pruners, and vegetable hoers.



He served in many capacities

Contented with his pipe and rice

They make excellent gardeners

Curing Bad Habits in Horses

By David Buffum

Galloping in Harness

AMONG the common bad habits which horses sometimes contract is that of galloping on the road. A farmer has just written me, telling of a three-year-old mare which has this habit. She had never been ridden, and the third time she was driven on the road she began to gallop. She refused to trot, and when reined in would slow down to a walk. This mare would gallop practically all of the way on the thirty-mile drive that she took regularly. Shoeing with heavy shoes in front made no difference.

Such a habit as this is, of course, foolish. The best treatment is to set her to plowing old ground or some such work that will keep her steady and quiet for at least a month. During this time she should never be allowed to get out of a walk. Plowing or some similar work has a quieting and steadying effect, and is especially beneficial when a horse is nervous. If the horse is small plowing should not be overdone. An hour or two of such work in the morning and a similar amount in the afternoon will be plenty.

In handling a horse which has such a habit or otherwise shows nervousness, one must have patience in the extreme. The method of subjecting her that I have outlined is that of placing her under steadying and civilizing influences instead of attempting to cure her of the habit by force.

Shying on the Road

ANOTHER bad habit in a driving-horse is that of shying on the road. I have in mind the case of a six-year-old driving-horse which just recently began to be scared by strange objects on the way-side. A year ago nothing would scare him.

Shying May Develop After Breaking

The owner of the horse was distressed because the horse had learned the shying habit when at that age.

It is not at all unusual for a horse, that shied very little when being broken or afterward, to take more notice of objects on the road at a later time. When

being broken to harness his attention is largely absorbed by the novelty of the harness and the rattle of the wheels. Later, when thoroughly accustomed to these things, he begins to notice objects that at first escaped his attention. This applies more or less to all horses, but a great deal more to some than to others.

The only cure is to gradually accustom the animal to the objects he fears, exactly as if he had showed the fear at an earlier stage.

Handling the Ex-Runaway

WHEN a horse has once run away he is always a difficult case to handle. I have in mind a certain two-year-old colt of Percheron stock which after being driven to a cart a number of times became frightened one day without apparent cause, whirled around in the shafts and got away. The colt was gentle to handle when harnessed, but very nervous on the road. The owner of the animal appealed to me for advice in effecting a cure.

Another bad habit which this particular animal had was to stop whenever it saw an object that it feared. Urging the animal forward caused it to back.

Construction of a Breaking-Cart

The best method of handling such a horse is in a breaking-cart. The shafts of a breaking-cart should be made of green saplings, cut in the woods and capable of bending without breaking. They should be much longer than ordinary shafts, and the traces pieced out with strong new rope to reach the whiffletree. With such shafts I have had three colts throw themselves on the ground, the shafts remaining as good as ever. If you do not live where you can secure green saplings, the shafts may be made of good, strong oak, but they must always be unbreakable.

In handling an animal which has already run away, you must be patient, quiet and resolute; bearing in mind that when such an accident occurs it always takes a long time to get the colt "nicely over it." In the end one is usually well repaid by having a nice, gentle and thoroughly trustworthy animal.

Let us now examine as to wages and conditions of employment. The authority quoted above recently investigated 4,102 farms extending to all the principal agricultural and horticultural sections. Of these farms 2,369 were operated by white farmers, and 1,733 by Japanese farmers.

Of the white farmers 1,135 employed white help alone, 1,105 employed white and Japanese mixed, and 129 employed various other races.

The average wage paid by white farmers employing white male help exclusively was \$1.38 per day with board, and \$1.90 per day without board. The average wage paid by white farmers employing white and Japanese help mixed was \$1.30 per day and board to white help, and \$1.82 without board: to Japanese help with board, \$1.49, and \$1.54 per day without board.

The average wage paid by Japanese farmers to Japanese laborers was \$1.57 per day with board, and \$1.65 without board.

The report goes on to say: "The wages paid to Japanese, however, cannot be taken as their average earnings, as 49.2 per cent. of the entire number employed were working by contract or piece-work, under which conditions their earnings were made larger than those of the whites."

Now we approach the crux of the whole question. We see that where the whites and Japs work side by side that the Japs are paid fully as good wages as the whites. But only about half of the Japs work for wages, and this means that they have entered the arena of business, and are doing what the white man is doing—driving a bargain.

But let us revert a moment to the straight wage-working element: white farm labor in California is virtually unorganized, while the Japs have inaugurated among themselves a strong semblance of organization.

They are led to do this both for economic and ethical reasons. Landing upon a strange shore and confronted by certain hostile elements, the Japs naturally band together for self-protection, as well as for self-advancement.

The Jap as a Business Man

Then, having awakened and observed the ways of the white man, the Jap proposes to imitate the latter, and to profit thereby. So he organizes as a mere laborer in order to enforce improved conditions and emoluments from the employing class, and then goes a step further, which is to enter the arena of business.

He not only forms the semblance, if not the reality, of a labor union in the ranks of wage-workers, but he organizes business enterprises and business combinations.

He becomes a landowner, a land lessee, a labor contractor, a business contractor, and demands hostages. In the way of business the case of the "California Potato King," so called, is an instance. Here is a Japanese who has so completely imitated Yankee ways and methods that he has virtually secured control of the potato-market of California, if not of the entire Pacific Coast.

We can now understand pretty well the reason for both the opposition to the Japanese in the ranks of labor and in the field of business enterprise. To organized labor the Japs is always a menace: to business he is not a menace until he enters the field of business and sets himself up as a competitor to the white man. Then there is something stirring.

And I look upon this alien-land agitation as but an incident in this rising tide of commercial jealousy. Surely the facts as they stand do not indicate a very serious menace in the way of Japanese ownership.

The Bureau of Labor Statistics shows that in 1912 there were but 12,726 acres, or twenty square miles, owned in California by the Japanese. Now, as the Japanese form only 2.32 per cent. of the population of the State and own only twenty square miles of land out of a total of 153,650 square miles embraced within the boundaries of the State, the danger of a Japanese submergence does not seem to loom very large at present.

Making Farm Lands More Valuable

Where Alfalfa is Grown, Soils Become Richer

By Harry B. Potter



Utility beautified

ALFAFA will pay six per cent. interest on \$1,000-an-acre land; it is equal to wheat-brau as stock-feed; one acre of alfalfa is equal to six acres of timothy; where corn will net \$15.80 per acre, alfalfa will net \$50 per acre. Every farmer should grow some alfalfa."

That is the statement of A. P. Grout, for twenty years a grower of this crop, now president of the Illinois Alfalfa-Growers' Association. It is not a wild boost for the crop that is creating so great interest everywhere. It is

the conservative opinion of one who has made a success of farming and gives credit to alfalfa for much of that success. Mr. Grout is but one of many who now realize that alfalfa is a roughage without a knowu superior, and that if it can be successfully grown the farm and the farmer will become richer.

A well-drained soil, supplied with phosphorus, potash and lime, free from weeds and carrying alfalfa bacteria offers everything in favor of a good alfalfa stand, and nothing against it. Nebraska and Kansas, and many another State, have climatic and soil conditions so favorable that the crop has become a roadside plant. Sweet clover grows side by side with it.

Alfalfa with Care Grows Anywhere

Likely from this observation the opinion was formed in the minds of those interested in the two crops that wherever sweet clover was found as a roadside weed there alfalfa would grow. This was disputed from the very first, for said one man (a type of many), "I have tried to get a stand of alfalfa for three years, and I have not a single plant to show for the effort, and yet there are all sorts of sweet-clover plants growing along my laues and by the roads." But he had tried blindly to get alfalfa in most cases, thinking that because he could put in corn with slipshod methods and get fair results, or because easy-going methods of wheat-seeding yielded enough to feed his family, that the same practices would apply to alfalfa. And a few have secured good stauds with these careless methods, but in the corn-belt States, where clovers are slow in responding to the culture of man, few have succeeded with alfalfa without care at seeding-time.

Nebraska may grow the crop easily, other States, the one in which you live perhaps, may call for care and effort. And yet alfalfa can be grown in any section. Alfalfa simply says, "I am worth more than the other crops, I can supply you more feed that will return you

greater profits than these other plants beside me, and I am not going to give over these high returns for a mere trifle. Study to ascertain, and then apply the right principles for your conditions, and I will yield for you just as I have for many another farmer." Alfalfa will yield well, or uot at all.

Alfalfa is waiting for an invitation to every farm in the United States. Joseph E. Wing, the alfalfa enthusiast of Ohio, says, "I do not hesitate to affirm that alfalfa can be grown successfully on any farm in the United States." This is the final word, for Mr. Wing has seen the farm lauds of all of the States, and he has known farm conditions from having met them himself.

"Alfalfa on every farm" is the slogan he suggests, and it is the oue back of the movement for more alfalfa now being carried on by the International Harvester Company. Prof. P. G. Holden, formerly Superintendent of Agricultural Extension at Iowa State College, Ames, Iowa, is in charge of the exteusion work.

"Yes," says Professor Holden, "corn is important, but alfalfa is more importaut. We must have corn, but there is a teendency in this corn belt, in which we are at this time working, to sell the coru. You can't sell the alfalfa; at least, you won't. You'll feed it. That will mean more dairy cows, more sheep, more pigs, more beef cattle, more horses, more chickens, and it will mean better stock, and better citizens too. The plan of the movement is simple. Perhaps a



Telling the story of alfalfa at the Wing farm

large meeting will be held at some point. Promineut speakers will discuss the methods by which alfalfa has been made of use in the section they are familiar with. Following this meeting there will be small meetings held at the farm homes of the county, the speakers making the trip in automobiles. In all cases the farm is the place where the message is delivered, right on the spot where alfalfa difficulties are being met. The movement is not local; it is national. Michi-



The depleted condition of the out-of-door kitchen testified to the attendance at the meeting

gan has had a series of meetings, Illinois and Ohio likewise. Other States will soon be reached.

A series of Ohio meetings was held in May, beginning at Mr. Wing's farm in Champaign County. On this farm alfalfa has been a successful crop for many years. As a result the farm is now fertile where once it was not, because it had been drained of its fertility by heavy cropping. Of course alfalfa did not do it all, for potash and phosphorus are common fertilizers on this farm, but alfalfa furnished the inspiration with the immense supply of nitrogen it has been able to take from the air and place in the soil. No better farm could be found for an alfalfa meeting than that of "Alfalfa Joe." Early in the morning automobiles began to arrive, although the meeting was not to begin until about one in the afternoon. By noon the roads all along were lined with vehicles, and the farm yards and fields were crowded with interested people: farmers, business men, college professors, women and children; many were from other States. The story of alfalfa was told, not alone from the platform, but as man met man in the crowd ideas were exchanged. Many were there who had successfully placed alfalfa ou their farms; they were glad to exchange experiences, to learn from the experience of others.

Farm Work Becomes Interesting

And if all of these experieuces could be put together they would have many of the same fundamental ideas at their base—good seed always, of course. A well-prepared seed-bed too; one that is fine and firm. Fifteen to twenty pounds of seed to the acre is the safe amount to use. This amount is seeded perhaps with or without a nurse crop in the spring, or even along in July or August, as conditions demand, but seeded in a bed rich in manure kept free from weeds. Then the cutting of the crop and the feeding of the hay would all have to be told. But even the money received from the feeding of the crop would not tell the whole story, for the fertility and humus value of the alfalfa-roots and of the manure from the alfalfa-hay must be related over and over. That increase in soil values means greater yields of the other necessary crops, and so the farm work becomes more interesting and valuable and bears in it less of drudgery, all because of the one crop that awaits your invitation—alfalfa.

Alfalfa Under Irrigation

Success with Alfalfa-Fed Hogs in the Semi-Arid Sections of the Southwest

By Z. E. Black

THE rainfall over Hale County, Texas, in the north-western part of the State, is only about twenty-four inches per annum, and practically no alfalfa is grown save under irrigation by pumping from wells with centrifugal pumps. This method of irrigation was discovered about three years ago, and since that time about 10,000 acres have been successfully seeded to alfalfa in this section. A local organization of a group of English capitalists, who bought and are placing 60,000 acres under irrigation, are uow planting 20,000 acres to alfalfa.

The soil is an alluvial loam, three to six feet deep, with sufficient sand to prevent packing, souring or baking under flooding irrigation methods. Underneath the soil to a depth of twenty feet extends a pervious clay, which eliminates all drainage difficulties; alfalfaroots and water easily penetrate it. The land is level, but with a slope of about ten feet to the mile to the southeast, and the water is pumped directly from the wells onto the land. No leveling is necessary, and the construction and upkeep of ditches amounts to practically nothing. The wells are supplied by the melting snows of the Rocky Mountains, and the subterranean strata appear to be inexhaustible. Neither the water nor the soil contain a trace of alkali.

The lift of the wells in this district ranges from thirty to sixty feet, and the cost of pumping is approximately one dollar per acre foot—that is enough to cover an acre in water to a depth of six inches twice. Considering rainfall, which comes mainly during the growing season, from \$1 to \$2.50 worth of irrigation per acre is all that alfalfa requires to make maximum yields. The wells range from 1,000 to 1,500 gallons per minute, and one well will take care of 160 acres of alfalfa.

Hale County alfalfa is planted anywhere from the twentieth of

August to the twentieth of September. Planted at this season, no "nurse crop" is needed to protect it from weeds. Twenty pounds of seed to the acre insures a good stand. The seed is sowed from one to one and one-half inches deep, after an irrigation, when the soil is just wet enough not to bog. No inoculation is needed, but a better and thriffter stand is secured if, prior to planting alfalfa in the late summer, the raw land is broken deeply in the fall. Then in the spring plant and plow under while green a crop of cow-peas or other legume. Deep plowing in the fall before planting is essential, as alfalfa needs a perfect seed-bed.

Net Profits from Hay and Seed

The growing season ranges from six to nine months, permitting from five to seven cuttings of hay, averaging from one to one and one-half tons per cutting, to be

taken off each year under irrigation methods. The usual price is \$15 per ton f. o. b. Plainview, the county-seat. Irrigated alfalfa nets from fifty to one hundred dollars per acre per annum wheu used exclusively for hay. One man recently netted \$150 per acre from both hay and seed. Hale County alfalfa has taken the first premium ou hay at the Dallas State Fair for four years in succession, and the seed is in great demand.

The crop is thought to be imperishable here. No cultivation is necessary save an occasional disking. After each cutting of hay is taken off—providing there is no heavy rain—the meadow is thoroughly flooded. Alfalfa is the staple crop on the Texas plains—that cattle country which pumping from wells is making over into an agricultural country—because it yields the greatest returns with the least labor expended. There is always a ready market, and if the market should become "bullish" the alfalfa can be fed to stock with great profit or stored away, since it is in no sense perishable.

In 1912, E. H. Perry, of Hale County, Texas, made a test of the merits of grazing pigs on alfalfa. During the spring month he placed several sows and their litters of pigs in an enclosed irrigated alfalfa-field and fed the pigs absolutely nothing for a period of six months. At the end of that time they were weighed and showed an average of 234 pounds. Their cost of production was less than two cents per pound. The prevailing market price when they were sold was around eight cents in the hoof.

It is the custom in the irrigated sections of the Texas plains, however, to graze the pigs on alfalfa to the exclusion of other food up until about six months of age, then "top them off" on a diet of maize and Kafir-corn in the head. Year in and year out, pork can be produced on the plains by the above methods at from two to three cents per pound.



One of the irrigated alfalfa-fields supplied with water pumped from wells

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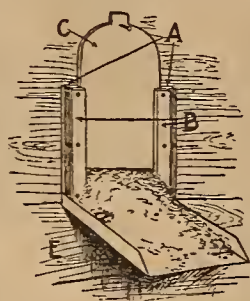
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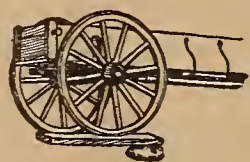
A Sackful a Minute



WITH this chute two men can fill a sack of oats or wheat in a minute. It should be nailed on the grain-bin. It is very easily operated. While one man holds the sack the other works the slide. To make it, cut a hole eight inches wide and twelve inches high in one of the boards. Nail strips (A) of one-half four pieces along the edges of the hole, and nail B over them so as to make a slide for door (C). A trough (E) of light sheet iron is attached as illustrated. Raise the door to permit the grain to flow.

EARL TREGO.

As Good as a Jack



HERE is a kink which may save some poor brother a lot of hard lifting if he should be so unfortunate as to lose a tire from a loaded wagon. To remove the wheel, form an inclined plane with a short piece of plank, one end of which is close under the wheel, the other end raised three or four inches. Drive wagon forward until wheel is near the top of the inclined plane. Block up axle, knock blocking from under the high end of plank, and the wheel will swing free ready for removal.

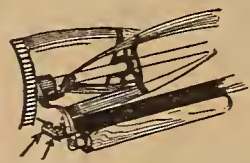
J. S. EDWARDS.

To Loosen a Tight Nut

WHEN a nut has rusted tight and none of the ordinary efforts with wrenches will loosen it, place it upon a piece of solid iron (an anvil if you have one), take a cold-chisel, place the bit on the middle of the nut on one side as if you were going to cut it off the bolt, and strike hard a few times with hammer, until the chisel has cut into the nut about one eighth of an inch. Nine times out of ten the nut will loosen and turn when you use a wrench.

S. E. RHINE.

What the Lawn-Mower Needs

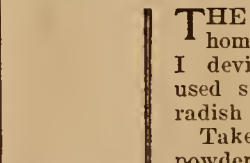


PROBABLY not one person out of a dozen who uses a lawn-mower knows that it does not always cut according to the sharpness of the knife, but according to how close the reel-blades run to the knife. For this reason when it begins to run over the grass without cutting clean the mower is supposed to be dull and must go to a machinist to be sharpened.

This is not what it needs. Take a small bicycle wrench, and by turning the set-screws at the ends of the knife force it up until each blade scrapes lightly on the knife from one end to the other. Now oil the machine well, and it will cut as well as when it was new.

D. A. McCOMB.

No Backache from This Seeder

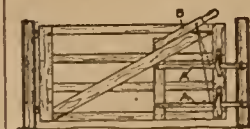


THE drawing shows a home-made seeder which I devised last spring and used successfully for onion, radish and lettuce seed.

Take a large-sized baking-powder can, and punch a hole in the lid and one in the bottom of the can. Then punch eight holes around the middle of the can. Next take a piece of heavy wire such as the top wire off of a piece of hog-fencing. Put the wire through the can, bend up one end on the lid side, then slip on a spool for a washer, and bend up the other end of the wire. It saves many back-aches and costs practically nothing.

MRS. FRANK TRUMBO.

Stock Can't Open This Gate



HERE is a good latch to prevent unruly cows or hogs from opening the gate. The gate has two latches (AA).

They work independently, but may both be raised with the lever on top of gate, which is connected by wires passing from AA to B. One latch should be located near the bottom of the gate, and the second about two thirds of the way up the gate; this will prevent the cattle from opening the gate, as they cannot lift both the latches at the same time.

JOSEPH VOLDEN.

To Preserve Tarrd Paper!

I HAVE found that a thick coating of whitewash will greatly preserve tarrd paper. Tarrd paper that I fixed in this way has given service for ten years. The whitewash more than doubles the life of the paper, besides making it more attractive. Its cheapness is an additional recommendation. JOHN S. ANDERSON.

A Novel Wire-Stretcher



A HANDY contrivance for the fence-builder who has no stretcher is a cant-hook, a piece of wire and a mowing-machine guard.

The sketch shows how the stretcher works. It will stretch barbed wire fence for fifteen rods, and can be used for tightening ropes as well. Best of all, the parts can be used for other purposes, and you have no capital tied up in a patent stretcher that is used only occasionally on most farms.

GUY RIGGLE.

A Walk That's Always Dry

STRETCH a cord from your house to barn or street. Two feet to one side stretch another cord. Draw a line on the ground with a sharp stick along the cords. Take up the cords, hitch up your team, and plow out a few furrows between lines, then dig down about eighteen inches, and fill in with small stones picked off the plowed ground around the farm. Put a good layer of sand on top, and you have a path always dry and never slippery, even in the winter.

H. V. DAVIS.

This Cow Won't Kick

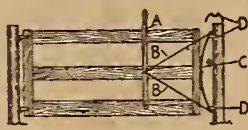


THIS is a device my husband uses with success when milking unruly cows that have the bad habit of kicking.

Take an iron hoop ten inches in diameter (one off of an old wagon-hub will do), pad it well, and find a stout, smooth stick fourteen inches long. Now lift the cow's right fore foot, bend back at knee, slip the hoop over knee, and put the stick through between the hoop and knee. Thus the cow must stand on three feet and will not try to kick. Do not compel the cow to stand on three legs any longer than the time of milking her.

MRS. HENRY UPPENDAHL.

Buggy-Spring Gate-Latch



FOR a strong yet simple gate-latch the one illustrated is the best of all I have ever used or seen. The illustration explains the construction.

A is a lever to open the gate. BB are rods fastened to the lever and to the ends of C, which is an old huggy-spring bolted to the gate in the center. DD are catches made of strap iron and nailed to the post. The shape of the catches is shown just above the post.

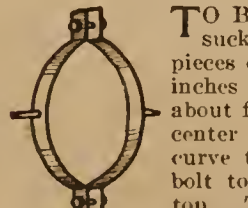
C. H. AUSTIN.

Improvement on Paper-Pot Making

I READ with interest the description of Mr. J. R. Spear's for making paper pots for garden plants described in FARM AND FIRESIDE for March 1st. I wish, however, to mention one improvement I have made, and that was by driving a double-pointed tack on the black line on each side of block used as a form. These tacks made it unnecessary to watch the black line every time a paper pot was made.

WALTER C. WOOD.

For the Self-Sucking Cow



TO BREAK a cow of self-sucking take two flat pieces of iron about fourteen inches long, weld a spike about four inches long to the center of each piece of iron, curve to fit cow's neck, and bolt together at bottom and top. This device is not a cruel one, and the collar can be removed at any time by unscrewing one of the bolts.

WHITNEY MONTGOMERY.

Headwork Winner

The first-prize contribution in the Headwork Shop in this issue is, "As Good as a Jack," by J. S. Edwards.

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Crops and Soils

Clean Cultivation and Successful Rotations

By W. H. Jenkins



For early cultivation

MOST farmers like to grow good crops of clover and alfalfa because they save a large part of the cash paid out for grain on the dairy farm, and because they improve the texture of the soil.

Growing clover and alfalfa, and the crops that naturally go with them in rotation, as a combination crop of corn and soy-beans, oats and peas, and perhaps potatoes, is the end to work toward if you are growing your own roughage and buying grain to balance it.

Perennial weeds, sour soils and other difficulties must be overcome in growing corn and alfalfa. Many newly seeded fields of alfalfa have been plowed up in two or three years because the weeds crowded out the alfalfa, or the soil was so sour or poorly cultivated that the alfalfa never got well started.

You Can't do Good Work in Crooked Rows

There is only one time in the ordinary four-year rotation that the farmer has an opportunity to clean his soil of weeds and sweeten it, and that time is with the corn crop. On the right cultivation of this corn crop depends to a very large extent the success of the whole rotation.

Right cultivation of corn means, first, it should be planted in straight rows three and one-half to four feet apart if in drills, or three and one-half feet each way for the large growing varieties. Perfectly straight rows mean the possibility of doing the best work with the cultivator. The cultivator-teeth cannot run as close to crooked rows, so there is a wider space to be hoed by hand, for all weeds should be taken out. Perfectly clean cultivation of the corn crop is the only effectual way of destroying the weeds that are crowding out the grass over large tracts of meadows.

Whatever the form of the cultivator used in the corn, many fine teeth are better than a few coarse ones. Give the first cultivation as soon as you can see the rows of corn. Set the shovels so as to pulverize the soil and so the shovels will scour. This first cultivation makes the best possible conditions for the corn-roots that will later occupy it.

As the corn grows higher and gradually extends its roots across the rows, cultivate less deeply, just enough to make a dust mulch and hold the moisture already in the soil. There is seldom any lack of water in the water-veins and reservoirs under the soil, but the plants may be wilting for lack of water which may be within a few feet. My readers who are not familiar with the principle of capillary attraction may see its



The first cultivations should be moderately deep, but later ones shallow

operation when a sponge is dipped in water and the water rises all through it.

Cultivation should make a fine layer of soil on the surface that prevents the escape of moisture from the surface, but the capillary attraction acting on the moisture in the lower depths of soil, brings it to near the surface where it can be used by the plants.

With uncultivated crops the farmer has no control over underground moisture and is entirely dependent on the overhead supply, which may fail at any time. With the right use of the cultivator he may keep the corn growing luxuriantly during protracted droughts.

Before buying cultivators, or the teeth and steel points for them, one should understand the principle of cultivation and the

right use of the different points. If one plants a large acreage of corn he can afford to purchase a two-horse riding cultivator for thirty to fifty dollars, while the farmer with a smaller field will need only the one-horse walking cultivator.

For general purposes a riding cultivator should be selected with tooth-bars, adapted for using few or many teeth as desired. There should be sets of the coarse steel points for early and deep cultivation, and fine points set close together for shallow cultivation later in the summer.

There are many compensations for such cultivation of the corn as I have indicated. It is the only way I have found to eradicate quack-grass and at the same time grow a good crop. Besides increasing the growth of corn and getting the soil clean for growing clover or alfalfa, it makes a perfect seed-bed for a cover crop, which can be sown in the corn, perhaps in July, just before the last cultivation. The kind of a cover crop for corn will depend on the soil and location. Clover is best if you are satisfied it will thrive. If not, mix vetch and rye, because of the high price of vetch.

If the corn gets large you can sow the seed on horseback, then cultivate shallow



Cultivator equipped with twelve fine teeth

and follow with a plank to compact the soil, especially if it is dry. The cover crop will make fall pasture and add vegetable matter to the soil.

Good crops come to him who cultivates.

There's less trouble for him who cuts his weeds before they are trouble.

Rapid Work with Oats

By M. Coverdell

LAST season a neighborhood of Iowa farmers found themselves greatly handicapped by a dearth of help in the field at thrashing-time. With a heavy crop of oats standing in shock and a thrashing outfit waiting for grain part of the time, some farmer suggested trying the sweep-rake as a means of hauling the shocks in.

Accordingly, two of these rakes were secured at once and put into operation as a trial. The plan worked so well that the usual method of racks and wagons was abandoned and the rakes used altogether. One man can manage the team and rake, pitching up his own load when he reaches the machine, and in this way there is a stream of teams going to and coming from the machine all the time.

There are other points of economy than that of time and labor embodied in this plan. It is easier to pitch the bundles from the rake, as the shocks are hardly molested in their upright position by running the sweep-rake under them. Another big item of economy is that of saving considerable grain by not having to handle the sheaves so many times as with wagon hauling. There is practically but one handling, that in pitching up at the machine.

Let us give up what we know isn't good for us, and live up to what we know is.

Many farmers are a great success at growing crops, but they fall down miserably when it comes to getting the money out of those crops. What we need at the present time more than any other one thing is better business talent on the part of our farmers.

Get Advice About Novelties

By C. Bolles

ONE of the most progressive seedsmen of the Mid-West brought to our notice the fact that farmers are begging him for seed of the new sorghum, "Feterita." They don't care so much about how much it costs so long as they have the seed to try out. It is a commendable trait to have an open mind, but to be too open-minded when it comes to trying something the experiment stations are not sure about is another thing. This particular variety, we believe, has one more year to run before completing its five-year test, and then it has to be given a feeding test in order to prove its value.

Here is a thought worth taking home, the key-note of all new varieties, no matter what grain is involved: Find out what the several experiment stations think about it, and if they recommend it ask them how much they intend to plant to it the following year. If they are going to keep it in the test plots (one-tenth acre) it is best to let them keep it there, but if they are going to sow a goodly acreage there is hope of the thing succeeding elsewhere.

An Engine to Run the Binder

By James A. King

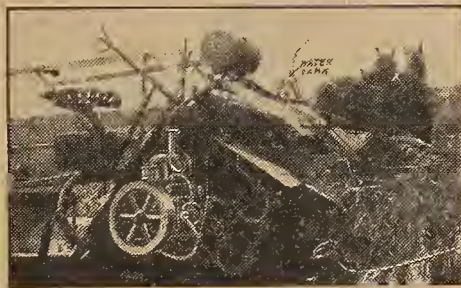
HARVEST is the crisis of the farm year. The binder is the solution of that crisis. But it must be kept working constantly from the time the grain is in cutting condition until it has all been cut. A small gasoline-engine attached to the binder is being found one of the best aids in this important task.

The engine is not used to pull the binder, but simply to operate the cutting and binding mechanisms. It furnishes the power that formerly came from the master-wheel. So that, with the engine attachment, the master-wheel simply carries the weight of the binder. One man in North Dakota in January, 1913, cut 250 acres of flax in five inches of snow, with the thermometer at fifteen below zero. He mounted the binder on the runners of a bobsled, and one of these little engines worked the binder as it was drawn through the snow by two horses. This combination makes it possible, with two horses, to cut any crop of grain, no matter how soft or slippery the footing may be; a sliding bull-wheel does not interfere with the working of the binder.

There are other important advantages. All parts of the binder being driven by the engine, they operate at the same steady speed whether the binder is moving slowly, standing still or turning a corner. There is no jerking of the machinery when the horses lunge, so there is little danger of breaking chains and canvases.

Not every stationary engine is adapted to use on a binder. But several are built specially for that purpose. They are generally about four horse-power. This gives plenty of power to drive even a seven or eight foot binder in heavy grain. Some are mounted directly on the rear frame of the binder with a driving-sprocket meshing into the driving-chains. Others are mounted on a small truck, that trails along behind, and drive by means of a shaft and universal joint. Up to the present time the former has proven the most successful.

The beauty of these engines is that they are not one-purpose investments. They may be used on mowers, corn-binders, corn-pickers, potato-diggers, and all such machines. The rest of the year they may be taken off and used just like any other stationary engine. They are simply an ordinary gasoline-engine so designed and so built that they can be quickly and easily



An engine with many uses

mounted on any of these machines. And yet this special designing does not in any way interfere with any other work for which one may want them. In fact, their necessary lightness combined with strength makes them an unusually desirable general-purpose gasoline-engine.

When to Cut Alfalfa

By H. J. Waters

THE following is the best experience of the Kansas farmers. For ordinary purposes alfalfa should be harvested when the first blossoms appear, usually when the first fifth of the blossoms are open. If allowed to go beyond this stage there is likely to be considerable shedding of leaves, and the hay becomes moldy besides. Furthermore, the next crop may not come on quite so well.

Some alfalfa is fed to horses in Kansas and Colorado. For this purpose it is best to cut at a later stage than above recommended. Early-cut alfalfa is too watery to be fed successfully to horses, but if cut when in full bloom it makes fine horse-hay, and combined with corn will make a good ration without oats. Thus it is a common practice of the farmers of that section to cut some of their alfalfa at this late stage, especially for their horses. In this way it is successfully used for work-horses and brood-mares, as well as for growing colts.

Look Forward to Thrashing-Time

By James A. King

IHAVE seen queer summers and queer falls, each breaking the record for some peculiarity. But never in my life did I see so much grain standing in the shock the last half of September as was standing in 1912.

In the closing days of the month I made a trip through the Dakotas, Minnesota and the northwest quarter of Iowa. There were shock-fields on either side of the train. Sometimes almost a whole neighborhood was unthrashed. Scarcely a grain-stack to be seen anywhere. And most of the few

which were seen showed the butts of the bundles black, rotted and filled with the dirt from a gopher-mound. Indications were that those farmers had stacked as a last resort, having lost all hope of ever getting a separator in time to save their grain from the shock.

The Grain Sprouted in the Shock

Thousands upon thousands of acres of grain standing in the shock! Grass, weeds and volunteer grain standing half to two thirds as high as the shock itself. Young grain growing out of the very bundles themselves until some of the cap-sheaves had grown tight to the shock. The shocks of



Acres of oats were unthrashed, and the top sheaves had in many cases sprouted badly

tangled grain were little more than piles of manure. It was a heartbreaking sight. As the crop comes from the separator it is five to ten per cent. less in quality than it would have been had the thrashing been done at the right time. Because of its long exposure to the weather, it depreciated fully another ten per cent. in market price because of quality. It was at least discolored, often partly spoiled.

Think of what this means! Almost one fifth of the small grain absolutely lost to the farmer, thousands, yes hundreds of thousands, of dollars' depreciation and loss without bringing gain to anyone. This is the portion of the crop value which, if saved, would have helped make up the year's net income. The loss means profits that were made, but were not saved. Money that was earned, but was never collected.

Why was it lost? Because the communities or the individual farmers did not have sufficient equipment for saving it in a wet season. The strength of a chain is measured by its weakest link. So the efficiency of a farm's equipment is measured by its ability to meet the crises of the worst seasons.

Many people will say that the proper way to prevent such a condition of affairs is for every man to stack his grain. I am not convinced that it is, and I have stacked grain a good many seasons. If I can be certain of not being later than eighth in a thrashing run I would rather thrash from the shock.

Thrashing Clubs Will Solve the Problem

It is my firm belief that the best solution of this important problem will be more complete and efficient equipment for handling the grain. The worst condition noticed was in northwestern Iowa. In such a firmly established country as that the day of the commercial thrasher with long runs should have ended.

The farms of larger area will some day have their own thrashing equipment. Those of smaller area will be grouped into thrashing clubs of four to eight members; the club owning its own complete equipment and doing the work for no one but its own



A thrashing club having its own machinery may be the solution to the problem

members. But this one thing is absolutely necessary: adequate provision must be made for saving whatever yield may be obtained, even in the most difficult seasons.

Outlook

By Ramsey Benson

AMZI by no means denies that it broadens a people's outlook to have their country bulk big among nations. Nor does he doubt the benefit.

"Provided," he makes reservation, "the broad outlook doesn't mean too broad a patch on their pants!"

The nation, Amzi insists, is made for mau, not mau for the nation—we can't afford to forget that. Napoleon gave Frenchmen an outlook which for breadth must have been a peach, but the patch on their pants is hardly back to the normal yet, after a hundred years. It won't do to take our ideas of national greatness from the middle ages.

"Mere bristling," says Amzi, "is out of date, not only because mere bristling was never so costly, but even more because it was never so silly."

Farm Notes

The Family Workshop

By S. E. Lytle



IN MANY respects one of the most important parts of the average home is the family workshop. And to farmers, and others who live in partially settled neighborhoods, such a shop is almost an absolute necessity.

From the standpoint of economy a reasonable investment in the equipment of such a shop will pay for itself many times over. For such a workroom set apart if possible a dry, tight wood-shed or other outbuilding, or if such is not available a cellar or basement will answer, provided it is dry, well ventilated and light. And again, a part of the attic might be utilized, but an objection here would be the running up and down stairs. Purchase, or make, if possible, a good carpenter's bench of a size to suit your room, and add a wood vise, also an iron vise and other conveniences.

If you buy a chest of tools, buy good ones. It is much better to buy a few good ones than many of inferior quality. Or, buy a hammer, saw, hatchet, files, a screw-driver and brace and bit, adding other tools as needed; a few at a time, and the cost will be hardly noticed. In time a collection of really valuable tools will be had which, with reasonable care, should last many years. Additional equipment for such a shop should consist of a small portable forge or furnace with bellows, a soldering outfit, grind-stone, oil-stones, paints and brushes and a pot of glue. A large and small shoe-last can be added, together with shoe-nails, rivets, awls, etc., which, being handy for the repair of shoes, will be found useful in repairing harness.

In the workbench should be a large drawer, fitted with smaller ones, where should be kept an assortment of screws, nails, bolts, and such, doing away with the loss of time often taken to search the house or barn for such. To prevent the rusting of tools when not in use they should be covered with vaseline or some good oil, and all cutting tools, to get the most service from them with the least effort, should always be kept sharp.

The argument that the farmer himself makes more money than he did formerly, that his time is more valuable, and that it is cheaper to have the work done by others than to do it himself is often put forth as though it were unanswerable.

The Workshop a Schoolroom

The tendency to simplify farm work by having everything done away from the farm that can be so handled, should be opposed by all intelligent persons on account of the educational benefit to the children of doing such work at home. The example is something in itself, but it is even more important to give the children an opportunity to lend a hand in the actual work and to acquire the skill and ability to perform the necessary process for themselves.

To diversify the work of the house and farm is the first step in the direction of increasing its educational benefit to the coming generation, and this diversity can and should be brought to a focus in the family workshop.

Can We Afford It?

By E. L. Vincent

EVERY year we come face to face with the question, "Shall we get this or that piece of farm machinery?" And it is quite a serious problem with a good many what to do about it. They may not have the money they feel that they can put into these machines, and they do not want to get in debt for them. So they try to work along "another year," hoping that by that time they will be in a better position to invest the needed amount for the tools they need.

Now, it has always seemed to me that if any particular machine would save me work and get the farm work along faster and do it perhaps better, I could not put money to better use than to buy the desired implement. Let's look at it in this way, for instance, We are hiring, say, three hands in haying, paying them \$2 a day. Now, if we had a horse-fork and hay-carrier that would take the hay from the wagon and put it away back in the barn, we would not need the third man. That would save us two dollars every day, besides the work in the house and the cost of the board. The money we would pay that third man would soon come up to the price of the hay-tools; and after they were paid for we would have them to use a good many years. We might say the same thing about a hay-loader or a potato-digger or any other tool that would do work quickly.

When we came on the farm, about a quarter of a century ago, an old man in our

neighborhood was still cutting all his grass by hand, paying from a dollar and a half to two dollars a day for men with the scythe. For a good while this same man had his hay raked by hand. His reason for doing this was that he thought the hay was better cut and raked by hand. There would be more dust, he thought, in the hay cut and raked by machinery, and that would affect the health of the cows!

It is all right, of course, to look out for the health of the cows; but, as a matter of fact, it was simply a notion that hand-cut hay was a bit better than that harvested by machinery. But the thing that drove this good old man to farm machinery was the advanced cost of farm labor. It cost him a good deal more to get his haying done the old way, and by watching other farmers who used machinery and asking some questions he learned that he was standing in his own light and really wasting money.

What that man did every man does who does not have the needed machinery to do work economically and in season. One of the first tools we got was a drop reaper. We realized that that simple machine could cut grain at a rate that we never had been able to do it with a cradle. And that reaper did save us more money and hard work than any tool of similar cost we ever had. It spoiled us as cradlers, into the bargain. It is the hardest kind of work now to cradle one swath around a field to make it ready for the binder.

But the binder beats the drop reaper all hollow. With that, two or three men can do in half a day what it would take a dozen men days to do the old way.

So when we come face to face with this question I feel that if we can be sure that there is to be a saving in time and labor we cannot afford to be without the machine which will help us to do it. If fifty dollars put into a power saw will enable us to cut more wood in a day than we could the old way in a week, and do it so much easier, then I think we had better get the saw.

The line of least resistance leads outside the circle of good society.

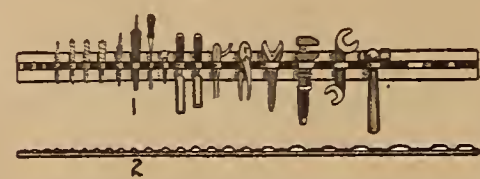
The lions would not eat Daniel, perhaps, because he was all backbone and grit.

Practical Tool-Rack

By B. R. Domach

THIS tool-rack will prove very handy in any farmer's workshop or granary and will require very little work.

Take a piece of board about four inches wide, one inch thick and as long as wanted, and to it nail a leather strap about one inch



wide and one and one-half times as long as the board. An old harness strap will do. Make the loops of varying sizes for different size tools. Figure 1 shows the finished rack and Figure 2, the manner of making the loops.

The true smile-philosopher doesn't smile all the time, but simply keeps himself in such good humor that he could smile all the time if he wanted to.

Bucking the Local "Trust"

By Maurice Floyd

THE gigantic industrial combinations whose operations extend over the entire nation are not the only "combinations in restraint of trade" which make a point of filching a profit at both ends of the line by beating down the price of the raw material which they buy and deliberately inflating the price at which they sell.

Very often the local buyers of farm products operate under a "gentleman's agreement," whereby competition in buying is entirely eliminated, and they are thus enabled to sometimes force the price of country produce down to a ridiculously low figure.

Not long ago Mrs. J. F. Jobe, a North Texas farm woman, found herself face to face with such a local combination. Mrs. Jobe had a flock of fine, fat hens ready for market, but the local buyers drew long faces and declared that the market was "overstocked"—and offered twenty cents apiece for the fowls!

Mrs. Jobe consulted her paper and found that hens were quoted at six dollars per dozen on the Dallas (Texas) market, the nearest city. Should she ship? This seemed the logical thing to do, but Mrs. Jobe was not unacquainted with the ins and outs of shipping poultry, whereby the commission house often stood "in" for a coop of fine chickens while the farmer was "out" the value of the poultry with absolutely no chance of collecting the money should the commission firm be a dishonest one.

She Advertised Her Poultry

But she finally decided to ship, not to a commission house however, but direct to

the consumer by means of the newly inaugurated parcel-post service.

To secure customers she inserted a small advertisement in the classified columns of a Dallas daily paper, and immediately orders began to come in in satisfying numbers.

When an order was received the hens were carefully dressed late the evening before shipment was to be made. Then they were hung in a cool place during the night and allowed to drip thoroughly. The next morning the carcasses were perfectly dry and were wrapped in clean white paper. This in turn was placed in a stout canvas bag, which was securely tied and a tag attached for the address and stamp.

After paying the postage she had left more than twice as much as the local buyers offered. Then, too, the consumer made a substantial saving in price and secured a marked improvement in quality also, for Mrs. Jobe's farm-fed, farm-slaughtered poultry proved to be far better than the usual run of market fowls. Indeed, many of Mrs. Jobe's customers declared that never before had they known what good fowls were.

Concerning her interesting experience, Mrs. Jobe says: "The most difficulty I have met is not knowing how much postage to place on a package. I am forced to meet the carrier and have every package weighed. We all know how much postage to place on a letter, but not on parcel-post packages. Then I think if the rate could be made a little lower and the weight limit increased somewhat the parcel post would be a grand thing for farm folks." Mrs. Jobe is right. Anything which enables farmers to secure twice as much for their products is a "grand thing."

Parcel post is helping Uncle Sam to deliver the goods.

Cabbages for Fall and Winter

WHEN you have good, strong soil, such as a rich old garden or a piece of rich sod that has been heavily manured with either stable manure or commercial fertilizer that is especially rich in potash, it is no particular trick to raise good cabbages, and have them come at any time you may wish, all at once, or scattering along, according to variety and time of planting. I raise plants of Maule's First Early (or Eureka) and Early Jersey Wakefield under glass, and set the plants in a rich garden-spot in April or early May, and have good, solid heads for use or sale in July and early August. Winingstadt is a good second early. For this I start the plants in the open, sowing seed in rows (usually with the garden drill) in the earliest patch of ground I can prepare and transplanting in hills as soon as large enough, thus securing a supply of very hard, conical heads after the first earlies are gone, say in September. Later settings of this same variety will give heads for fall and early winter. In fact, this Winingstadt is so good and reliable and of so good quality, that we might use it even as a late or winter cabbage. With this end in view, we might sow seed as late as early July, either in nursery row, for transplanting when large enough, or directly in hills where the plants are to remain to make heads; in the latter case just dropping a few seeds in a place and brushing a little soil over them with the foot. The plants in the hill are later thinned to one good plant. Starting our plants in this way at various times, we can manage to have good heads, heads in just the very prime condition, at any and all times of the season, and way into the winter.

The leading winter cabbage, however, especially for market, is Danish Ballhead. It requires a fairly long season, and in a locality with short summers must be planted fairly early, say along in May or early June. This cabbage is most suitable for winter use, and a close header. If the season is particularly favorable and long, the cabbages may come to full maturity before it is time to store them for winter. We are unable, of course, to make exact calculations, as so much depends on the uncertainties and vagaries of the season. It is better to have the cabbages get ripe a week or so too soon than to have a lot of unfinished and loose heads on hand when winter sets in. When we see that the cabbages get overripe, as shown by the tendency to burst or crack, we can push the heads over with the foot or loosen the roots by pulling the plant over to one side with a prong-hoe. Or we may pull the plant and stand it on its head in a somewhat protected spot. The foregoing is an outline of my plan of insuring a full supply of nice cabbage-heads right along from July until spring. T. G.

Look pleasant! Every evil under the sun begins with a grouch, or ends with one.

To Keep Bait on Traps

By R. E. Rogers

FOR quick and sure catching the little five-cent mouse-traps have them all beaten. The trouble is to keep the bait on the trap. I have just discovered that an elastic band will slip over the meat or cake used for bait. It is quickly on. It is not eaten off by the mice. It is cheap.

Avoiding Ruts

By C. E. Davis

I BELIEVE in originality, and don't believe in buying a new buggy or new sort of bridle or fine hat just because Jones bought one and guarantees it. Nor do I believe in planting what all the other farmers are going to plant. Too many farmers farm by the pattern around them, and often it is a pattern that is both faulty and obsolete. I want to experiment and find out for myself what certain soils and ways will do; and before I buy something that is all the go I want to see if I really need it, and if its value measures up to its reputation.

If some farmers should see their own junk-pile put up at public auction, they would put in a bid on every article in it.

Stuccoing the Chimney

By Vernon Hartsock

EVERY farmer knows it is almost impossible to get fire-insurance upon a building if the chimneys are unsafe, and if they do, it is with the understanding that they make immediate repairs. If you figure it out from a bricklayer's point of view, you will find the repairing of chimneys to be an expensive undertaking where they have to be torn down to the roof and rebuilt.

The buying of new brick would be a small item in comparison to the amount in wages paid to the mason and his helper—seventy and thirty cents per hour respectively, for union men.

Take a chimney in the condition of the one illustrated by Fig. 1. The question naturally arises, "Would it pay to try and save this sort of chimney by stuccoing?" The writer's answer is "Yes!" Any experienced hand can do credible work if he will proceed in the following manner:

An average-sized chimney will require one sack of prepared plaster (wood fiber and containing no sand), one-half sack of cement and as much screened sand as there is plaster, dry-mix thoroughly, and then wet only enough at a time to fill a bucket, as it would begin to set before you could use it up if you should wet too much at a time. Arrange your ladder conveniently, nail cleats upon the roof to make sure footing, and then take a few short boards and contrive a table beside the chimney upon which to dump the mortar. This, and the possession of a plasterer's trowel and hawk and a short stubby broom, will complete the equipment.

To Put on the Stucco Effect

To make a hawk, or mortar-tray, take a piece of board one foot square, bore a hole in the center, and insert a piece of round wood for a handle. See that all soot is removed from the sides and top of the chimney, as the mortar will not stick if applied over the top of soot. We are now ready to commence plastering.

Begin at the bottom and work upward until the one side is completed, and so on. It may go a little awkward at first, but persevere until you get the results shown in Fig. 2. If it should look rough it doesn't matter if the general contour is symmetrical. Now you would scarcely believe me if I tell you your work is almost done, but such is the case, for the rest of it is simply a pleasure.

The writer is partial to a white finish, obtained by using the pure plaster, but it can be made to give a stone effect by adding one-third cement prepared as follows:

Place in your bucket one-half gallon of plaster, add one quart of cement, dry-mix, add enough water to bring it to a thin mush. Take this and the stubby broom, and proceed to cover up your deficiencies as a plasterer by this handy method of stuccoing. Dip the broom in the stucco and then thrust it against the chimney end-wise, commencing at the top and working downward until you have the chimney encased in a new and beautiful dress as shown in Fig. 3.

If you should desire a panel effect, as shown in Fig. 4, take a putty-knife, and

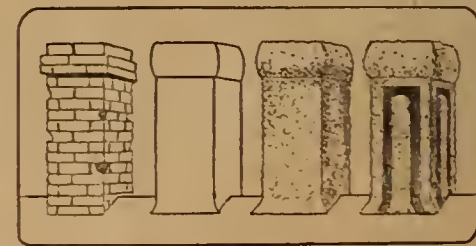


Fig. 1 Fig. 2 Fig. 3 Fig. 4

scrape away the stucco shown by the dark lines, before it has set, down to the first coat of plaster. Then fill in the design with a paint made of equal parts of cement and red oxide mixed with water. Apply with a small paint-brush.

As this latter operation adds nothing to the durability of the job but merely to appearances, it is simply mentioned as an appeal to the reader's artistic sense.

The total cost of repairing one chimney by this method of stuccoing, not counting labor, will, for a medium-sized chimney, not exceed seventy-five cents; the cost of laying it new, with brick, would probably be ten dollars and seventy-five cents or more.

Garden and Orchard

Destructive Leaf-Miners

By C. M. Weed

NOT all insects that feed upon plant-leaves attack them from the outside to devour their substance. Almost anywhere in the field and garden one can find many examples of the interesting leaf-miners. These feed upon the leaves from the inside and utilize the upper and lower skins of the leaf as a protection from outside enemies.

One of the easiest leaf-miners to find lives in locust-leaflets. It eats out the green cells in such a way as to make a whitish patch that is easily seen on the upper surface. A large percentage of the locust-leaves are often injured by this insect.

How to Detect Their Presence

Serious damage to apple-trees has been done by leaf-miners during recent years. The places where the miners work are



The whitish patches on these locust-leaflets show where the leaf-miners have worked

called mines. Two kinds of these mines are commonly found on apple-leaves. One is a flat mine, gradually widening from its beginning to its outer end. It is shaped like a trumpet and is called a trumpet mine. It is most easily seen on the upper side. The other is a tent mine and shows best on the under side.

Bury the Fallen Leaves

The apple-leaf trumpet miner hatches from an egg laid in or on the upper surface of the leaf by a tiny moth. It is a very small caterpillar and feeds upon the green leaf cells just beneath the surface. As it grows it enlarges the mine, and the leaf-skin above turns to a brownish color. The inside top and bottom of the mine are covered with silken threads by the little larva.

The life history of the apple-leaf tent miner is much the same, except that the miners work on the under side of the leaf and bend the upper surface to make a little tent.

The eggs of the leaf-miners are commonly deposited within the leaf. The little caterpillars remain inside the leaf until they are full grown. Consequently it is not practicable to reach the insects at any stage by spraying, either with poisons, like arsenate of lead, or contact insecticides, like kerosene emulsion.

A large proportion of these insects live over winter in fallen leaves. So if the leaves are plowed under in fall or early spring or are gathered and buried deeply in a compost heap or beneath the soil, most of the miners will perish. The same thing would happen if the leaves were burned, but dead leaves make too good fertilizer to burn.

Mulching Currant-Bushes

By C. M. Weed

TO KEEP a small lot of currant-bushes free from grass and weeds in a garden where cultivation with a horse is not practicable is a difficult proposition. I have tried it several times and failed. The grass starts around the base of each bush and soon spreads out to make a solid turf. The currant-roots penetrate the sod so that if you pull the grass away you injure these roots. Yet if the turf is left the currant-bushes become almost worthless.

About six years ago I planted a row of about fifty currant-bushes on my New Hampshire farm, which was overrun with witch-grass. I read of a farmer in Maine who grew currants commercially by the use of a heavy mulch. So I tried the plan, spreading on in summer a heavy covering of freshly cut grass, brakes and weeds from a near-by orchard that I was trying to re-deem.

When put on green the grass and weeds soon rotted down to form a moist, impervious mulch that choked out plant life beneath and kept the soil moist and in good condition.

Each summer since, I have renewed the mulch, putting it on thickest where it was most needed. The bushes have grown finely and have borne abundant crops of large currants. They have also kept their leaves later in the season than usual and so have been able to store up materials for the next season's crop.

Mulching Better Than Tillage

The middle of the row was planted in shallow soil where the ledge came so near the surface that the soil often dried out

when not protected with a mulch. By the ordinary method of tillage, these bushes would have yielded little during dry seasons, yet with this mulch method they have done very well.

Currants are naturally adapted to a rather cool, moist climate. Mulching helps to furnish the right conditions for root growth. The soil is kept cool and moist.

In home gardens lawn-clippings, waste straw, weeds or almost any vegetation may be used for the purpose. Fortunately currant-bushes are seldom harmed by field-mice in winter, so the mulching does not lead to damage by these pests.

Pennies in Pods

By H. A. S.

LAST year I utilized an acre of sandy ground which otherwise would have been idle. I hired the men to plant it to navy beans. They did that with the corn-planter. It took them only a short time. They also cultivated the acre at the proper time and helped me thrash the beans in the fall. I paid for this help at the rate of four dollars per day, amounting altogether to six dollars. For the seed I paid two dollars.

I had, when all gathered in, twenty bushels of beans, for which I received three dollars per bushel at wholesale, netting me \$52 for my headwork.

The Sane Fourth

(As the Boy Explains It to His Friend)

By Berton Braley

SAY, Bill, I been visitin' down to the city, But 'tain't like it was in the seasons gone by;

The flags and the banners was certainly pretty,

But it was too quiet for Fourth of July. They said 'twas a sensible Fourth they was plannin',

They didn't want anyone comin' to harm, So there wasn't no bombs, and there wasn't no cannon,

And I might just as well of been up on the farm.

Of course there was bands and a great big procession,

With fellers on horses, and people like that,

And the chief of police with a haughty expression,

And the congressman wearin' a two-story hat;

But nobody got himself blowed up with powder,

There wasn't a runaway horse in the town,

And the crackers went "fit!" like a cat, and no louder.

Aw, gee, but the Fourth of July has run down.



There was games in the park, and a whole lot of speeches,

And they ran up the flag, and we cheered it a pile,

And we learned all the lessons that history teaches,

But that kind of Fourth ain't exactly my style.

I want to hear dynamite crackers go crashin',

And burn all my fingers, and holler for joy.

This sensible Fourth that is comin' in fashion

Is sort of a frost to a really LIVE boy.

Of course it was bad when a cannon exploded

And blinded somebody or knocked off his haud,

Or someone got shot when a gun "wasn't loaded,"

But still—the old Fourth of July was just GRAND!

I guess all these older folks know what they're doin'.

They say too much killin' and woudui' was done;

But for kids like us two—well, the Fourth is a ruin.

And now that it's safer it ain't any fun!

GARDENING

BY T. GREINER

Cucurbits in Summer

CUCUMBER, melon and squash vines, after they have made considerable growth, and especially when they nearly or fully cover the ground, are in very little danger from insect attacks, at least under ordinary conditions. The yellow-striped cucumber-beetle sometimes comes on in larger numbers late in the season; or there may be other leaf-eaters in some localities. In arsenate of lead, as often stated in these columns, we have a sure remedy for such enemies. More troublesome here than any insect is the melon-blight, as is also the wilt disease. For some of these diseases, if of fungous nature, we may have some chance to find at least a partial (usually not a perfect) remedy or preventive in Bordeaux mixture. It is a good and advisable thing, in any case, to spray the vines regularly, and as often as may seem necessary to protect them, with Bordeaux mixture made in about the proportion of one pound of copper sulphate and a little over a pound of best lime to twenty gallons of water, adding three-fourths pound of arsenate of lead paste or a half-pound of arsenate of lead powder, and applying this liquid in a fine spray, covering as much of the upper and lower leaf surfaces as can be conveniently done. Do not disturb the vines any more than is necessary. Stray weeds may be pulled up. Sometimes we have a late, or fall, crop of the large ill-smelling squash-bug, and I have seen the leaves of squash and pumpkin vines almost covered with the immature insects in the fall. In some cases I have, after taking off the fruits, covered the infested plants with a little straw, sprayed kerosene on this and set fire to it.

For Club-Root in Cabbages

When cabbages, cauliflower, turnips or similar crops are grown repeatedly or in succession on the same piece of ground, the roots of these vegetables are likely to become attacked by what is known as club-root. In our older gardens we do not seem to have very much trouble from that source. Nor is there much danger in soils that contain a good proportion of lime. Lime applications are therefore often recommended as a means to head off the disease. The vegetables of this family should be kept out of any piece of ground where the disease has once made its appearance, at least for several years. If you set plants entirely free from infection, and put them in a spot that was free from club-root last year, you will not be likely to have your plants injured or destroyed by this disease.

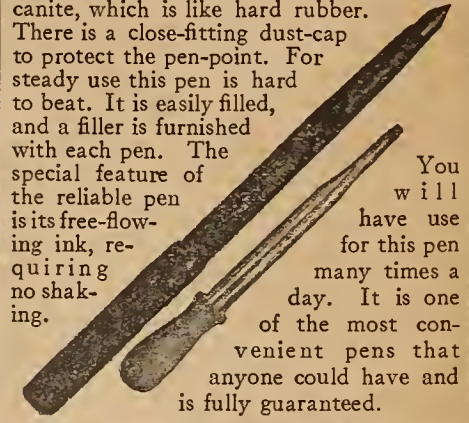
Cauliflowers for Pickling

The good housewife usually calls for cauliflower along in September when she is doing up and canning and pickling things. This vegetable does not require quite as much time as the late cabbage varieties to come to full maturity. Yet the season is also a big factor in this. We can grow any of our standard sorts, like Early Erfurt, Prize Earliest, Snowball, etc., by sowing the seed in hills late in June, or setting plants early in July. But this vegetable wants quick, rich soil and a never-failing supply of moisture. No use setting the cauliflower-plant in thin, poor or compact soil, or exposing it to heat and drought. It won't stand it. One of the best ways of managing our cauliflowers is to cover the ground all around them with a heavy coat of coarse manure or other litter. I often make use of the fresh stable manure made during spring and early summer for just this purpose. Such a mulch keeps the soil cool and moist, and adds materially to the plant-food supply. We never fail to have nice, big heads of cauliflower when we treat them in this fashion. Of course, the open heads themselves will need some protection from the direct summer sun-rays. For this purpose the outer leaves may be folded over the head and fastened in that position by tying or pinning, or you may simply place one of the cheap wooden picnic plates on top of the head. It is well worth a little trouble and pains to secure cauliflowers in snowy whiteness and perfect solidity.

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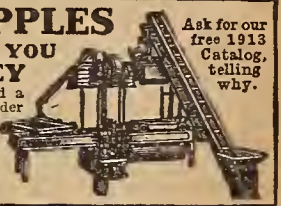
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Poultry-Raising

How to Raise Indian Runners

Good Methods for Those Having Difficulty
By J. S. Westcott



A FEW weeks ago the duck-raiser of our home said: "You ought to write to the FARM AND FIRESIDE, telling how to raise Indian Runner ducks, as there is an article telling of failure because of large loss of the ducklings." She has taught the writer all he knows on this subject, and, as for several years she has not lost a duckling except by accident, her experience should count for something.

In the first place, we hatch the young ducklings under hens, which perhaps is better for beginners, as duck eggs require different treatment in an incubator from hen eggs.

But the hen is not a very good duck mother; she is awkward in the management of her odd brood, often stepping on and injuring them, for which cause we prefer a brooder as a foster-mother for the young ducklings. It is not necessary that the heat of the brooder should be as great as for chickens, but they need a little warmth, at least for the first week. Probably later in the season a fireless brooder would work well, but, more than chickens, little ducks need pure air and must not be crowded.

For the first week they should be fed bread-crumbs mixed with milk or water and squeezed dry, or bran and meal mixed in cold water, making a crumbly and not too wet mash, adding to this, after the third day, a small portion of meat-meal. At the end of the week the ration should consist of bran and meal with meat-meal and a little sand, and sand should be placed where the ducks can eat it when they wish. This ration is fed to the ducklings until full grown, always using some sand mixed in with the meal and bran, and varying the amount of the meat-meal to suit the needs of the ducklings. When they are grown to maturity the meals can be varied with an occasional feed of whole grain, wheat or corn. Care must be taken that the meat-meal is fresh. Spoiled meat should never be fed to ducks at any age. Even when full grown they must have sand in their runs, and if at any time they seem weak in their legs the meat ration should be increased.

Not Too Much Water for Ducks

With this food the ducklings should always have water in sufficient quantity to cover their bills. A wooden trough with slats across to prevent their entering the water will keep them from getting too wet, or an ordinary water-fountain such as is sold to be used in brooders will do very well. Get these few points: Feed and water at the same time, do not make your mash too wet, and after the first week put sand in every mash and vary the meat-meal to suit the needs of the ducklings and ducks.

Now, a few don'ts. Don't let them have water to swim in until fully feathered. Don't let them remain out in the rain whether it be warm or cold. Many ducklings have been killed by exposure in a warm rainstorm. Don't let them run in wet grass. Keep your brooders and coops as clean as possible and as dry as possible. Don't excite them by quick movements. When driving them into their quarters for the night do it as quietly as possible. I prefer to let them go into their houses of their own free will and to have a small entrance that can be quietly closed against vermin after they have retired. Don't feed them in their pen, and it will be easier to keep the pens dry. Even if it rains let them out long enough to eat, and then shut them up. Don't feed them more than they will eat up clean. Allow no sour food to be in their reach.

Feed four or five times each day for the first two or three weeks, reducing the number of feedings as they grow older and feeding grown ducks morning and evening only.

There are other matters in the management of the Indian Runner duck that the author of "The Other Side of Duck-Raising" has not alluded to. The first thing, however, is to raise the ducks, and this can be done without loss if one forgets all his ideas of ducks being natatorial birds.

A Piano-Box Poultry-House

By A. E. Vandervort

A GREAT many people who raise poultry, either on a large or a small scale, will find the plans for a cheap poultry-house given here just the thing for which they have been looking. This house will appeal especially to those who only keep a few fowls, but alike to the large poultry-raiser, for colony houses to be moved about the

farm in the green fields during the summer. There are hundreds of colony houses in use on the largest poultry-farms in the country.

The ease with which the house can be built commends it to those who are not skilled as carpenters and who do not have the time to build an elaborate house. The house is modeled on the most approved lines of poultry-house construction, being a combination of the open and canvas front types, and having the shelf dropping-board under the roost, which is along the back wall, to catch all the droppings while the fowls are on the roost during the night. If a small breeding-pen is kept in the house the space beneath the dropping-board is utilized for nests, and the floor, which is covered with several inches of straw, for scratching.

Piano-boxes for different makes of pianos differ slightly in size. The ordinary box is from five feet to six feet in height by five, or a little over, long, the back generally being square. They are two and a half to two and three-quarters feet wide at the bottom.

After getting two piano-boxes of the same dimensions I remove the backs and tops as shown in Fig. 1. The backs are then spread out as shown in Fig. 2 and sawed in the portions indicated by the dark lines. The one back is sawed into halves and one of these halves halved again. These quarters form the topmost part of the roof with an additional six or eight inch board.

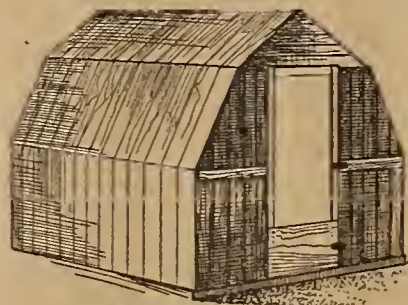
The second half, numbered 3, forms the floor between the two boxes. The half numbered 4 fits in at the back between the two boxes, while number 5 is used for the dropping-board. All the additional lumber required for the house is the two-by-fours under the floor and for the roof and some one-by-fours for the door. No glass windows are required for the house, as the light is admitted through the open front door. The door is merely covered with wire netting. During a



Fig. 2

very cold winter night a canvas curtain is hung over the wire netting and fastened onto buttons on the frame of the door. As the whole house is covered with a good roofing-paper it is surprising how comfortable and warm the fowls keep in this style of house, even with the canvas off the front of the door almost every day in the year. Only about three months of the year need the canvas be used in the moderate States even at night, as the more fresh air the better after the fowls become accustomed to this mode of housing. The general tone and health of the flock is greatly benefited by the fresh-air type of house.

These houses make excellent ones in which to keep an outdoor brooder early in the season, and they may be used at every stage of the work of poultry-raising. Run-



Not costly, but very serviceable

ners may be placed under them, and with a horse they can be moved with ease. They are easily constructed, very cheaply built, yet answer the purpose of a more costly house.

Success with Buff Leghorns

By W. G. Murtorff

I HAVE been keeping Single-Comb Buff Leghorns for several years and people often ask: "Does it pay?" Yes, it pays. How much? I could not say, for I never kept an account, but I (as lots of others) thought it paid. So, beginning January 1, 1912, I started to keep an account and found, to my own surprise, that the eggs and chickens used by the family during the year 1912 cost me sixty-five cents in actual cash. This does not include the labor. Neither does it take into account the manure produced, this being used on my garden. My hen-house is on the back of my lot, about fifty feet from the house, and it did not take more than five minutes a day, except on Saturdays, when I cleaned the house and did any other work necessary. This was recreation, for after working all week in an office this work was like play.

The chickens are kept in a house ten by twelve feet, seven feet high in front and five feet high at back, with a shed roof covered with tarred-paper roofing. In the front there is a window two and one-half by five and one-half feet, also an opening two by four feet which, on very stormy days,

was closed with a muslin curtain. The temperature during January and February went as low as seventeen degrees below zero, but I never had a frozen comb. The house was air-tight except for the opening. On January 1st my inventory was as follows:

House	\$20.00
Feed	3.10
12 hens, one year old	15.00
25 hens, six months old	25.00
2 cockerels	5.00
Total	\$68.10

During the year I purchased all my feed, paying two cents a pound for the mash and an average of \$1.15 a bushel for wheat and ninety cents a bushel for the corn. The straw used cost \$20 per ton. My egg record for the year is as follows:

January	316
February	483
March	561
April	555
May	506
June	345
July	325
August	238
September	55
October	65
November	116
December	184

Total 3,749
Or 312 5/12 doz.

Average per month, 312.4 eggs.
Average per hen, 122.6 eggs.

Feed purchased during the year....\$44.38
Eggs sold (for cash)

Cost of feed in actual cash..... \$0.65,

My account for the year is as follows:

Inventory, January 1, 1912	\$68.10
Feed purchased	44.38
Total	\$112.48
Eggs sold	\$43.73
Inventory, January 1, 1913	47.90
By balance	20.85
Total	\$112.48

The difference in the inventory is accounted for as follows: Ten per cent. depreciation in house and in the number of chickens, since we used, during the year, eleven hens and the two cockerels.

Lime Treatment for Lice

By J. A. Newton

THOUSANDS of newly hatched chicks that die without apparent cause owe their early demise to lice. Both the regular hen-house and the red mite are an abiding menace to growth, health and egg production.

A successful turkey-raiser of my acquaintance declares that a single louse will kill a young turkey. He avoids enlisting the services of hens to hatch out young turkeys because they are so likely to be the bearers of lice. If left to herself and given plenty of range the turkey hen rids herself of these pests and establishes a nest at some point quite remote from the home roosting-place and the proximity of lice.

Many people who anticipate great results from fowls allow them to be literally devoured by lice. Frequently a bird falls off the perch dead during the night and sitters die on the nest the prey of lice.

Even if the fowls do live for a time in spite of the lice they will later succumb to cholera, dysentery and other diseases to which a lowered vitality has rendered them susceptible.

I tried many experiments in an endeavor to abate the lice nuisance, such as using whitewash and with carbolic acid, melted alum, kerosene and gasoline applied to the perches, but all proved unsatisfactory, for as soon as such applications dried or evaporated the pests came out of their hiding-places and traveled the walls intrepid as ever to renew their attacks on their sleeping victims.

The Successful System

My next method, which proved successful, was to fill an open bushel basket or box with quicklime and keep it in a dry place until it air-slaked. As soon as it had fallen into the consistency of flour it was ready for use. Now I applied a liberal quantity where the ends of roosts were attached to building and scattered a good dusting of it on the ground under the roosts. I cleaned out the old materials in nest-boxes, put in new straw and sifted an ounce or two of the lime into the straw.

Lice cannot endure crawling in this sharp lime-dust, and being prevented from getting on the roosts they starve out. When a hen goes on the nest she rustles around, and the lime-dust getting in her feathers soon drives all lice off her body.

Since using air-slaked lime twice a year, spring and fall, I have seen no more unites on the walls or on the eggs of sitters.

The Market Outlook

Hogs High in June

By L. K. Brown

THE nine-dollar hog returned the middle of June at the time of the much-predicted heavy run. This is the highest June price since 1910, the year that hogs were so scarce and prices so high. The long-continued prediction of a heavy June run prompted many to sell in May or hold over till July. In spite of the heavy marketing in May to avoid the June liquidation, the actual receipts for that month at the five largest western markets show a decrease of 150,000 head from last year, but a small increase in average weight. The hog shortage, coupled with the general shortage of other live stock, can be expected to hold the market up for some time to come.

Hogs have continued to run heavy and consequently the heaviest weights are discriminated against, but this is to be expected at this season. A large percentage of lard has been obtained from the carcasses, and the supply of that commodity has increased somewhat.

June is usually a month of accumulation, but it has hardly been such this year. The cash demand and the small stocks have made the packers eager buyers, even on the days of heavy receipts, and but little of the product has been cellared for future supply. Prices have been advancing, even though the competition of eastern order-buyers has been small. When the eastern stock has all been cashed in and the buyers are forced to go to the western markets to obtain their supply, the added demand will aid price advances.

Cattle Prices to Strengthen

By W. S. A. Smith

THERE is every prospect that fat-cattle prices will strengthen in late summer, and it certainly will be necessary for them to do so if cattle in feed-lots at present are going to pay out. Eight-cent feeders with fifty-cent corn, even with cheap grass, means high-priced beef. With the exception of Oklahoma and western Kansas, all the Western States have had abundant rains and pastures are good. So good that everyone is determined to get stock cattle, price at present no object. Some cattle from Arizona have been shipped North and "lumped off." I personally know of some cattle sold this way bringing as high as twelve cents per pound. A man does not need to be much of a prophet to say that it will be a hummer of a market later on that will enable these cattle to pay out. In former years a large percentage of the feeder cattle on the ranges of South Dakota and western Nebraska have been sold direct to feeders, but at present ranchmen have very high ideas of feeder values, and there is little prospect of cattle being contracted early this season. Iowa has had abundant rains, and pastures and meadows never were better. Every commission house has orders to buy cattle. At this writing we still have the same condition in the cattle-market which has prevailed for some time. Fat cattle selling for \$7.75 would be worth just as much per pound as stockers. I have always felt that either fat cattle would go higher or stockers lower, but at present there is little prospect of any great decline in stocker prices. It now looks as if fat cattle would work higher. It will be interesting to note how much the market will drop when the grass cattle begin to come in, and it will be worth every farmer's time to figure what he would have made or lost had he purchased feeders or stockers in April, or waited until August and turned them into an unused pasture, figuring each way to October 1st as the end of the grass season. I am inclined to think the cattle bought in August will be the cheaper cattle by October 1st.

Sheep-Market More Lively

By J. Pickering Ross

BY THE middle of June more life was apparent in the sheep-market, where for some weeks dullness had reigned. Little unshorn stuff is now coming in. Handy-weight top lambs have been ranging from \$7.50 to \$7.85; heavy and poorer sorts, \$6 to \$6.50; shorn wethers, all grades, \$4.50 to \$5.75; shorn ewes \$4.40 to \$5.60; spring lambs, fairly plentiful at from \$8.50 to \$8.75. Feeders of all kinds are greatly in demand, but hard to find. The advantages of plentiful feed seem in danger of being neutralized by the want of mouths to fill with it. The wool-market is quiet here, but very strong at all foreign wool centers. A few months ago prices of sheep and lambs were as high, and at times even higher, than those of both cattle and hogs, but of late this has become reversed, though sheep are still commanding good prices. This is well, for as soon as sheep products equal or exceed the others in value a break is sure to occur.

There are conditions existing just now which should tend to encourage increased efforts in sheep-breeding. Feed is plentiful. In many western States last season's hay is still plentiful and the grass very promising, so that it is likely that the sheepmen will keep their stock for home feeding. It will take years to overcome the shortage of stock cattle. The demand for feeding sheep and yearlings is away ahead of the supply, so it seems evident that a flock of well-bred mutton-and-wool ewes must be a valuable asset on any farm just now, especially since lambs can be realized on more quickly than any other species of live stock.

Now is the time when the careful shepherd begins to consider how he can best promote the welfare of the weaned lambs, and of the ewes destined to be the mothers of his crop of youngsters. If dipping has not already been attended to no time should be lost in thoroughly and carefully carrying it out, or an object lesson in industry will be offered the careless one by the lice and ticks. Almost any of the commercial coal-tar dips are good, but if in doubt the inexperienced will do well to consult his state experiment station as to what to use and how to use it. It is a matter, anyhow, that should be under state supervision.

Up to weaning it is to be hoped that the grain ration of the ewes has been kept up; after that they are best allowed to cool and dry off on the grass and stubbles until a few weeks before mating, when, to get them into the right condition of full and firm flesh, a moderate grain ration with a little linseed-meal will be in order.

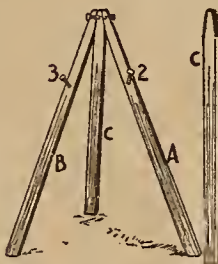
Now, too, is the time to weed out the ewes whose performance as matrons has not been satisfactory; to fatten and get rid of them. What is going to be done about the paternity of the forthcoming lot of lambs should also be settled by now, if the flock is to be brought as near to a state of perfection as its nature admits of.

Canvas caps for small grain save it from the damage done by the bleaching and drying out of sun and wind, hold the sheaves in place better than the old-fashioned cap-sheaf method and protect the grain from birds and insects.

Thousands of farmers would forget their prejudice against millet if they would handle it correctly for roughage, cutting it just as the grain is filling, instead of letting it get thoroughly ripened. The drain on the vitality of the soil would be materially lessened, while the roughage secured would be small of stem, tender, juicy and a most palatable and nutritious winter feed.

Handy Hog-Hanger

By Edw. C. Housel



TAKE three sticks of three-by-three timber ten feet long (or poles will do). Slope gently at upper end of timber C, as illustrated; also insides of A and B at upper end. Then with one-half-inch bit bore a hole through all three timbers, and in it place one-half-inch bolt seven inches long, as shown. Screw nut on, taking care not to screw it too tight. At two feet from top bore slanting holes in timbers A and B. In each place a bolt seven inches long.

When ready to hang hog, lay hanger on ground with legs A and B in one direction and C in opposite direction, with pins 2 and 3 on upper side. Hang gambrel over pins 2 and 3, with hog's body lying on back between legs A and B. Then take hold of leg C, and raise in position illustrated. One can easily raise a 150 or 200 pound hog with this hog-hanger.

The profits in pigs are really made during the growth of the animal, and not in fattening them afterward.

Dictographed from the Cracker-Barrel Club

By Robert W. Neal

The scrub cows all belong to the anti-testing association.

Success is an art. I've always understood that an art can be learned.

Hope holds the ax; hustle turns the grindstone.

The Lord gave farmers a choice of head or hands to work with, but He sort of meant to have the two mixed.

Old man Sipp hired a superintendent to do his planning for him. Now the superintendent owns the farms.

It's almighty hard to mix oil and vinegar or fire and water, but it's harder to mix dogs and sheep.

Raising draft-horses for market has its advantages. Most of the young horses will pay for their raising in work before they are ripe for sale.

Every time a farmer wears out a team, wagon and outfit on a poor road, he has put about four hundred dollars into the road without helping a soul. Pity he can't collect from the road overseer and the town.



Coral Builders and the Bell System

In the depths of tropical seas the coral polyps are at work. They are nourished by the ocean, and they grow and multiply because they cannot help it.

Finally a coral island emerges from the ocean. It collects sand and seeds, until it becomes a fit home for birds, beasts and men.

In the same way the telephone system has grown, gradually at first, but steadily and irresistibly. It could not stop growing. To stop would mean disaster.

The Bell System, starting with a few scattered ex-

changes, was carried forward by an increasing public demand.

Each new connection disclosed a need for other new connections, and millions of dollars had to be poured into the business to provide the 7,500,000 telephones now connected.

And the end is not yet, for the growth of the Bell System is still irresistible, because the needs of the people will not be satisfied except by universal communication. The system is large because the country is large.

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fertilizer on it—the kind that contains enough Potash to balance the phosphate. The mixtures we have told you to use on wheat are suitable for rye, but the

Rye serves the double purpose of a cover crop or a grain crop. In either case it pays to use the right kind of fertilizer.

POTASH

may be even higher, since rye uses more Potash than wheat.

Use from 200 to 400 pounds per acre of a fertilizer containing 6 to 8 per cent. of potash.

If your dealer does not carry potash salts, write us for prices stating amount wanted, and ask for free book on "Fall Fertilizers." It will show you how to save money and increase profits in your fertilizer purchases. **Potash Pays.**

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Because your waste is greatest and quality of product poorest in mid-summer, when the milk supply is greatest.

Because time is of greatest value on the farm at this season and the time and labor saving of the good separator counts for most.

Because the skim-milk is poorest without a separator in hot weather and often more harmful than helpful to calves and young stock.

Because the work of an improved De Laval Cream Separator is as perfect and its product as superior with one kind of weather as with another.

2nd If you have a very old De Laval or an inferior separator of any kind—

Because the losses of the poor separator from incomplete skimming and the tainted product of the difficult to clean and unsanitary separator mean most when the bulk of milk is greatest.

Because of the great economy of time at this season in having a separator of ample capacity to do the work so much more quickly.

Because an improved De Laval separator is so much simpler and more easily handled and cared for than any other, and you cannot afford to waste time these busy days "fussing" with a machine that ought to have been thrown on the junk-pile long ago.

Because the De Laval separator of today is just as superior to other separators as the best of other separators to gravity setting, and every feature of De Laval superiority counts for most during the hot mid-summer months.

These are all facts capable of prompt and easy demonstration, whether you have a poor separator or none at all. The new De Laval catalogue, to be had for the asking, helps to make them plain. Every De Laval local agent stands eager to do so with a machine itself, with no obligation on your part to buy unless he does—and that to your own satisfaction.

WHY DELAY? Why put off so important a step as the use of the best cream separator, which you need more **RIGHT NOW** than at any other time?

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Live Stock and Dairy

Do You Grow Rape?

By William Dietrich

THE number of pigs that can be supported per acre of rape with a half-grain ration will depend, of course, largely upon the amount of rape that the land will produce. The writer has pastured from ten to twenty hogs per acre on alfalfa and has also used rape to a considerable extent. Rape will furnish an abundance of succulent feed, and, while no definite figures can be given, it is believed that an acre of good rape, when used as stated above, ought to furnish as much forage as does alfalfa. The young pigs will not eat very much at first, but by the time they are three to five months old they will use a considerable quantity of green forage.

A Fly-Time Hint

By C. G. Reynolds

FIX your cow-shed so it will be dark inside when the door is closed. You can then milk any time during the day instead of waiting till dark. If you have a cow-shed with an open end just hang some old binder-canvases over it so it will be dark inside. The cows will soon learn to go between the canvases into the shed.

EDITOR'S NOTE—Burlap is better, allows ventilation and can be used to cover windows in absence of wire screening.

Homespun Houses for Hogs

By G. H. Day

MOST of the agricultural South is ideal for hog-farming. The climate is mild, the land is cheap and fertile, plenty of inexpensive feed is available and good markets are accessible. Many of the Southland farmers pasture their swine the year around, the animals rustling the greater part of their living on rape, cow-pea, soy-bean, peanut, sweet-potato, corn and Johnson-grass fields. Market hogs are toned up on forage crops, peanuts, sweet potatoes and corn, which are furnished to the porkers on the "hogging off" plan. The animals harvest these crops directly on the fields which produced them.

The southern farmer can produce top-quality pork at a much lower cost than can the farmer in the Middle West. His climate is so mild that he has to expend but little money for warm hog-houses. For the most part the swine run out on the range twelve months in the year, in some cases having no other shelter than a grove of oak-trees. Southern hogs are produced under natural conditions that make for health and vigor among the breeding animals and the production of strong, robust, true-to-type progeny. It is the exception rather than the rule for a pure-bred hog-farm located south of Mason and Dixon's line to boast a costly farrowing house. The sows farrow their two crops of pigs a year out on the range under natural conditions. The females and their progeny are sheltered in open-end, A-shaped houses that satisfy all requirements of sanitation and adequate ventilation. These dwellings are bedded with clean, fresh straw to afford comfort and protection

wooden frame of saplings with the ridge-pole about five feet above the ground and fastened between two trees. Then the frame is covered with a six-inch layer of Johnson grass, and a few saplings or boughs are placed over the hay to keep the straw from blowing away. All of Mr. Davis's hog-houses are located in a grove of oak-trees which provides fine shelter and shade for the swine during the periods of hot weather.

The "homespun hog-house" is inexpensive; anyone can build one of these simple structures. They cost less than any other variety of hog-house adapted to southern conditions, and in the main are more effi-



Two Poland Chinas and their dwelling

cient. It is easy to keep them clean and sanitary. Of course there is this objection to the shelter: they are not portable. However, by the supplementary use of a few portable, A-shaped houses the average hog-raiser who also maintains a number of straw houses gets along very well. The straw house can be of any size that the farmer wishes to build.

A number of gilts or young pigs may be maintained in one house until they are separated for breeding purposes. Similarly young boars or old sows may be housed in separate shelters. Mature boars are likely to fight and injure each other, so the best plan is to house them separately.

Colics of the Horse

By Dr. A. S. Alexander

MOST attacks of colic are unnecessary. They usually come from carelessness or ignorance on the part of the feeder. One man should do all of the horse-feeding. Change of feeders may mean change of feed or irregularity in feeding. These things cause colic. Where feeding is not made the special work of one man, a horse may, by mistake, be fed twice at one meal-hour. Sudden changes of feed, irregular feeding, damaged, heated, fermenting, new or moldy feed, feeding green grass or other wet green feed, giving the drinking-water after feeding and feeding and watering a horse when hot, tired and sweaty are common causes of one kind of colic or another. Always give the drinking-water before feeding. Always gradually accustom a horse to any change of feed, and especially to new oats and new hay. Have the teeth attended to by a veterinarian at least once a year. Spread the grain out thin in a large, shallow feed-box to prevent the horse from eating too fast. Allow plenty of time for the perfect mastication of feed. In hot weather allow a little drinking-water at noon, then feed a pound or so of hay while the horse is cooling off, then give more drinking-water and then the full feed of oats. Avoid the Saturday-night bran-mash. It is a fertile cause of colic. Better mix bran daily with the oat feed and dampen it at meal-time. Do not feed ground feed to a horse that has good teeth. Perfect mastication and insalivation of feed are necessary if the horse is to remain healthy. Feeding from the floor level induces an increased flow of saliva. This benefits a horse that suffers from indigestion. Allow free access to rock salt, and keep the horse free from worms. If a horse has an attack of colic, and fearlessly rolls, kicks, paws and then looks around at his sides, then finds relief for a few minutes, this is "spasmodic," or "cramp," colic (bellyache) and tends to subside, if simply treated. If there is no let-up to the pain and the horse is afraid to lie down and walks around in the box stall, he has enteritis (inflammation of the bowels), and it probably will prove fatal. In "bloat," or "flatulent," colic the body is distended with gas high up in the right flank, and the pain is less severe than in cramp colic, or enteritis. Lose no time in calling in a qualified veterinarian if enteritis is present. Home treatment will be apt to hasten death. The veterinarian also is urgently needed if the horse is bloated. Instant "tapping" for removal of gas may save life, when medicinal treatment would fail. Do not give "liniment" or "sour milk and soda" or an aloes physic ball or tincture of aconite in colic. Rectal injections of soapy warm water and glycerin may be given with benefit, and a pint of raw linseed-oil containing an ounce each of turpentine and laudanum will prove a safe and beneficial drench in all simple attacks.



Simple but very effective

for the sow and her pigs. All that is necessary is to protect the youngsters and their mother from rain and cold winds.

How the Hogs are Housed

I recently visited one of the largest and best herds of registered Poland China swine in the South. These animals are owned by W. J. Davis of Jackson, Mississippi—the entire herd aggregates three hundred head of pure-breds. Mr. Davis maintains all of his animals out on the range in straw houses which he calls "homespun hog-houses," and the swine prosper and thrive under these natural conditions. Each sow and her litter are provided with one of these straw mansions and a small plot of pasture. The straw house is A-shaped and open at both ends. It is made by constructing a

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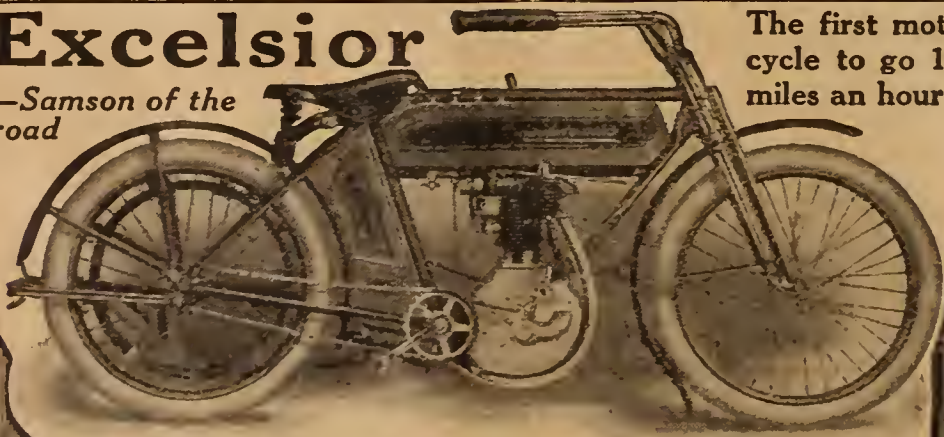
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The FARMERS' LOBBY.

The Farmer and the Future

By Judson C. Welliver

THERE has never been a time when the government of this country was so much concerned about the farm and the farmer, agriculture and its welfare, and all the subdivisions and corollaries of those subjects, as right now. Hardly a day passes when something doesn't turn up in Washington to show how keen is this concern. It has reached the point where one seems justified in making a modest prediction that for some decades to come agriculture, instead of manufacturing, is destined to be the particular pet of the Government.

You know what I mean by that. From the beginnings under Alexander Hamilton, the Federal Government has devoted vast energy and effort to fostering manufactures. The country was essentially agricultural when that program was set afoot, and the feeling was that it needed diversification of interests. The original argument in favor of protective tariff duties was that the national safety would be promoted by them. Later diversification of interests became the talking-point. The farmer would provide a market for the manufacturer, and vice versa. So the country, with some occasional lapses toward lower duties, has in a general way moved along the protective pathway, and the tendency has been to make the tariff a more and more important feature of the national industrial program.

The Farmer's Acres Must Yield More

WHAT has resulted? Manufactures have outgrown agriculture. The people have gone to town. The problem has changed from getting them to build factories to inducing them to till the soil.

It is a complete reversal; and the new tariff measure is going to develop the evidence of change in many and striking ways. I am not starting any tariff argument here; but there are plenty of people who think the manufacturer has been pampered in the past. Certainly the farmer hasn't. All right. My forecast is that if any pampering is done hereafter, the farmer is the chap that will be the beneficiary. He is not going to be pampered with high duties and that sort of thing; but in a myriad of other ways he will be looked after, encouraged, boosted, patted on the back and generally given to understand that if he doesn't see what he wants, it will be worth while to ask for it.

No wonder. The farmer has got to be encouraged to raise more stuff, or the folks in town will have to lop off a good deal of their eating. Have you observed that bunch of statistics that the Department of Agriculture handed out the other day, about the shortage of our meat supply? Perhaps there was a bit of politics in the outgiving of it; at any rate it came just at the same time when the tariff-makers decided to put meats and cattle on the free list, and it certainly was an interesting coincidence.

The Beef-Cattle Decrease

IN SIX years past there has been a decline of over thirty per cent. in the number of beef cattle in the country. At the beginning of 1907 there were, by the Department estimates, 51,566,000 beef cattle in the country, while on the same date this year the number was only 36,030,000. Not only this. Over half the meat animals are killed under government inspection. The number of them thus killed was thirteen per cent. less in the first three months of 1913 than in the like period of 1912. Here is the statistical dope on it:

First three months of	Cattle	Calves	Hogs	Sheep	Total
1912...	1,753,882	458,309	10,149,088	3,640,290	16,001,566
1913...	1,595,593	398,843	8,885,421	3,036,548	13,916,396

A steady decrease right down the line. It can't be accounted for on any assumption that the market has been bad, for we all know prices and demand have been highly favorable. Thus, at Chicago the 1912 average price for native steers was \$7.95, as against \$6.50 in 1911—an increase of over twenty-two per cent. Hogs showed an increase from \$6.70 to \$7.65, or a little more than fourteen per cent.

All this doesn't prove quite so much as it might seem to, because everybody knows that when an era of high prices starts in, there is a disposition to sell everything fit for the market, with the result of a shortage later. Still, there is evidence that the general tendency is to a closer and constantly closer balance between supply and demand. One reason is that our huge and growing cities and towns demand such an immense number of cattle for the production of milk. The Department heads tell me that they are going to devote much effort to encouraging the production of meat in the East and the South. They believe there is a great field for missionary work in those sections.

More Meat for the Cities, by the Cities

ONE thing the Department proposes to promote is the municipal abattoir. Several cities in this country have tried it, and very successfully. In Europe it is almost as regularly the rule as it is the exception here. There are especial reasons why it is needed here, in the eastern towns: the meat slaughtering business is so closely controlled by the great packing firms that, if the Department experts are right, it is necessary to give some special encouragement to get any competition started with them. The great packing concerns, of course, look after the concentrated markets of the cities with especial care. They can handle their business there easily, because of the immense demands, the possibilities for doing everything on the wholesale scale; so they don't want independent slaughterers coming into the field.

The Department, not unnaturally, calculates that for that very reason the big cities are the best places to promote opposition to anything savoring of monopoly. It would like to see more meat animals raised in the immediate vicinity of the cities, and then to see every city establish a market in which there would be steady demand and ample facilities for taking care of all offerings. That development is going to command attention until the experiment is fully tried out, at least.

The Farmer Can Get What He Wants

ANOTHER direction in which government encouragement is to be extended to the agricultural community is that of roads. Whether we believe in it or not—a good many real farmers don't—it is plain as daylight that the National Government is going presently into the business of building country roads. The beginnings will be modest and rather experimental; but it is an enterprise that, once entered upon, is certain to absorb more and more importance to itself. We can all recollect how tentatively and cautiously the first experiments in rural free delivery were undertaken. Nobody would have dared tackle it if it had been realized that inside of twenty years Uncle Sam would actually be lugging a daily mail to almost every farmhouse door. They would have been certain that such a stunt would bankrupt the Government. It did nothing of the kind; the post-office keeps right on providing new facilities and coming closer and closer to a profit.

Perhaps, therefore, it is safe for the Government to jump into the good-roads business, in partnership with the States. One thing is certain: If the farmers want federal aid in building roads, they can get it by going after it. Congress is in a melting mood. Nobody is prepared to vote against anything the farmers are agreed in wanting; partly because of the farmer's political importance, partly because of this new disposition to transfer the pampering from the manufacturer to the farmer. If you want your fur stroked the right way, Mr. Farmer, just hump your back and rub up against Congress.

The last Congress named a special joint committee of House and Senate to study up this question of federal aid in the construction of roads. Senator Bourne of Oregon—now out of the Senate, but remaining chairman of this committee—was head of the thing, and he has taken a keen interest in the investigation. He thinks that the determination should be

made to combine national and state credit for the purpose of road-building, so as to get the cheapest possible money. He would do that in an ingenious fashion. Taking a total investment of a billion dollars as a basis, he would apportion it among the States in proportion to their needs, areas, wealth, etc.

A Big Financial Scheme

ALABAMA would be entitled to \$17,200,000, and New York to \$78,600,000. The National Government would raise this money by selling three per cent. bonds, to run fifty years. When New York wanted its \$78,600,000 from the fund, it would deposit bonds of New York State, running fifty years and drawing four per cent. interest, with the Treasury at Washington. That is, the National Government would accept state bonds drawing four per cent. as security, and sell national bonds drawing three per cent., and turn the money over to the State. The State would, of course, pay the interest on its bonds direct to the National Treasury; three per cent., out of the four, would go to paying the interest on the corresponding national bonds, and the other one per cent. would become a sinking fund. Invested properly, it would amount, at the end of the fifty-year term of the bonds, to enough to retire the entire issue of government securities; whereupon the National Government would cancel and destroy the state bonds it has held for security, and the transaction would close.

How to Get Good Roads

IF THAT scheme isn't worthy of a veritable Napoleon of finance, I never heard of one that was! Senator Bourne has invited all comers to throw bricks through it, to point out where the hole is in his skimmer; and, truth to say, nobody has succeeded very effectively in breaking down the plan, so far as concerns financing. But there is a good deal of impression that the administration might get careless, when there was division of responsibility between the State and Federal Government.

This plan would permit the States to have whatever road laws they liked, provided only that the federal money was legitimately and wisely used, and the roads kept in good repair. To the maintenance of the roads thus built, the Bourne plan would have the National Treasury make a direct annual contribution, probably of two per cent. on the entire amount thus raised. But this would be granted only on condition that the State regularly paid its interest on the bonds it had deposited in the Treasury, and, further, that the State paid its own proportion toward maintenance of the roads. The operations of the plan would be under charge of a federal Highway Commission, whose authority would be very wide, extending to the point of dictating the conditions under which States must use their federal road-money. That would seem to be absolutely necessary, indeed, unless we take chance on endless graft and waste. The experience of the different States in spending even their own revenues for roads does not justify great confidence in their administrative methods. They need to be watched very closely.

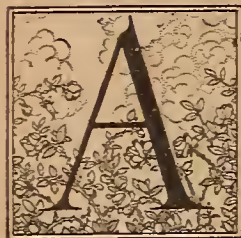
Congress Will Listen to the People

MR. BOURNE proposes to spread out the workings of his plan so that no State may get more than one fifth of its entire allotment of the fund in a single year. He would not feed out a new allotment until the Highway Commission had reported that the preceding one had been wisely used, and that there was good reason for going ahead with the arrangement. Senator Bourne is confident that this plan, with perhaps a good many modifications, will at length be adopted. He is devoting himself to its promotion, with the same zeal that he devoted to the parcel post a few years ago. His methods now are much the same as then; and it is to be remembered that in the parcel-post affair he got what he wanted: he passed a parcel-post law, which was more than anybody else had been able to do. He organized a nation-wide movement for it that Congress simply could not withstand; and he is plugging away now, organizing a like movement in favor of his federal-aid-to-roads scheme. It need be no surprise if he wins. His methods are the methods that usually win in such campaigns.

An Aunt Susan Day

By Annie Hamilton Donnell, Author of "The Very Small Person," "Rebecca Mary," Etc.

Illustrated by Edward L. Chase



AUNT SUSAN was frankly dismayed. The third reading of that letter was worse than the first. She was afraid to try a fourth!

"Polly is crazy, stark, staring crazy, to depend on me! To take it all for granted that I'll go as meek as an old sheep!" Her indignant thoughts stopped for breath. Then close upon indignation came hurrying the old devoted adoration of Polly, and pity for poor Horatio to have gone and broken his leg a thousand miles from home.

"Oh, well, I'll read the letter once more," sighed Aunt Susan. "Perhaps this time it will sound easier to take care of her quartet of little wild Arabs on the Fourth of July." She sighed again and reopened her letter.

"I've got to go to 'Ratio,' Polly wrote, "and I want you to come to my boys—I've laid awake over that long enough to know it's the only way. Great-Aunt Johanna would come if I asked her, but it's you I want, because you're young and jolly. For eleven consecutive Fourth o' Julys have I stood guard from sun to sun in order to preserve intact in the family the proper number of fingers, toes, eyes, ears and noses. I'm not going to have any lost this twelfth time! That's all I ask of you, Susie,—to take care of those precious little 'members,' fingers, toes, eyes, ears and noses. I shall demand them all at your hands when I get home. Don't leave Kelly a minute! I enclose five dollars for the celebration. Spend about half for crackers, and half for torpedoes and fireworks. No cannon crackers of course. They'll make up for that by setting off whole bunches of the others at once. Oh, my dear, my dear, watch out! Don't let Kelly set off any of the fireworks in the evening. Better not let even McGregor. Get the Fitches' hired man, Andrew. Hold on to Kelly. Oh, I shall worry myself into a railroad wreck. You may think of me all day as covering in my chair in the Pullman! I haven't forgotten you're a stranger to my boys, but I'm not to blame for that. An own aunt to the four brightest nephews in the world's no business living abroad all their little lives. I'm not to blame if they think you're old and ugly and cross! I've never even shown them your picture, because I wanted them to see you first. 'Aunt Susan' has rather a fearsome sound—you've got a good deal of a handicap to overcome! But if you go with your hands full of fire-crackers and rockets—"

"I shall not go with my hands full of crackers and rockets!" exclaimed Aunt Susan. Her soft, young face was not at all an Aunt Susau face, but it was at this particular moment a firm, a resolved, young face. There were to be no murderous explosives in any Fourth of July over which she "stood guard." Of that she was resolved. She might be going empty-handed into a den of young lions who would rend her limb from limb at the discovery of her empty-handedness, but she would carry not one explosive!

"I'm not going to be responsible for their little eyes and ears and noses! I'm not going to stand by and watch their little jaws locked and bolted!" Slowly she rocked herself back and forth, planning her campaign. After half an hour she went down-town to do some shopping and also to read up a certain subject at the public library.

The next evening at six o'clock found her at her sister Polly's little station of Bradfield. She stepped from the train into a gesticulating, excited little group.

"She's never come—Aunt Susan hasn't!" shrilled a small, high voice.

"You wait, Kelly Briggs, here's another gettin' off. Gracious, that ain't her!"

"There isn't a single Aunt Susan here, and this is the last train there is to-day, and to-morrow's Fourth o' July. Kelly, don't you dare to get on that train an' get carried away! If she's on she'll get off. Catch him, catch him, somebody! McGregor, oh, McGregor, quick, look at Kelly!"

It was the slender young person who had last descended to the platform who caught at the child's retreating legs and dragged him back. With something much like a little shake, she presented him.

"Is this anything of yours? If I were you I'd hold on to it tighter."

"Oh, yes'm, he's ours—he's Kelly. (Don't you stir again, Kelly Briggs!) We came down to meet our Aunt Susan, but she never came."

"No, she never,—one step!"

"Mean, mis'able Aunt Sus—"

"(Hush, Kelly!) She was comin' to Fourth-o'-July us."

"She might 'a' sent the things to fire off anyway. We'd rather have just those, without her."

McGregor, evidently the oldest boy, drew himself up with a long sigh. "Come on home, all o' you; no use waiting any longer," he directed. "We'll have an awful big bonfire to-morrow anyhow."

"An' I know where there's a stick o' dynamite hid. I saw Mr. Fitches' Andrew diggin' a place to put it." Here the Slender Young Person hurriedly interposed a question.

"I don't suppose I'd do, would I, to take the place of the lady you were expecting? What was it you called her—Aunt Susan? I could spare to-morrow as well as not—"

"You don't look much like an Aunt Susan!" laughed one of the quartet, "you look lots better; don't she, boys? But we haven't got a single thing to sullybrate with, not a single. So we couldn't 'xactly have company."

"Oh, but I've got something! Right here in my suitcase!" The Slender Young Person was smiling ingratiatingly. "I really wish you'd invite me to your house. I wanted a nice place to Fourth-of-July in—"

Kelly struggled away from his captors and raised an earnest and lively little face. "Does what you got there go off?" he demanded.

Poor little Kelly! Sudden compassion filled the Slender Young Person's breast. She caught the small face between her two hands.

"We'll make the whole of Fourth o' July 'go off' splendidly—if you'll invite me. I know three perfectly lovely things that we could do to celebrate!"

A moment later invited, she sallied forth with her four hosts. But going by the telegraph window a thought struck her. She hurried within and scribbled a few words on one of the blanks. She addressed it to Mrs. Horatio Briggs on her train. "Don't worry!" wrote this Slender Young Person. "Nothing explosive to be on the place. New kind of celebration. Safe and sane."

After bedtime certain dialogues drifted out to the guest who sat on the piazza in the soft darkness. McGregor at his self-imposed post of entertainer had fallen asleep in his chair.

"My, I'm glad Aunt Susan didn't come, ain't you, Nathie? She's young an' makes you laugh! Gregg says he bets she's a fairy in dis-disuse."

"So that's why we got her, 'cause nobody else was usin' her!" Nathan laughed enjoyingly at the little joke.

From the next room floated Kelly's drowsy voice: "What she's got in her bagidge's a scrid. She said to guess why was it like some kinds o' soap—I'm goin' to stay—awake—till—I—guess."

"I don't want to guess, do you, Nathie? She says it's somethin' like a tiger an' somethin' like the sky an' it's just G-R-E-A-T. She says we got to all of us take off our hats."

The Slender Young Person smiled under cover of the dark, yet she quailed a very little at the possible outcome of her scheming. They were such dear boys. Was it cruel to deprive them of their beloved bangs and uproars?

She was up next morning at an impossible hour and out on the roof of the little colonial front porch, where she fumbled and manipulated with something clumsily big and heavy. Her knees rubbed against the roof shingles, her wrists ached, but she performed her task. With a grand flap and whir the "scrid" took the breeze. It was waving with beautiful, slow stateliness when the four boys appeared below. She heard their shouts of surprise.

"Like the kind of soap that 'floats'!" she called down softly, peering under the great flag. "Like a striped 'tiger'; like the 'sky,' because there are stars in it! Anybody down there that doesn't like my surprise?"

"No—no—no! An' we all got our hats off, way you said to! It's perfectly splendid!"

"But we never had 'em on, Gregg Briggs! We all came out bareheaded—"

"Oh, hush up! Don't you see it's our—our souls we take our hats off of, because it's our country's flag." The young voice was oddly solemn. The four little faces the Slender Young Person could see between the big flag's flappings were worshipful little faces. Something in the floating stars and stripes of their country's flag had caught at their heartstrings already. Suddenly the voice above their heads broke out yearningly.

"Oh, this is Aunt Susan up here on the roof! I'm Aunt Susan! If you don't promise to love me when I come down I shall stay up here always!"

Sooner than she could have believed possible they were on the little roof with her, in an excited chattering throng. She was besieged by boys that loved her. Kelly's little arms caught her neck in a strangle-hold of love.

"Oh—oh! An' we never supposed!"

"You aren't a mite like an Aunt Susan. Why, you aren't old or homely or anything."

"Well, now, listen! I am an Aunt Susan, and you went to meet me last night! Now listen again! I bought the big flag with the fireworks money your mother sent: it took every cent. Now what are you going to do to me? Isn't a flag the best-in-the-world way to celebrate? Isn't it? Isn't it? I want you to think all day long and answer me to-night. Now run down. After breakfast the flag ceremonies will begin. Gregg and I are going to begin them."

Up in the attic she hunted in trunks and boxes till she found the knee-breeches and buckles, the quaint coat and vest and even the three-cornered hat she needed to make a colonial boy out of McGregor. She dressed him up and drilled him in his part.

"You are to go out on the porch roof and read the Declaration of Independence to us down below, as every Fourth of July a colonial man reads it from the old state-house balcony in Boston, to the crowds in the street. We shall be the crowds! Nurse Hannah says you are a beautiful reader. Go slow and do the best you can with the hard words. Crowds are never critical. We'll listen as hard as we know how for the sake of the old flag and the minute men and our own great-grandfathers. And after that I'm going to tell you about Betsy Ross, who made the first flag, and about the queer different flags we had in the beginning; the one with the snake and 'Don't Tread On Me' on it and all the other different ones. I've seen them all at old Faneuil Hall, in Boston, our 'Cradle of Liberty,' you know. I'm going to try to make you see them. At the library I read up every single flag thing I could find, just to tell you. All that will be ceremony number one."

It was a successful little ceremony. Even the long and tedious Declaration was interesting because the flag flapped so stately and Gregg looked "so queer in his old three-cornered hat, and all that!" Aunt Susan's little speech was listened to almost breathlessly, even by Kelly.

Ceremony number two, after lunch, turned out to be a play, a regular play! It was called "Barbara Frietchie," and everybody had a part to play. The orchard trees were the "clustered spires of Frederick," the hill behind the orchard was the "mountain-wall" that Lee marched over. McGregor made a beautiful Lee, and the other three a beautiful "horse and foot" to march into Fredericktown. There were not forty flags with their silver stars and their crimson bars, but there were all they could possibly hunt up, hung about, and every one "the men hauled down." Then it was that Barbara Frietchie, with powdered white hair, waved the great new flag from her attic window. She "leaned far out on the window-sill and shook it forth with a royal will."

"Shoot if you must!" she cried. "But spare your country's flag!"

The great moment of the play came then, when little Kelly Stouewall Jackson, glancing under his slouched hat right and left, saw that flag. It was a wonderful

little nobler nature that stirred within him. He shouted "Who touches a hair . . . March on!" splendidly, and old Barbara Frietchie threw him a kiss from her window. Ceremony number two was even more successful than number one.

Number three was red, white and blue ice-cream brought by the expressman from the station in a little freezer of its own that kept it hard and cold. Nothing could have been more patriotic than ceremony number three, out under the orchard trees. And afterward the shining fireworks of the stars and the fireflies—with Aunt Susan sitting among her boys in state.

"Now," she said, "are you ready to vote? The ballot-box is fastened to the porch rail. As you go in to bed, each one cast his ballot—yes or no. 'Yes' if this has been the right kind of a celebration, 'no' if you wish it had been fire-crackers. Drop your vote into the box, and don't let each other know what it says."

On the front stairs she announced the returns in a clear, triumphant voice.

"Four yesses and not a single no! Now all of you sit up in bed, up there, and we'll sing 'The Star-Spangled Banner'—somebody begin."

"The Star-Spangled Banner," piped Kelly gloriously, and Aunt Susan on the stairs sobbed, she hardly knew why, as she sang.

"Now, why," she inquired of the Slender Young Person in her mirror, as she undressed a little later, "Why can't everybody do it? Why need there be any more things that go off? Death to 'em—oh, death to 'em all! And long life to the Star-Spangled Banner."



"Anybody down there that doesn't like my surprise?"



"No—no—no! It's perfectly splendid!"

For Sunday's Reading Hour

Men of Vision

By Richard Braunstein

Where there is no vision, the people perish.—Prov. 29, 18

WHEN The Honorable James Bryce, Ambassador from the Court of St. James, returned to America a few years ago he was met in New York by the representatives of the metropolitan dailies. Among other questions they asked him what he thought to be the greatest need in America. They had their note-books open and pencils poised in expectancy. They thought he would say that America needed great engineers to tunnel the mountains, great financiers to control our money system, great captains of industry for our industrial organization. But Bryce did not name any of these. What he did say was, "Gentlemen, what America needs most, just now, is poets." Of course he was not understood. The papers called him a sentimentalist. But was he not right? Every great thing done, that has been worth while, every great achievement that has done the world good, has been the result of a vision somewhere. "James Hill," says the Rev. Dr. John McDowell, "the great builder of American railroads, had a vision of a railroad over the Rocky Mountains long before he ever laid a rail." What we need to-day are men and women with vision power. God wanted to free Israel from bondage and gave Moses his vision in the burning bush and sent him down to Egypt to emancipate the captive race. Saul, the persecutor, the Pharisee, saw a vision on the road to Damascus and straightway became Paul the preacher—persuader, missionary and apostle to the Gentiles. God gave Abraham his vision, and Lincoln emancipated the slaves and perpetuated his name and fame, which shall last until the ages are done.

Would we have a better community? Then let us have men

who have a vision of what a better community will be. Would we have better conditions everywhere, in all things? Then let us have men who are seeing in their imaginations better things and better days and better conditions.

Says a recent writer, "The Clermont's wheels revolved in Fulton's brain before they churned the waters of the Hudson. Telepathy sent a wireless message from the brain of Morse before telegraphy flashed its first laconic message between Baltimore and Washington. Edison saw in the daytime before his genius enabled others to see better at night."

Every great artist, or musician, or inventor, or author must have been a poet first. A poet is a maker, a maker of inchoate substances into lovelier and livelier forms. The angel in the rough

stone is first of all an angel in the sculptor's brain. Before man was made in the image of God he existed in the thought of God. Before the Kingdom of God can be realized we must have an idea, a vision of that Kingdom. Reforms will come when people see that they are needed. We shall have kinder social laws, a fairer competitive system, cleaner cities, better schools, better farms, better roads just so soon, and not until, the people see that those things are needed. May every town, city and country hamlet have a man, a woman, with a vision!

The Child Moses

THE child Moses, Exodus 1, 22 to 2, 10, is the Sunday-school lesson for July 6th, and the golden text is "Whoso shall receive one such little child in my name receiveth me." Matthew 18, 5. In connection with the lesson read "Affliction of the Hebrews," Exodus 1, 1-14; "Jesus Saved from Herod's Massacre," Matthew 2, 13-18; "Jehosh Saved from Athaliah," II. Kings 11, 1-12; "Glorying in Persecution," II. Corinthians 11, 22-30; "Suffering for Righteousness' Sake," I. Peter 2, 19-24, and "God's Care of His Own," Matthew 10, 24-31.

Moses Preparing for Work

THE Sunday-school lesson for July 13th, Exodus 2, 11-25, takes us to the manhood of Moses, when he is being prepared for his great life-work, and the golden text will be found in Matthew 5, 5: "Blessed are the meek: for they shall inherit the earth." The home reading topics are: "God Trains Moses," Acts 7, 17-29; "Energy of Faith," Hebrews 11, 17-29; "Timothy Trained for Work," II. Timothy 1, 3-14; "Armed for Service," Ephesians 6, 10-20; "Young Men's Heed," Psalms 119, 9-16, and "Perfected Through Suffering," Hebrews 2, 10-18.

Freedom

*OF OLD sat Freedom on the heights,
The thunders breaking at her feet;
Above her shook the starry lights;
She heard the torrents meet.*

*There in her place she did rejoice,
Self-gather'd in her prophet-mind,
But fragments of her mighty voice
Came rolling on the wind.*

*Then stopt she down thro' town and field
To mingle with the human race,
And part by part to men reveal'd
The fulness of her face—*

*Grave mother of majestic works,
From her isle-altar gazing down,
Who, Godlike, grasps the triple forks,
And, kinglike, wears the crown:*

*Her open eyes desire the truth.
The wisdom of a thousand years
Is in them. May perpetual youth
Keep dry their light from tears;*

*That her fair form may stand and shine,
Make bright our days and light our dreams,
Turning to scorn with lips divine
The falschood of extremes! —Tennyson.*



Mrs. Homelot—"Gracious, Anty Drudge! I'm ashamed to have you see my house! But the new calf got the colic, and I've been in the barn all morning. It's better now, and it won't take me long to clear away these dishes. They've been soaking in cool water and Fels-Naptha Soap."

Anty Drudge—"Lots of women would be tuckered out after nursing a calf through the colic. But I see you believe in making the best of things. Besides, you save your time and strength by doing things the easy way."

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What You Must Do to Prevent Lockjaw

By Dr. L. K. Hirshberg

WE STAND on the eve of the Fourth of July, and, while the children amass their noisy tokens of patriotism and wheedle their fathers into the purchase of deadly fire-spitting devices, mothers set their teeth to endure long hours of torture for the safety of their little ones. Little by little the delights of the safe and sane Fourth are being recognized, but in the meantime, while the crackers bang and blaze, it is a comfort to know that doctors have learned to deal so effectually with one of the dangers attendant upon the Fourth of July—lockjaw—that there is no need for the disease to result in death. Nevertheless, through lack of information, over a thousand people in the United States die from it each year, most of them farmers and country-bred youngsters. The reason why lockjaw is so often associated with Fourth of July accidents lies in the fact that wounds made by firecrackers, sky-rockets and blank cartridges are commonly ragged and contused, and so afford a favorable soil for the germs. It is well known also that wounds where free air and oxygen cannot enter, as is the case with those made by rusty nails or those accompanied by deep tearing and those in which dirt has been ground into the flesh, gunshot and powder burns, are those most likely to be followed by the disease. The first symptoms of lockjaw usually appear from three days to three weeks after the injury. Home remedies and sobs of bacon hasten it. The earlier they appear, the more fatal the attack. In all cases, whether death or recovery follows, the symptoms of lockjaw are indeed terrible, and the sufferings of the patient are equaled only by the horror and anguish of those who watch at his bedside. Fortunately, it is always possible to prevent lockjaw, provided no delay follows the injury. The method is to have a doctor inject antitoxin—poison antidote—into the patient's flesh. This kills the poisons as fast as they are given off by the lockjaw germs, which are a veritable mine of poisons at the site of the sore. If treatment is delayed

until lockjaw symptoms appear there is little hope of cure. It is then too late. The effectiveness of antitoxin in treating lockjaw depends altogether upon the celerity with which it is used. If the disease is established it is very difficult to cure it. Fatal results are almost always blamable upon the reluctance to seek experienced medical aid. Most persons when they are wounded bind up their wounds, frequently without even ordinary washing. Never do this, for the folly of it is only too apparent. *At best*, healing is preceded by festering, and the result is much pain and an unsightly scar. *At worst*, lockjaw develops, and death is not far away. Most doctors now use antitoxin immediately.

In the interval which may elapse before a doctor can arrive it is advisable to wash the wound thoroughly with soap and water, and to flood it, before binding it up, with common peroxide of hydrogen. After this has been done, the wound should be covered, but on no account use a handkerchief or an old rag, but get a strip of antiseptic bandage sold at low cost by all drug-stores. A package of antiseptic bandage should always be in readiness in every household. A clean, open wound which bleeds freely is little apt to harbor the germs of lockjaw. The light and air and oxygen striking into it kill them, and the flowing blood

washes them out. In all such cases, unless the flow of blood is excessive, it is well to make no effort to stop it. It will cease of itself in a few moments. The use of such homely remedies as bacon and spider-webs to stop the flow is foolhardy and frequently fatal. The average spider-web, particularly if it comes from a cellar or a stable, is alive with germs. But no matter how small the wound may be it is well to have a doctor dress it. He alone is capable of washing it as it should be washed and of estimating the likelihood of infection. His fee is money well invested. It may buy only insurance against a long and terrible illness, but then again it may buy insurance against death. Reports show that, whereas there were 450 cases of lockjaw following Fourth of July accidents in 1903, the number dropped to 105 a year later, to 104 in 1905, to 89 in 1906 and to 73 in the past year. There is also a lowering death-rate after the development of the disease, all of which is due to the use of antitoxin.

Few germs are distributed more widely than germs of lockjaw. It is abundant in garden-soil, stable-bedding, street-dirt and that which has been fertilized with manure. It may be looked for on rusty nails, pitchforks and implements which oxygen rarely touches. It is found in the litter of every barn-yard and in the dust of every city street. It occurs on dirty clothing, on shoe-soles, in gutters, and on the surface of fruit, in pocket-knives and even in sea-water. Recently a pimple on the face of a four-year-old child squeezed or scratched by the boy resulted in the terrible disease.

In view of these facts the reader may wonder why every person in the world, at some time or other, is not laid low by lockjaw. The answer lies in the fact that the germ, though well-nigh omnipresent, is far from vigorous and frequently dies in infancy. Its chief enemies are sunlight and fresh air. If a mass of these germs is placed in direct sunlight they will be dead in a few hours, and so it frequently happens that they are killed before they can do much damage.



IN FRONTENAC CAVE

As Told by One Who Was There, and Edited by Hayden Carruth

Author of "Track's End," "The Voyage of the Rattletrap," Etc.

Illustrated by Edward L. Chase

Synopsis of First Part

Judson Pitcher, about eighteen years old, comes to Hawk's Landing, on the Mississippi River in Minnesota. Here he meets Captain Nathan Archway and his daughter Amy and his son Robert. Robert goes with Judson to the Lumberman's Bank, and while there it is attacked by the notorious gang of robbers led by Isaac Liverpool. Robert is shot and killed, and the gang escape to their hiding-place in Frontenac Cave. It is impossible to penetrate this cave by the only entrance known, since the robbers have closed it up. Captain Archway conceives a plan to get into it through a small sink-hole on the prairie a number of miles back from the Zumbro River. He and Judson go there in the night and lower themselves with a long rope. While they are exploring the upper part of the cave a thunder-shower comes up, and the flood carries the rope down the sink-hole and fills the small opening a hundred or more feet above with brush and soil. Before leaving the Captain's home at Hawk's Landing, Judson finds, as he reluctantly admits, that he is very much interested in Amy Archway.

Part II.

The flood abating, we make desperate efforts to get out of the cave; we are puzzled by the mystery of the throbbing sound; then we pass the Trap-Door, only to meet with an alarming accident and be brought face to face with an astonishing happening.

WE FELL and stumbled backward till we got to a place where the flood did not threaten to carry us along, and where we were no longer choked by the spray. Then we felt about on the wall till we found a little pocket in the rock, into which we crawled, and in which we could just sit upright. The Captain had never once let go my arm, and now he began to say in my ear: "We'll get out, Jud; we'll get out, Jud," half a dozen times, as if to cheer me up. Then he added: "I've been in worse places than this when I followed the sea;" but I have never been able to conjecture where they could have been; nor did he ever explain to the day of his death, though he had twenty years in which to do so.

I got a match out of my bottle and struck it on the handle of my jack-knife and so lit the lantern. This showed us not much, however, except our own white faces, though the Captain seemed not much scared and soon began to talk as cheerfully as you please.

If we thrust our heads out of our pigeon-hole we got the spray, so we only sat and watched the flood go by. At first it had flashed upon me, what if the lower part of the cave fills up, then we must drown where we sit; but I soon concluded there was small danger of this. We were chilled through with the water and the cool air of the cave, which was always, as is ever the case with caves, a little too cool to sit comfortably in, though right enough for stirring about.

After two hours the flood began to lower, and in another hour there was only a small stream drizzling down the dome. We left our things (the powder in the gun and horn both spoiled by the water) in the hole and went out to look about. Our rope was washed down to the foot of the tunnel, and we coiled it up and placed it on a ledge, though I can hardly tell why we did so, as we had no use for it. When we stood under the dome and looked up we could see no light, which, indeed, was to be expected, as it was now past eight o'clock.

"We can do nothing about getting out to-night," said the Captain. "We had best stir about till we are warm and a little drier, then find a good bedroom and go to sleep. Time enough to get out to-morrow after we have looked around a bit."

"Yes," I said, not yet being over my fright, "there'll be time enough to-morrow, and for some days, but what about the way to get out, Captain?"

"We'll see, we'll see, my boy," he answered. "There's more than one door to this place. In fact, I'm thinking that that's only a sky-light anyhow."

"How long will the victuals last, Captain?"

"Two days, full rations; four days, half rations; a week, light rations."

"But the candles won't last as long," I said.

"Pretty nearly, Jud. Perhaps longer. We won't need to keep a light night, and one candle is as good to explore with as two."

We took the basket and went down the cave in the direction we had followed before. But the mud and water were everywhere, and we had to go a long way before we found a good bedroom, as the Captain called it. We at last hit on a room with a sandy floor and a rounded ceiling, ten or a dozen feet high. We had to climb up somewhat to get into it, which accounted for its dryness. The floor was a hollow, like a shallow bowl, and looked as if it had once been a small lake, the water having dried up and left the sand. There was a little crevice at one side running down wedge-shaped in which were a few stalactites, and a pool of clear water below which was sweet and good. We tramped around on the sand till we were warm and then lay down for the night. I got to sleep at last, and though I woke up a good many times with the cold and strangeness, I still felt pretty rested in the morning. As for the Captain, he declared that he had never slept better. I suppose I might as well confess that I had thought of Amy a good many times since we had come into the cave, and that she was the first thing I thought of in the morning.

We were a good deal puzzled in the morning by a certain thing, and for many days later. This was a

strange beating sound which I heard, or felt, I could scarce tell which, as I lay awake on the sand in the morning, while the Captain was yet asleep. It was so faint as to be almost nothing, and often I lost it altogether. When the Captain awakened I told him of it; at first he could not make it out, but by laying his ear to the wall, where it was plainer, he did; but could no more explain it than I. It seemed like a very dull and far-away pounding, and beat twenty or twenty-five times a minute by the Captain's watch. We listened long, but knew no more what it was when we got through than when we began. When we went back under the dome and looked up we could see nothing of the spot of light, but this was no mystery at all, as we knew the water had again covered it with sticks and brush.

Now, though I never wrote anything before (except letters and such like), I am not foolish enough to try to describe the terrible next six days which the Captain and I passed through in that horrible cave. Never did I know anything so bad before nor since, and though the Captain all the while tried to make light of it and kept referring darkly to worse things which he had gone through when following the deep sea,



"See there, Jud!" exclaimed the Captain

still I know this, that a man may sail all the deep seas to the end of his days—ay, and take his vacations in the desert, so to put it—and yet never find anything so bad. These two monsters we fought night and day, to wit: Darkness and Hunger; and what is worse? And ever the diving and turning, crazy, squeaking bats.

So I will say this only: That for these six days we pushed our way through the darkness of that cave—burrowed our way through the darkness like moles through the ground—searching for a way out; and found none. It was well for us that those bats were small; their will was good enough to destroy us; how they squeaked at us, and slid up and down on the air, jerking themselves this way and that through the rooms and tunnels!

Twenty times we shouted ourselves hoarse under the dome where we had entered, our voices growing each day weaker; twenty times we went through the whole cave, the Captain day by day dividing our stock of food smaller and smaller; twenty times (it seemed) we crawled down into each hole and wriggled up into each crack, every hour that we could dimly look into each other's faces, our candles growing shorter and the matches in my bottle fewer. To this day it makes my flesh creep to hear a bat squeak, and when one dips at me I always dodge.

But I have said enough (and too much) of this; on the fifth day the last of our victuals were gone. The candles were gone, too, except for part of one. But it was nine o'clock by the Captain's watch and, if we had not lost our reckoning, night and not morning, so we dragged ourselves to the bedroom, put out the candle, carefully stood it in the sand and lay down to sleep again. I think our sleep was feverish and wakeful; I know mine was; and I dreamed of all manner of things to eat, as I had for two nights before. The strange throbbing which we heard only

in the bedroom had grown louder, but we were not disturbed by it, as we never heard it at night; by which we had concluded this much about it—that it could not be made by water or any such thing.

In the morning the Captain said to me: "Judson, there's nothing to eat. I'm afraid we're in a bad fix." He moved nearer and took my hand in his as I sat there on the sand in the dark, and I could feel it tremble. "Perhaps, Jud, we are not going to get out of this place alive. I have blamed myself ten thousand times for bringing you in here. I must have been crazy when I did it. I wish I could think that you would forgive me for it."

"That I do, Captain," I said, and I know my voice trembled more than his hand. "I would not have let you come alone if you had wanted to. Can you forgive me for taking Robert where I did that day?"

"Oh, that was different. You did not know there was danger. I ought to have known there was awful danger here. I should have listened to Amy. Oh, what will become of her if we don't get out! Come, we'll make another trial! We'll not die here like rats in a hole. There's enough candle to last five or six hours by keeping the wick split. We have a little strength left, and there's one place beyond the two-column room where I think there may still be hope. There are three matches left, you said."

"Yes." "Be sure you find a dry place before you scratch it," he added as I felt about for the wall. The match went, and he held the candle and once more we looked into our thin, pinched faces. I could see that he appeared much more bowed and broken than the day before. For two days we had been following the plan (it was the Captain's idea and a good one) of keeping the wick of the candle split in two, carefully pushing down and cutting off half of it with the point of our knives as the tallow sank lower. This gave a smaller flame but ate up the candle much slower.

The regular beat of the unknown noise had begun again and was plainer than ever, but we left it behind when we got beyond the room we were in. We dragged ourselves along by the shortest way toward the two-column room. Several times we stopped and went down into holes which we thought might lead somewhere; but we always found that we had explored them before. There seemed to be hundreds of these places leading down and under which ended by being too small for us to wriggle farther. In some places, deep down under ledges at the side or end of rooms or passageways, we found holes or long, low openings through which we could see higher and larger space beyond, but which were too small to get through to what might mean freedom.

We got to the two-column room at last, which we so called from two big limestone pillars, and clambered over a pyramid of loose rocks and then down a steep crack a number of yards wide but hardly two feet high. We slid down twenty feet, and sat up where it was a little higher.

"We've been here before, Captain—it's like all the rest," I said sorrowfully and hopelessly.

"Yes, I guess we have, Jud," he answered. He peered down into the narrowing crack. "It's larger beyond, but there's no getting through." He rested his shoulder heavily on the rim of rock which barred our way. As he did so it moved. He seized it, exclaiming: "Why, it's loose, Jud!" And so it was.

We both laid hold of it, and though you could rock it with one hand, we were not strong enough to move it. But we could see that if it could be rolled a foot we could get through.

"If we had something to pry with we could do it, Captain," I said.

"The gun-barrel would do," he answered.

"I'll get it," I cried, springing up with new strength.

"But it's two miles there."

"I don't care. Stay here, and I'll bring it," and I was off.

I was as good as my word too, going as fast as I could without flirting out the little flame of my candle, though as we had come down I could only drag along as if made of lead. I passed the bedroom and the ledge on which rested the coil of rope, found the gun readily enough and hurried back. The Captain pried under the end of the stone with the barrel while I pushed on the top. It rolled over and we crawled through.

We crept for perhaps a hundred feet, all the way downward; then we came out in a high and vaulted room with great glistening stalactites at one side and realized that we were where we had never been before. We forgot our hunger and weakness and went along faster than for days.

"We've got down into the main part of the cave," cried the Captain. "See how much bigger the rooms are. We won't have to crawl here. We're all right now, Jud!" and the old fire came back into his eyes, as he faced me and held up the candle.

"I hope so," I answered. "But the candle won't last four hours."

"You can do a good deal in four hours, my boy. Hello, what's this?"

He was looking up at the roof three or four feet over our heads on which this was smoked in rude letters:

GIL DAUPHIN WAS HERE.

"Gil Dauphin was here," I read. "Who is Gil Dauphin?"

[CONTINUED ON PAGE 18]

Our Young Folks

A Page for Boys and Girls

Conducted by Cousin Sally



Cousin Sally's Letter

DEAR COUSINS—A good many years ago, in southern Ohio, a farmer boy and his sister chum planned a splendid surprise for their parents and elder brother. This treat was to be a proudly floating red, white and blue starred flag to greet them upon their return from a rally at a near-by town.

It meant lots of work and bubbling secrecy, for they were so full of the plan and just "mustn't tell" that they could scarcely exist.

Not dreaming of the plan, the folks wondered why Susie and Joe didn't seem to care about not going to the rally, for they usually wanted to go wherever their elders went.

For several days before the Fourth they were busily making the flag out in the barn—the best place Susie and Joe could find to plan and work out their surprise.

The pole, a young sapling, had been cut over on the opposite side of the near-by stream. As soon as the party for the rally left, Susie and Joe started to complete the surprise.

While Susie cheered from the home side of the creek, the sapling was pushed across by Joe, who could swim almost as well as a fish. Together they managed to get it to the top of the hill where

their home stood. They were so busy with digging a post-hole, fastening the stary glory to the staff and firmly setting the flagstaff in place that they forgot noon was dinner-time, though I expect it tasted much better when flushed, brown-tinted faces could look upward at their country's flag in their own home yard.

I cannot tell you how proud the parents and elder brother felt when it greeted them at twilight. They have often said they were sorry they were not there to help in the flag-raising.

Joe Foraker later became a famous soldier, Governor of Ohio and United States Senator, a man whose heart was always true to the symbol he loved when a boy.

Now, when people's birthdays should always be remembered, it is still more fitting for we Americans to celebrate our country's, which will be its one hundred and thirty-seventh this July Fourth. I want all the cousins to have the merriest, happiest kind of a day. I also want them all through the frolics to remember the heroism of brave men who gave us the great gift of a free nation.

How would you like to take part of the money you have saved toward buying firecrackers and buy something you can keep? Something red and white barred, with a field of blue dotted with stars representing each State from Maine to California.

You could have the flag-raising the Fourth, and every day thereafter, you could lower it at sunset and raise it before going to school or doing vacation tasks.

Don't you think it would be one of the grandest ways to spend the Fourth making your home like Joe's—one dedicated to our country's symbol of our national ideals: Honor, Truth, Bravery. Faithfully, COUSIN SALLY.

The Whizzles and the Wumps

Celebrate the Glorious Fourth

By Pauline Frances Camp

THE Whizzles woke up early on the Fourth
And leaped from bed,
Hurrahed for independence and
Cheered till they were red.
They gambled out upon the green,
They vaulted posts and stumps,
Till someone looked around and asked,
"Where are those lazy Wumps?"

They found them fast asleep, indeed,
In every kind of pose.
They pulled their hair and tickled them
And tweaked their ears and nose.
But when they'd roused them up at last
The Wumps made dismal moan:
"When we're awake, we cannot sleep;
Pray, leave us quite alone!"

Meantime the Whizzles, out of doors,
Were having glorious fun.
They rang the bells and beat the drums,
Set off the biggest gun.
And when the fireworks began
They slyly crept away
To where, in glowing scarlet coat,
A giant rocket lay.

'Twas dark, and no one saw the Whizzles
Mount the mighty thing,
Until with sudden rush and roar
The monstrous bird took wing.
And up and up it tore its way,
The Whizzles all astride;
Their mouths a-stretch from ear to ear,
At such a splendid ride.

The firecrackers banged; the Wumps
Crawled quaking 'neath the bed.
"Such noises interfere with conversation,"
So they said.
A cannon roared, and all the Wumps crept out
With faces pale.
"Tis in the bed we ought to be
In thunder-storms," they wailed.



They tickled them

Higher they went and higher yet,
Up where the Great Bear growled;
Where Sirius, the Dog-Star, barked
And tugged his chain and howled.
Then with a crash the rocket burst!
The Whizzles gave a bound,
And on its dropping stars they
Floated gently to the ground.

"Oh, it has been a glorious day,"
The happy Whizzles cried;
And then they sought the little Wumps
To boast their airy ride.
They found them cuddled close on top
Of double feather beds,
A monstrous, big umbrella opened
Wide above their heads.

And when the Whizzles asked of them
The wherefore and the why,
"We hear," they cried, "that showers of stars
Are falling from the skyl!"



No one saw the Whizzles mount the mighty thing



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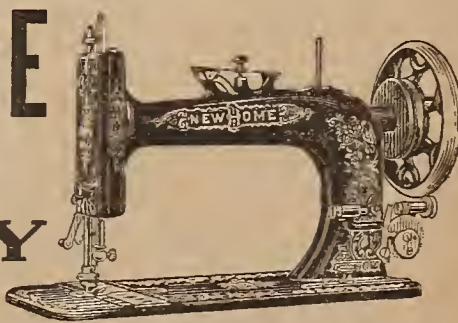
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Towel with Swedish Weaving

Working Directions by Evaline Holbrook



Good Ice Cream is Good for You

It *must* be good, however. You should know just what ingredients are used—how pure the milk or cream and if it contains a sufficient amount of butter fat. You want to be sure the flavoring extracts are pure. The best way—the safest way—is to make your own ice cream and make it in a

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It's so easy to use. And it makes the ice cream so quickly. One turn of the handle stirs the cream three times, for the can is revolving while two dashers work in opposite directions. Makes the ice cream in one-third the usual time and makes it deliciously smooth, velvety in texture and free from lumps.

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Look for the Diamond

Let us send you our free booklet, "Frozen Dainties." A postal card will bring it.



The White Mountain Freezer Co. Dept. Y, Nashua, N. H.

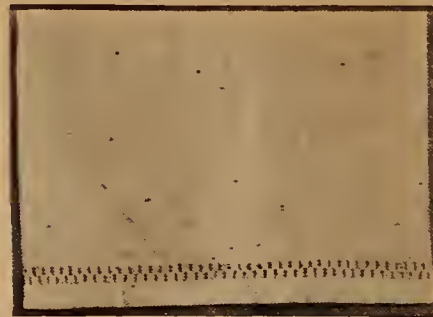
IT IS the ambition of every woman of to-day, whether she lives in the town or the country, to have in her household closet a number of pretty towels for the use of her guests. These towels are adorned with many kinds of needle-work, some with embroidery and some with crochet.

A new way to beautify a towel is to draw the threads over the hem and darn the threads in what is known as Swedish weaving. The detail picture shows how this is done. Draw the threads as usual for drawn-work, making the open space about one and one-half inches wide, although it really may be made any width the needlewoman wishes to have it, from one-half inch to two inches.

Doing the Hemstitching

After the threads are drawn, the hem should be hemstitched down, and the other edge of the open space should be worked in the same way. All our readers may not know how to hemstitch. This work is done as follows:

Baste the hem in position, and when that is done begin to hemstitch at the left end, with the wrong side and also the fold of the hem toward the worker. Use strong thread and catch it in the left end of the hem, catching the latter down with a stitch.



An attractive guest towel



Detail of Swedish weaving

Take four or five of the drawn threads on the needle, passing the latter from

right to left. Pull through and make a buttonhole-stitch at the right of the threads, catching it through all three thicknesses of hem. Take the next four or five drawn threads on the needle, make a buttonhole-stitch as before, and so continue until the right end of the hem is reached.

Work along the other edge of the open space in the same way, through one thickness of the material, and clustering together the same threads clustered together on the hem edge. When this has been done the threads are ready for the weaving.

For the purpose a coarse linen spool thread, about No. 40, is prettiest.

How to Weave

Catch the thread in the hem, between the fourth and fifth clusters from the left end. Darn in and out, under one cluster and over the next, to the left end, turn, and darn along the same four clusters, putting the needle under those darned over before. Continue to darn back and forth in this way, until the center of the width of the space is reached. Darn each four clusters across the width of the towel in this way, then darn the clusters of the other half, taking two clusters from each group of the first series.

IN FRONTENAC CAVE

[CONTINUED FROM PAGE 16]

"He used to be one of the Liverpool gang," answered the Captain excitedly. "We're all right—we're in Frontenac Cave sure enough. I knew Gilbert Dauphin on the river as an honest boy. Then he took to drink, and lots of it, and robbed a man to get more, and went to State's prison, and got in with Liverpool since that. We'll soon find them now, Jud."

"But if so what can we do?" I asked. "Slip around them and get out, of course. That's all we came in to do, you know—find them and get out."

We kept pressing on, though, as it was all new to us and our poor candle seemed to give no light at all in the large rooms, we often went wrong and found ourselves stopped at the end of a passage by a wall or a pit and had to go back. So we got on slow, and I felt my enthusiasm dying and the old faintness and weakness coming over me. Twice more we saw GIL DAUPHIN WAS HEAR, and once this:

GIL DAUPHIN
HIS CAVE.

"I wonder why we don't see the names of any of the others," I said.

"Ah, they're not the men that would bother with writing their names. It's very like Gil, though. He was ever simple-witted, and some said he was half foolish; but that was not so. I suppose he was bad enough for it, but still I was surprised when I heard that he had joined the Liverpool gang. I thought he seemed more cut out for quieter kinds of crime. I never thought Gil Dauphin was so bad at heart, but he was a drunkard and fell into bad company, of course, when he took to drink."

We went on and on, myself growing fainter all the time, but the Captain never losing his new hope. We saw dimly many monster stalactites and stalagmites, and twice heard waterfalls, though muffled as if far off. Once I was like to stumble over the edge of a great hole, but the Captain caught my arm and pulled me back. Soon after we came to a passage which led to the right, and as it seemed large we followed it. It soon grew lower, and we could scarce stand upright, then it turned sharply to the left, grew higher and broader and went up hill for a few yards. The Captain was ahead carrying the light. Suddenly he stopped and, reaching back, drew me up and exclaimed:

"See there, Jud!"

I looked down into a great pit and out the other side of it and, the lower part being eaten away, saw a fire between two rocks. It was just beyond a quiet stream of water, and seemed well covered with ashes, as if to keep it, but the coals glowed through in the pitchy darkness, and a little blaze danced around the top and

lit up the pit and shone in the water. The top of the gnawed-away side of the pit shut off our view so that we could not see four feet beyond the fire even when we lay down and hung our hands over the water, which seemed a good thirty feet below. I could feel the Captain's hand tremble on my arm, and I'm sure my own head reeled with the excitement.

"That means somebody," he whispered hoarsely in my ear. "That means we've found those murderous wretches. That means we're going to get out. That fire means food!" He had been whispering for fear of being heard, but the word food blotted everything else out of the old man's mind, and he shouted with all his remaining strength: "Hello, there! We're starving—starving, I say!" His voice echoed and re-echoed in the great black dome above us and brought a hundred bats coasting down on the darkness and zigzagging about our heads. But there was no other reply, though he called again and again, and we waited for a long while.

It was hopeless to think of getting down the pit, for at best the sides were straight up and down, and mostly they slanted under. Besides, the tunnel ended with the edge of the pit, and there was no footing on any of the other sides.

"We must get down to that fire, Jud," exclaimed the Captain. "It means food!"

For half an hour we searched for a passage down, but found none, though there were many large rooms near. Then we again stopped on the edge of the pit above the fire.

"We must go back and get the rope and let ourselves down," said the Captain. "Our candle will not last longer than the time it will take to do this, and we must get down before that is gone. You stay here and I will fetch it."

"Let me go," I said. "You went back after the gun—it's my turn. You have not the strength to go, anyhow."

"I'm afraid I haven't," I answered, for I felt hardly able to rise.

"I can get it, Jud," he cried. "You stay here. We'll get down to the fire and the food!"

He started away almost on a run with the little blaze of the candle clinging to the wick like a flag. I watched the point of flame as he hurried along a low tunnel which led straight back toward where we had come from. I caught the faint outline of a thick pillar as he turned round it; then I saw the light go down suddenly and next fly a dozen feet to one side, and the Captain's hand which had thrown it sweep over the other way as he rolled on the ground. I leaped up, and there came a deep, muffled splash and I knew he had gone over the edge of a pit into deep water below.

The candle had gone out when it struck the ground, so I dropped to my hands and knees and crept inch by inch through the darkness, feeling for the edge of the pit. The commotion had started the bats, and twice I felt them fan my face with their skinny wings. At last my hand went over the edge of the pit and I called again and again, but got only echoes and more bats in reply. Then I began a search for the candle. How long I felt about that wet and rocky floor I know not, but it seemed hours, often coming up to the pit and putting one hand suddenly over. But at last I found the candle near the pillar, and lit it and went away through the long cave for the rope.

Half the way, I think, I crept on my hands and knees. I went by our bedroom and heard the strange thump, thump, which now filled the tunnel at the side. On I hurried till I came to the foot of the steep tunnel leading to the sink-hole. I looked on the ledge for the rope, where I had seen it when I got the gun; but it was gone.

I need not say that I was astonished. The candle was down to the last inch, and the melted tallow was running over and hardening on my fingers. I could only hurry back to the pit where the Captain had gone over. Here (and I speak within due bounds), I was even more astonished.

[CONTINUED IN NEXT ISSUE]

BOYS! GET THIS AIR-RIFLE

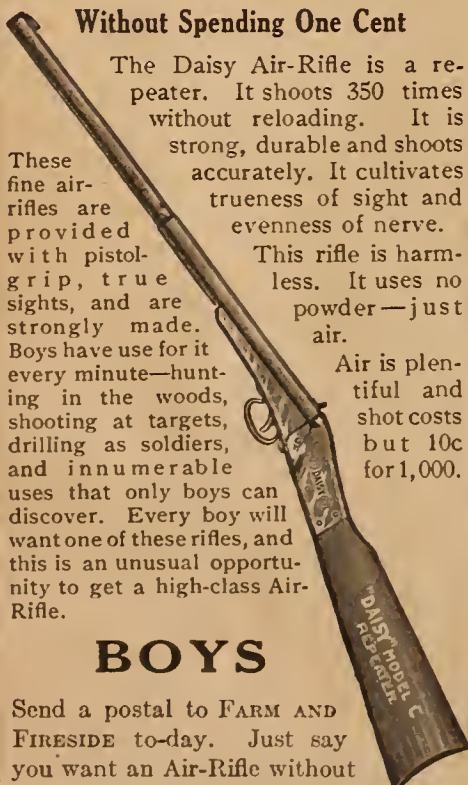
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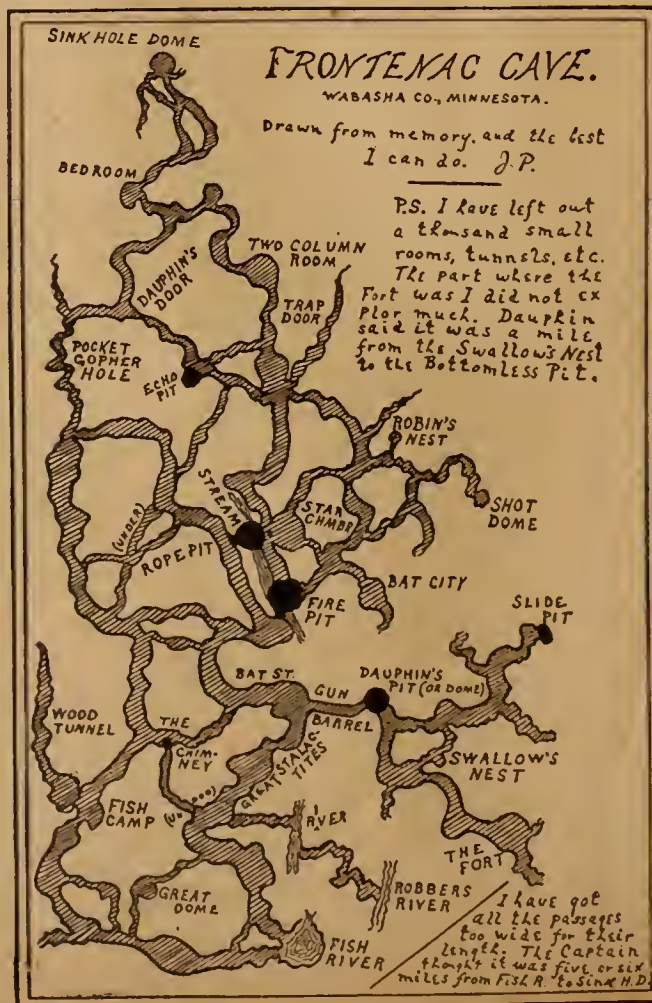
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Summer-Time Fashions

And a Dressmaking Lesson Telling How to Make a Draped Skirt



No. 2209—Short-Sleeved One-Piece French Dress

2 to 6 years. Quantity of material required for medium size, or 4 years, three and three-fourths yards of twenty-four-inch material, or two yards of thirty-six-inch material. Price of pattern for this dress is ten cents



No. 2301—Nightgown with Front Yoke: Sleeves in Two Styles

32, 36, 40 and 44 bust. Material for 36-inch bust, three and seven-eighths yards of forty-four-inch material. For three-quarter sleeves, one-fourth yard more of forty-four-inch material will be required. Price of this pattern, ten cents



No. 2307—Box-Plaited One-Piece Dress with Hat

2 to 12 years. Material for 8 years, three and one-half yards of thirty-two-inch material, with three eighths of a yard of twenty-seven-inch material for hat and three eighths of a yard for facing. Price of this pattern is ten cents

ALMOST all the new skirts now are in draped effect. Even the tailor-made suit skirt shows some suggestion of drapery, while the afternoon and evening costumes have decided drapery both in the front and back. The skirt illustrated on this page (pattern No. 2256) is just enough draped to be very graceful. It is suitable for a number of different materials, and this lesson tells just how to make it. The pattern No. 2256, Draped Skirt With or Without Inset, is cut in seven sizes, for 22, 24, 26, 28, 30, 32 and 34 inch waist measures. The pattern envelope contains six pieces, which are lettered as follows: the right side of front E, the left side of front M, the back H, the inset I, the trimming-band N and the belt A. These letters are perforated through the different parts of the pattern to identify them and make it impossible for anyone to confuse one piece for another.

You will have to be particularly careful about cutting out the skirt, because it is not cut double like most skirts. The pattern is given for both sides of the front (which are entirely different), and only one piece is to be cut for each side. It would be a good idea to smooth all the wrinkles from the tissue and then place the patterns of the two fronts flat on the table. Place them so the front edges with the two notches face each other. Then write on the side of the pattern that is up, "this side up." You will know when you are placing the pattern on the material that the marked side must be up, and then you cannot possibly make a mistake in cutting. Place these pieces with the line of large round perforations in each piece lengthwise of the goods.

The inset, band and belt are placed on the material in the same manner. Lay the back with the edge marked by triple crosses (XXX) on a lengthwise fold of the material. Be sure to mark all the little perforations and cut out the notches carefully before removing the pattern-pieces from the material.

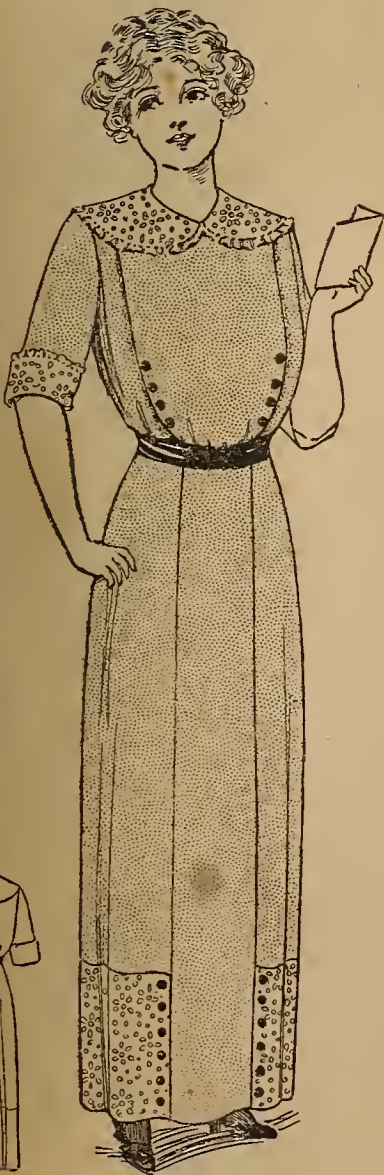
To MAKE THE SKIRT: First form the plaits in the fronts by placing each cross on the large round perforation directly above it. There are four plaits in each front. They are of irregular depth. Baste the under edges of the plaits closely to the front edge to make an even seam line on each side. Now join the fronts and join the back to the fronts as notched. Finish a placket at the left side of back seam as far as the single notch.

line of small round perforations. A simple design in soutache braid would be satisfactory.

When this braiding is used, an attractive finish may be given by braiding the band in the same design. If you use contrasting material for the inset, the band may be of the same fabric, or of the material of the skirt and just piped.

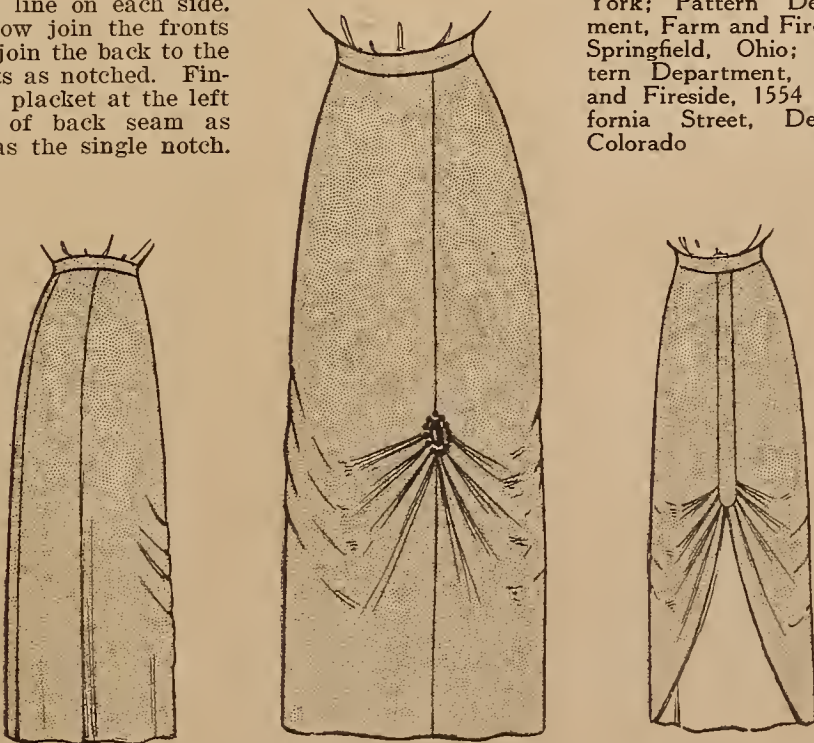
The skirt without an inset may have the front seam open from three to eight inches to show a petticoat of bright-colored satin.

ORDER patterns from the nearest of the three following pattern depots: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 1554 California Street, Denver, Colorado



No. 2303—Short-Sleeved Waist with Flat Collar

32 to 40 bust. Material for 36-inch bust, one and one-half yards of thirty-six-inch material, three eighths of a yard of thirty-six-inch lace for collar and cuffs, and one-fourth yard of thirty-inch silk for girdle. The price of this pattern is ten cents



No. 2256—Draped Skirt With or Without Inset

22 to 34 inch waist. Material for 26-inch waist, four yards of thirty-six-inch material, with three fourths of a yard of contrasting material for inset. Width of skirt at bottom, in medium size, two and one-eighth yards. The price of this adaptable skirt pattern is ten cents



No. 2287—Bretelle Waist: Three-Quarter Sleeves

32 to 46 bust. Material for 36-inch bust, two and one-eighth yards of thirty-six-inch material, five eighths of a yard of thirty-six-inch lace or embroidery and five eighths of a yard of contrasting material. The price of this pattern is ten cents

No. 2304—Five-Gored Skirt with Foot Band

22 to 30 waist. Material for 26-inch waist, three and three-fourths yards of thirty-six-inch material, with one-half yard for band. Width in medium size, two and one-fourth yards. Pattern, ten cents

No. 2288—Five-Gored Skirt: Plain Front Panel

22 to 36 waist. Material for 26-inch waist, three and three-eighths yards of thirty-six-inch material. Width of skirt in medium size, two and one-fourth yards. The price of this pattern is ten cents



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Week-Day Dinners on the Farm

By Jessie V. K. Burchard

IN COMPILING these menus I have tried to make the meals simple in preparation, nourishing and satisfying. There is so much extra work for the farm housewife in the spring, and the men folks bring such phenomenal appetites in from the fields, that it often seems to the distracted mistress of the kitchen that she hardly gets time to draw a full breath from daylight till dusk.

On the first Monday the ham steaks are cut about an inch thick, placed in an iron spider and covered with boiling water; a close-fitting lid is put on the pan, and the meat slowly steamed for half an hour or longer. Then the lid is removed, and the meat broiled.

Creamed potatoes and spinach make good accompaniments for this. I wonder if everyone knows this easy and successful way of preparing spinach. After it is thoroughly washed and picked over, put it into a saucepan, with no more water than clings to the leaves. Place over a moderate heat, and stir often. As soon as it is heated through, it will require only a few minutes to cook. Let drain in a sieve, then return to the pan, and season with salt and pepper, butter and a little thick cream. This will be a bright green color, and

In the average farm home dinners are given an unnecessary amount of variety, entailing endless work for the housewife. The dinner menus on this page are contributed by Mrs. Jessie V. K. Burchard, an expert and practical housekeeper with a thorough knowledge of new, scientific methods. The meals suggested are simple and easily prepared, yet contain all the nourishment needed by working men and women and are thoroughly satisfying. Mrs. Burchard will be a regular contributor to our columns, furnishing recipes for dishes that are both wholesome and good to eat.

- Monday**
Ham Steaks
Spinach
Creamed Potatoes
Huckleberries and Cream
- Tuesday**
Chicken Stew with Dumplings
Cole-Slaw
Potatoes Boiled in Their Skins
Strawberry Pie
- Wednesday**
Scalloped Macaroni with Meat
Mashed Carrots and Turnips
Lettuce-and-Egg Salad
Rothe Gruetze
- Thursday (Oven Dinner)**
Meat Loaf
Potatoes Baked with Meat
Scalloped Tomatoes
Blackberry Roly-Poly
- Friday**
Salmon Loaf, Drawn Butter
Boiled Potatoes
Creamed Early Cabbage
Cherry Puffs

pepper, butter, parsley and, if liked, a little chopped onion. Spread this stuffing on the steak, roll it up, and secure with small skewers or wooden tooth-picks. Put the meat in a casserole or a deep earthen dish, add a little water, and bake in a slow oven three or four hours, or until perfectly tender. A little more water may be added from time to time, if needed, and when the steak is done, it should be lifted to a platter, and gravy made in the casserole.

With the cold sliced ham on Thursday, Italian macaroni is nice. Boil macaroni or spaghetti, and let it drain. Take a large spoonful of bacon fat, and melt it in a frying-pan, cut up a couple of onions very fine, and fry to a golden brown in the fat, being careful not to let them burn. Now stir in a level spoonful of flour, and mix thoroughly, then add the thin part of a can of tomatoes, and should the sauce seem too thick after it cooks, a little water may be added to thin it. Season with salt and pepper, a good pinch of cloves and some paprika, put in the macaroni, and heat thoroughly. Many people like the addition of grated cheese, but it is very good without it.

The stuffed cabbage for Friday is originally a German dish, and is economical as well as palatable, for the remnants of the steak and scraps of the baked ham may be used to make the stuffing. Take a large, fine head of cabbage, wash and trim it, and parboil it in salted water for ten minutes. Then remove it to a sieve, and let drain thoroughly. Carefully lay the outside layers back without breaking, and with a sharp knife cut out all the heart. Have ready a good forcemeat of the chopped meat, the stuffing of the steak, some soaked bread, as in the meat loaf, an egg, add any gravy there may be to moisten it, season nicely, and stuff the space in the center of the cabbage. Then lay the leaves back, one by one, putting some of the forcemeat between, and when all are in place fasten the cabbage compactly into its original shape with skewers or wooden toothpicks, or tie it firmly with string, and cook in a steamer over boiling water until the cabbage is thoroughly done. Drain, and serve with drawn butter, or alone, if preferred.

The potatoes to scallop should be sliced thin and parboiled for three minutes. Drain, and put in layers in a buttered baking-dish, seasoning each layer with salt and pepper, some dots of butter and some chopped onion or celery, or both. Pour enough milk in to nearly cover the potatoes, and bake, closely covered, till done, then remove the cover, and allow the potatoes to brown.

To make the spring salad, cut lettuce-leaves into ribbons with the scissors, slice red radishes thin, and cut green onions into small pieces. Mix all with a good dressing, sprinkle with chopped parsley, and serve.

On Saturday put through the chopper any fragments of ham that are still remaining, boil some eggs hard, and make a good white sauce. Butter a baking-



The Salmon Loaf is a good dish for Friday's dinner

retains all its own good flavor, and when garnished with halves of hard-boiled eggs it looks nearly as good as it tastes.

The huckleberries are merely washed and picked over carefully, and are delicious served with sugar and cream.

On Tuesday the chicken may be cooked in the fireless cooker or on the back of the stove. Before dumping bring it to a brisk boil, add drop dumplings, and cook ten minutes longer.

My idea in suggesting pie for dessert now and then is, first, that it is always a popular dessert with men, and, second, that a few pies may be made on baking day and kept in a cool place, to be served occasionally through the week.

On Wednesday the remains of both chicken and ham are to be put through the chopper and mixed with left-over gravy. Fill a buttered baking-dish with alternate layers of boiled macaroni and the meat mixture, let the top layer be of buttered crumbs, and bake about half an hour in a moderate oven.

Carrots may be boiled in their skins, like beets, then cold water run over them a moment, and the skins will slip off readily. Mashed with an equal quantity of boiled turnips, and well seasoned with salt, pepper and butter, they are very good. A salad of lettuce and slices of hard-boiled eggs, with a plain boiled dressing, is seasonable and very acceptable.

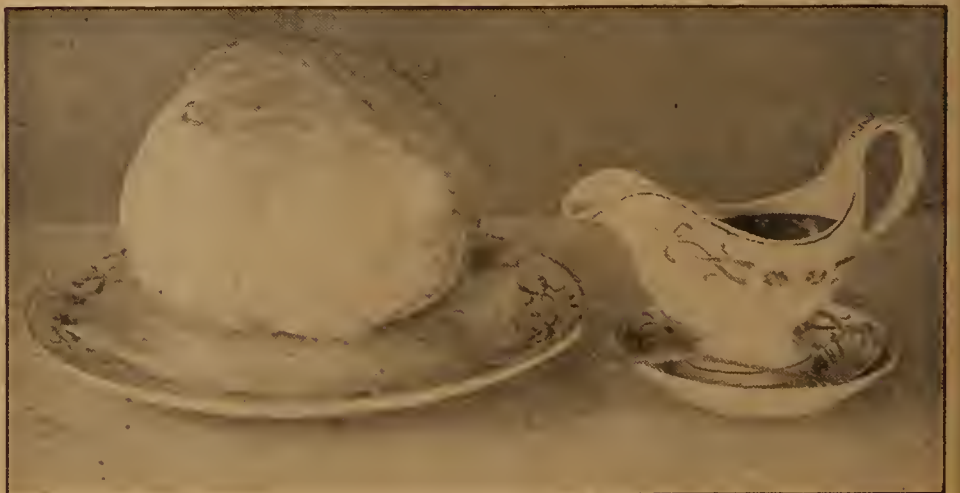
On Thursday the entire dinner, with the exception of the pudding, is to be baked in the oven. The meat loaf is made of a pound of round steak, a pound of veal and a quarter of a pound of salt pork, all ground together. Add several handfuls of stale bread, soaked in cold water and squeezed very dry, two eggs, a little finely chopped parsley, salt and pepper to taste. Form into a loaf, cover with thin slices of bacon, and bake in a moderate oven for nearly two hours. The potatoes should be pared, parboiled for twenty minutes and baked in the pan with the meat for the last hour.

The salmon loaf for Friday is made like the meat loaf, substituting for the meat two small cans of salmon, adding a little milk if the mixture seems dry and steaming for an hour, instead of baking. Boil the cabbage (you may do it overnight in the fireless cooker if you like), put it in a buttered pan in layers with a thick cream sauce, cover with buttered crumbs, and brown in the oven.

There is no better way to cook the tongue for Saturday than in the fireless cooker. The summer kale is cooked about half an hour, with a small piece of bacon.

On the second Monday the salt pork is cut into slices about half an inch thick, boiling water is poured over them and drained off, then they are rolled in flour and fried till very crisp and brown. Pour

- Saturday**
Boiled Tongue
Mashed Potatoes
Raspberry Pie
- Monday**
Fried Salt Pork with Cream Gravy
Baked Potatoes
Lemon Pie
- Tuesday**
Baked Ham
Baked Macaroni in Cream Sauce
String-Beans
Blackberry Mush
- Wednesday**
Stuffed Round Steak
Lettuce-and-Cucumber Salad
Cherry Pie
- Thursday**
Sliced Cold Ham
Italian Macaroni
Corn on the Ear
Raspberries and Cream
- Friday**
Stuffed Cabbage
Scalloped Potatoes
Baked Custard
- Saturday**
Scalloped Ham and Eggs
Potato Puff
Huckleberry Pie



Stuffed Cabbage is a German dish

off some of the fat in the pan, mix flour with the rest to form a paste, and add enough rich milk to make a nice gravy.

The finest baked ham is not boiled first, but is soaked overnight, and in the morning dried and nicely trimmed. Make a dough of flour and water, roll it to an inch thick, lay the ham on it, and cover well with the paste, pinching the edges tight together. Bake in a moderate oven for five or six hours. The skin will come off with the dough, and the meat will be juicy and delicious. The string-beans should be cooked with a little piece of bacon, and must be well cooked—an hour is none too long.

On Wednesday have a large thin piece of round steak. Prepare a good bread stuffing, seasoned nicely with salt and

dish, put in a layer of sauce, then a layer of ham, then another layer of sauce, then one of eggs cut up fine, and so on till the dish is full, letting the last layer be of sauce. Cover with buttered crumbs, and bake in a moderate oven for half an hour. The potato puff is made of mashed potatoes with beaten yolks of eggs added; season, and fold in the whites of the eggs beaten to a very stiff froth. Pile lightly into a baking-dish, and brown in the oven.

It has been my idea that when the oven is to be used for one dish it is easy to plan another, or even two, to be baked at the same time. Frequently left-overs may be used for supper, and in a subsequent article some supper menus will be given, also ideas for simple breakfasts.

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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, JULY 19, 1913



Maud Muller Up-to-Date

THE EDITOR'S
BULLETIN OF BETTER
THINGS COMING

WITH THE EDITOR

ADVERTISEMENTS
IN FARM AND FIRESIDE
ARE GUARANTEED

Cover Design

"The Invitation" is the title of the next cover, and the title expresses exactly what the cover pictures and talks about. Whether or not you have taken a vacation this year, last year or for several years, this cover will appeal to you.

Special Articles

This issue the Old Settlers tell their stories. In the next issue those who are looking for homes or who have looked for homes in new lands will tell of their home-seeking successes and failures. There will also appear an illustrated story of how electricity is made valuable on the farm—perhaps we should say how electricity is possible for farm work. At this time, too little of this power is employed on the average farm.

The Headwork Shop

Headwork Shop ideas never decrease in number as long as farming remains profitable. Profitable farming means the use of the head to save the feet. The horseshoe contest which closed several days ago is now being considered by the editors, and in the near future you may look for an interesting page from these letters.

Crops and Soils

One writer states that the hay-tedder has been of very great value to him; in the next issue he tells why. Another writer gives his experience during the thrashing season. These experiences have in them a great deal of value from the practical standpoint.

Farm Notes

Dynamite can be used on the farm to greater advantage if a working knowledge of the explosive is possessed. One reader who has used dynamite adds his experience to the knowledge of others. Another writer of experience tells of a device which can be used for many purposes on the farm. He thus gives another way to use power on the farm.

Garden and Orchard

It is now time to begin planning for the greenhouse work of the coming season. For that reason some principles affecting greenhouse work will be presented in this department in the issue of August 2d.

Not Too Late

The third instalment of our serial, "In Frontenac Cave," appears in this issue, but it is not too late to begin reading it if you have not already begun. What or who carried the rope belonging to the Captain and Judson so far, and who was it Judson stumbled over in the Star Chamber? It ought to have been one of the Liverpool gang, but it seemed rather to be an enemy of theirs. There will be another instalment of the story, even more exciting, in the next issue of FARM AND FIRESIDE.

Recipes

There was once a little girl who said that she liked "fluffy" desserts. Mrs. Burchard has prepared some fluffy peach recipes for all who agree with her.

Fashions

Miss Gould will show us how to dress coolly and yet look our daintiest. Evaline Holbrook will tell us how to crochet light caps for babies.

For Our Children

And the children shall read of the crown which Mandy wore when she earned her ticket to the circus.

Sunday Thoughts

For the quiet hour of Sunday there will be some thoughts about the power of personal influence, and Dr. John Clarke Hill will talk to us about the "Gospel of Mirth."

A Parting of the Ways

Just as soon as progress in any line starts, we develop people in two lines. The people who want progress and look forward to new things develop into progressives. The people that have pretty good cards in the present game and are doing pretty well now, thank you, look at their hands and say, "We stand pat!" That is, they become standpatters.

That's what is happening in the poultry business. The poultry "fanciers" are dividing into progressives and standpatters. They have been breeding—most of them—on the theory that fine feathers make fine birds. They have been fiddling and fooling with problems of "double mating" and "single mating," of exhibition birds judged purely on their outward appearance, of the expediency of breeding for feathers only, or of letting the idea of utility seep in on the side.

And now they are confronted by the fact that the utility breeders of Australia and England have been breeding for laying, and have beaten them—as, of course, they would do, if breeding for a particular thing is surer to get it than breeding for something else.

The egg-laying contests in Missouri and Connecticut have developed these facts. And now comes Mr. Robinson of *Farm Poultry*, published in Boston, in an editorial, entitled "Cut the Laying Competitions Out." He says nothing very definite against the egg-laying contests, but a good deal that is indefinite. "A laying competition at an agricultural college or experiment station," says this editor, "is a sad spectacle—a degradation of high functions to superfluous work, of large facilities to trivial matters, and a prostitution of service that should be on a strictly educational and scientific basis for the exploitation of individual interests."

People Want Eggs

Just the opposite, Mr. Robinson! The breeding of chickens for feathers and conformation is the trivial thing. The present methods of judging and growing fowls to please the eyes only of the "fanciers" is the superfluous thing. The expenditure of public money and the energies of experiment-station workers on these things is the real prostitution of high functions and large facilities.

No work of a higher scientific character or of more general utility has ever been done in poultry than that of Dr. Raymond Pearl of the Maine station. He has taught the world how extraordinary laying qualities are inherited. He has given us working plans for improving the laying qualities of our poultry. Nothing that has ever been done in grain-breeding, or any other plant improvement is more important economically. And the laying contests are to be the forums in which the correctness of these principles are to be established by incontrovertible statistics.

Of course it is easy to see why the standpatters in breeding object to all this. It puts their whole system of breeding up in the air. It blazons before the world the fact that was stated in these columns years ago, that there is only one breed of fowls in this country that has been properly bred—and it has been bred for fighting, and not for laying.

Individual Selection Counts

Doctor Pearl's work shows that "mass selection" in building up a laying flock leads nowhere. It has to be individual selection. I don't know of any breed of any sort of animal which has reached great excellence in any respect by mass selection—that is, just selecting the best individuals out of the mass without reference to their pedigrees. Certainly the breeding of hens from the best layers at the Maine station without regard to pedigree of the individual fowls did no good, though carried on for ten years.

Pearl showed, too, that the ability to lay an extraordinary number of eggs is inherited by a hen from its grandmothers through its sire. And feathers, comb, strut, beak and other points in our so-called "judging" have nothing to do with it.

The fact is that the American pure-bred hen is on trial in the laying contests—and she is being convicted. She is a beautiful creature, and she is a better layer, if of a laying breed, than a scrub. But I challenge the breeders of pure-bred laying breeds of poultry to show that their hens are able to lay an egg per year more than the same strains of laying poultry were in the habit of laying forty years ago.

If their progress has been in feathers and shape only, and not in egg-laying, then the whole system of breeding has been a failure from a utility standpoint.

Beauty or Utility?

There are probably five hundred people now engaged in laying the foundation of new flocks of poultry bred scientifically according to the rules which have been found necessary in breeding horses, cattle, dogs and all other finely developed animals—through individual pedigrees tracing descent to ancestors possessing the quality bred for—in this case the ability of the hens to lay an extraordinary number of eggs. In a few years the breeders who still breed for feathers and shape will be outclassed by those who breed for only one thing—eggs. There will be record-books as closely kept as those of the horse and other live-stock breeders.

Of course this will set up new conditions which the present breeders will have to face. Many of them are already facing it. The most of them are trying to keep their birds up to exhibition standard as to outward appearance, and at the same time breed for eggs from extraordinary laying strains, and with individual pedigrees. Maybe they can succeed. If they do, they will have done a fine thing in breeding. But I think it is safe to predict that out of the laying contests, and out of the principles of heredity established by Doctor Pearl and others, will come breeds of laying hens, the breeders of which will pay no more attention to color and conformation than do the breeders of the Pit Games. But they will lay.

The farmers are interested in better laying—whether the hens doing it have any feathers at all or not.

Robert Quinn

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Springfield, Ohio, July 19, 1913

PUBLISHED
BI-WEEKLY

Creamery butter made at the Glenwood Federal Substation in Hawaii sells at an average price of fifty-five cents per pound. As the amount manufactured does not supply the demand even at that price, a co-operative organization is being formed by Hawaiian dairymen to build a larger plant and take over the business on the co-operative plan. The federal creamery was built primarily for demonstration purposes. Now a greater output is needed.

The Value of the Small Farm

THE excitement over the alien land situation points to other features of land tenure than alien ownership. In May the Honorable Thomas U. Sisson, Representative from Mississippi, spoke before the House on the treaty-making powers of the Government and sounded three well-formed convictions in as many sentences. He said:

Next to the alien ownership of all of the land in the United States, the most dangerous condition would be the corporate ownership of our lands.

The land should be preserved for the honest settler, and those of us who now own lands should not be permitted to dispose of them except to individuals who expect to farm the lands themselves or have it done under their specific direction.

It is the history of every country that where land is divided up into small farms, and the man that tills the soil owns it, that country is happy and prosperous.

The tendency of this generation is toward the corporate ownership of farm lands—the intense industrial spirit is back of that tendency. But with the advent of the large farm the farm home disappears, farm life is snuffed out, and we have in its place a big "system" which for the time being may be able to show satisfactory financial results, but which will ultimately mean both financial dissatisfaction and social unrest. The small farm well tilled leads to a contented community; the large farm, even if well cared for, cannot receive the care it should: it results in a complete loss of community life and pride.

A "Boost" for Permanent Floors

EVERY farmer who has kept stock on decaying wood floors and has tried to prevent the seeping of liquid manure and the continuous putrefaction of the filth beneath the flooring knows how impossible it is to keep a dairy barn, a horse-stable, hog-house or other stock-quarters from smelling to heaven, so long as the ordinary wood floors remain.

Heretofore the unsanitary wood or earth floors have received strong objections and criticism, but the actual money loss sustained from the escape of fertility has been mostly estimate and conjecture. Now some convincing testimony in favor of more permanent forms of flooring is available.

Investigation in connection with feeding steers carried on by the Ohio Experiment Station has demonstrated that the value of the manure for each animal was more than four dollars greater when the feeding was done on cement floors than when earth floors were employed. The result would be practically the same were the floors plank if the seepage of the liquid manure were eventually lost through chemical changes and other avenues of escape. The loss would, of course, be much less where the animals are kept under cover and bedding is freely used, thus allowing the mass to be packed into a thick stratum during the winter season.

To make the application clear, the farmer who feeds only a dozen steers could afford to hire eight hundred dollars annually at six per cent. interest and provide a cement-covered floor and yard rather than lose forty-eight dollars' worth of fertility by feeding his animals on an earth floor. A feeder of twenty-five or fifty head of animals on earth or leaky wood floors loses, in plant-food, the price of a good barn in a few years' time.

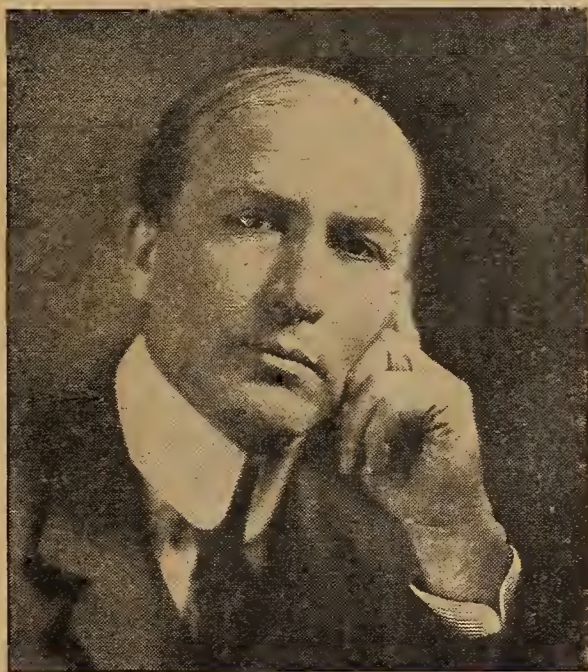
Finger-Prints and Clean Food

DAIRYMEN and milk-dealers of Philadelphia who attended the lectures given by Dr. C. Y. White, the city's chief bacteriologist, have learned to their discomfiture the doctor's finger-print test for dirt and will hereafter go better prepared for the test.

In a recent meeting Doctor White had each man who was in the audience touch a sterile plate covered with a material on which bacteria readily grow, and a few days later showed the results to the same men. The plates were in every case covered with a growth of fungus and bacteria which had developed from the contamination of the first touch.

Three contagious diseases—typhoid fever, scarlet fever and diphtheria—have been traced directly to milk-supplies. But any kind of contamination, whether of contagious nature or not, makes milk a poorer food.

Clean hands, which mean not only free from dirt, but free from dust and sweat as well, go a long way toward clean milk and clean food. And let us be as particular about the things we sell as the things we use at home, and vice versa. The result will be healthier communities and greater satisfaction.



DR. T. N. CARVER stands for a present-day movement of great importance. Doctor Carver is Director of the Rural Organization Service of the United States Department of Agriculture.

The rural-life problems of to-day are known pretty generally because of the publicity given that phase of our development since the report of the Country Life Commission several years ago.

Doctor Carver and his workers are going to strike at some of the fundamentals. He says that his work will not aim to uplift the farmer; the farmer is capable of taking care of himself, providing he has the necessary information in his possession. The Rural Organization Service proposes to make available that information. If genuine facts can be spread among the farmers "the percentage of failure of farmers' organizations," said Doctor Carver to Farm and Fireside, "can be greatly reduced. Organization for organization's sake is the poorest kind of a program, but organization for a clear and worthy object is an excellent program. The marketing of farm products furnishes such a clear and worthy object." Doctor Carver does not intend to limit himself to this one line of work, however. He is going to strike for better methods of meeting the need for credit facilities too. Of course the natural outcome will be more people on the farms of our country; at least more of the people that are there now will stay and become satisfied and useful citizens. Doctor Carver maintains that we ought to "increase the farmer's prosperity as far as possible, and at the same time so increase the attractiveness of country life that the farmers would rather live in the country than in the city." In other words, he does not place economic betterment as the sole goal to work for. Better farms must include better country life.

Denmark has among its many co-operative institutions twenty-one rural electrical substations which supply light and power to farms and rural communities. The stock in the company is apportioned according to the amount of electrical fixtures on each farm or in each village home. One share of stock is allotted for every electric light, and ten shares for every horse-power in motors. The regular central-station rate is charged for the electricity, and the co-operative plants earn over nine per cent. on the capital invested.

The Farmer's Crop-Guards

THE recent passage of the Weeks-McLean law by Congress providing federal protection for birds marks an important recognition of what our bird life can accomplish for agriculture.

Comparatively few people sufficiently realize what it means to have a thousand or two active, keen-eyed guards on each farm working from sun to sun throughout the crop-growing season to save the crops from insect destruction.

If search were made through orchards, windbreaks, hedgerows, pastures, meadows and home grounds on almost any farm where birds have been protected and encouraged, a hundred or so birds' nests would probably be found during the young-rearing season. These would represent at least a possibility of a thousand craws constantly clamoring for insect food during every hour of the long midsummer days.

As examples of bird appetites: a scarlet tanager has been seen to eat thirty-five gipsy-moths per minute for thirty-five consecutive minutes; and many of the warblers have a capacity to consume thousands of plant-lice or similar small insects every hour in the day.

In view of these figures a moment's reckoning will show what a numerous bird population will do for any farm thus protected.

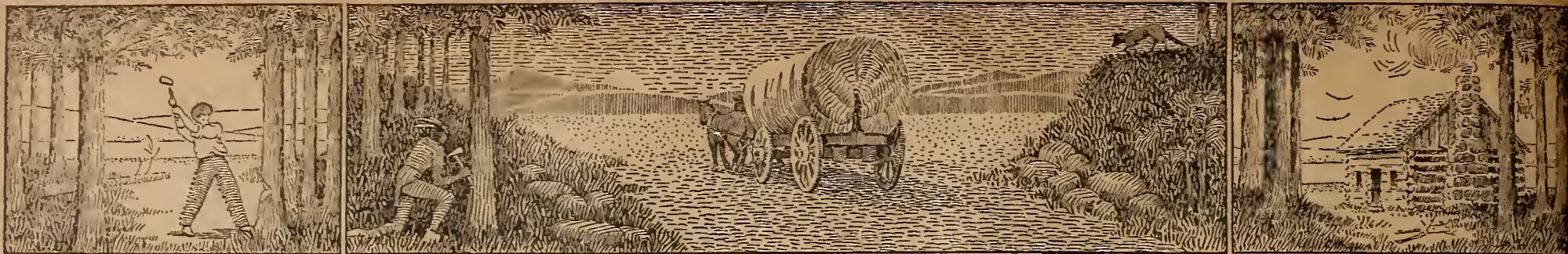
Our bird life has had to undergo extraordinary changes of environment during the past few generations. Changes that have made almost a revolution in the conditions under which many of them had existed for uncounted ages.

The clearing of our vast timbered areas has made orchard and park residents of scores of varieties of birds that were formerly denizens of the virgin forests. Among these are the great families of warblers, vireos, most of the thrushes, fly-catchers, woodpeckers, and others.

This shifting of the haunts of these birds is for the most part a distinct gain to the farmer, since most of the varieties mentioned and many other former wood-dwellers depend almost entirely on destructive insects for subsistence.

Another sweeping change effected by the settlement and cultivation of the prairies and plains was the interruption of the young rearing of the many varieties that nested on the ground. The quail, prairie-chickens, larks, sparrows and bobolinks well illustrate this class of ground-nesting birds. Settlement of this vast territory brought with it constant destruction of bird life from hunters both for game and plumage. But an even greater loss of bird life now results from the millions of marauding cats and dogs distributed wherever man has settled. It is safely within bounds to say that more than half the eggs and young of the ground-nesting and orchard-nesting birds are now destroyed every year by cats and dogs in all thickly populated rural sections and a larger proportion in towns and villages.

Now that we have federal authority for better protection of birds in addition to some valuable state laws for the same purpose, these guardians of our crops can be made a power for crop protection. Game laws will assist if the farmer has a voice in their enactment and enforcement after he has made himself intimately acquainted with the birds themselves.



Friendly Letters from Old Settlers

Nothing Impossible in the Old Days

By Edward P. Owen

HOW little, it is true, does one half of the world know how the other half is living! What would in the East be considered a definite impossibility is the every-day commonplace of the West. The word "impossible" seems to be thrown overboard as an unnecessary nuisance in crossing the Missouri River.

If anyone should have told me, while living in our comfortable eight-room house in Connecticut, that our family of five would put in its first winter out West in a leaky fourteen-by-sixteen-foot log cabin, I should certainly have considered it an impossibility. And yet that statement would be only a part of the whole truth. We more than once entertained guests in our fourteen-by-sixteen-foot "palace," and our third daughter, who is in no way inferior to her Connecticut sisters, was born in that selfsame cabin.

The birthday of the aforesaid "No. 3" was a strenuous day. That morning I drove ten miles to preach at a country schoolhouse, returning at 1 p. m. for dinner. At 3 p. m. I conducted another meeting about a mile from home. At 5:30 p. m. I was driving for the doctor. At 7:30 p. m. all troubles were over, and I was on my way to the church for the evening service. Twenty-five miles of driving, three church services and all necessary arrangements for the arrival of a new member of the family would be a well-filled day from an older settlement standpoint.

Necessity is known to be the mother of invention, and on the frontier the opening for expedients of all kinds are unlimited. The deacon of our church and his brother, each of them fine men but poor, when through filing on their quarter-section of land found their net cash balance was the vast sum of \$15, apiece, with which to build houses for families of five and six respectively. Two dugouts were the result, neither one stylish, but both sufficient for the necessities of a settler accustomed to roughing it.

The deacon, at the end of three short years, died of lung trouble acquired in an eastern State, but his widow with her three little boys "made good," and both families are still on their homesteads.

Poverty is no barrier to successful homesteading in the West. In fact, the rule is notable that those who come with the least capital in a few years have not only struggled to their feet, but have surpassed their more fortunate neighbors. The man who comes to a new country with a bank account finds many ways to spend his money on things not strictly essential.

The great temptation of the West, as indeed everywhere in the United States, is to do things on too grand a scale. Americans as a nation are apt to forget that one acre well cared for will yield a greater net profit than many acres neglected, that one cow well fed is a better investment than ten starving cows.

I have been much pleased with an experiment tried in the winter of 1911-12, when I was a stranger in a new section of Colorado. The summer of 1911 was considered the worst season in the history of the country. Feed was scarce and so high in price that our regular milkman said he could not afford to feed cows and sell milk at any price whatever. I was fortunate in buying a fairly good cow—not an exceptionally heavy milker, but a good butter cow.

I proceeded to feed her about my Connecticut ration of twenty years ago: eight quarts of bran per day and one quart of cottonseed-meal and a moderate amount of roughage (corn-fodder), and on keeping a book account I found I was making my milk at an average price of three cents per quart when milk is worth in our town six to seven cents.

Possibly I am the only person who is blanketing his cow on cold days, and I am perhaps the only one who keeps his cow stabled constantly, carrying water into the stable on cold days, but I find it is best.

One man in this same section of country bought 1,500 head about the same time I bought my one cow. He has thus far lost 600 head on account of being short of feed and almost totally without shelter. There seems to be something about the vast stretches of prairie that tempts a man to do things on a grand scale, but the balance of profits for the large scale is often on the wrong side of the ledger.



Reaping With the "Buzzard Wing"

By S. E. Baker

ABOUT my earliest recollection in a historical way is of a great political campaign meeting. The shout on all sides, of old and young, was "Tippecanoe and Tyler too." My father was in a delegation that attended that great event. The tales told after their return made a deep impression on this boy. One was of an ox, standing on all fours, roasted of course, from which they had lunched.

They had the sport, and General Harrison got the votes. At that time I was only four years of age and clad in a suit of tow linen. If my recollection serves me correctly, every boy was dressed in a linen suit made from home-grown flax.

When the flax came to proper age it was pulled up by the roots, laid in small piles to bleach or rot to another stage, then gathered in and put through a

breaking process. Next it was hauled to get the chives out, then put through other processes until ready for the wheel on which it was spun into thread.

I had one lesson on the grain-hook or sickle, enough to cut a finger half-way off. Progress of the age intervened, and I did not become an expert with the sickle; but it was not many years until I could swing the "buzzard wing" and keep my swath up with anyone, also in mowing grass with the scythe. I could handle either of them, and was never better pleased than to hear someone in the crowd "whet a banter." I could and would answer it, and then it was cut, cut.

All this time progressive genius was at work, and it finally laid our hand tools away. The old grain-cradle and grass-scythe now hang in the barn. The latter comes in quite handy for weeds in fence-corners, but the former is scarcely ever taken down from its hook.

I have always been face to face with hard work. My father settled on a woodland farm in Ohio. Brush and logs had to be removed ere we could make use of the soil. Neighbors in those days were ever ready to help because they, too, were dependent on us for help, but I do think there was a more sociable disposition in people then than there is to-day.



Pioneer Life in Michigan

By John Jackson

MY FATHER moved from New York State to Ottawa County, Michigan, in August, 1846, with his wife and four children. Among the latter was the writer, then only three years of age.

A few scattered settlers had preceded us a few years before, so this section of the State was an almost unbroken wilderness. My father bought 160 acres of land for \$80. All of this land was heavily timbered with maple, beech, elm, basswood and white oak.

After cutting and clearing away some of the timber, with the aid of two or three settlers, and a saw, hammer and ax, a rough log house was soon erected, into which my parents moved their scanty household goods before there was any floor, doors or windows. We lived in this way for some time before my father was able to get lumber from a distant mill to put in a rough floor, some doors and two or three windows.

Before winter set in Father built a log stable for his ox team and one cow. The roof of this stable was covered with what was called "shakes." The shakes were nailed to straight ironwood poles, and when properly put on made a fairly good roof.

The first thing the early settler had to do was to cut down and burn the timber. This was no easy job when the timber was green, but it had to be done.

By working diligently early and late all the first winter, when spring came Father had quite a patch cleared around the house. This was planted to corn and a few potatoes. The corn was planted between the green roots by striking a hoe into the ground, tipping it backward and, after dropping in the corn, removing the hoe and pressing the soil down over the corn with the foot.

The first winter, and in fact for two or three winters, the oxen and cow or cows had to depend principally on "browse" for a living, and when the chopper would fell a tree the cattle would quickly get into the top and devour the fine moss and ends of the tender branches. In summer the cows and oxen, when not in use, roamed the forest, and sometimes would wander a mile or two away, so the pioneer had to listen for the sound of the bell on his own stock, in order to tell in what direction to go to find them.

But few of the pioneers were without rifles, as they had to depend on the game in the forest for their meat-supply, mostly the wild deer, which were very plentiful. And there was no law to prevent their being killed at any time. The wild pigeon, which is now extinct, was often to be found in summer on the pioneer's table to add variety to his meager fare.

The maple-tree furnished the early settlers with all the sugar and syrup for family use, and I can even now almost taste the delicious custard pies and cookies my mother used to make that were sweetened with this product of the forest.

The wants of the pioneers were very simple, and it was sometimes very difficult to even supply these. One or two calico dresses were considered sufficient for the wife or mother for a year, and such a thing as an overcoat or underclothes for the father was not thought of because they could not be afforded. We children had to go barefoot at least six months of the year, and as we slept up-stairs it was no uncommon thing to wake up in the morning with the bed covered with snow which had blown in through the cracks during the night.

Although my parents suffered many privations and discomforts during their pioneer life, yet they were always cheerful and happy because they were looking forward to a better home and greater privileges and comforts for themselves and those dependent upon them. And while they lived to enjoy the realization of their dearest hopes for many years, yet I regret that they could not live long enough to see some of the wonderful things that have now become so common by the use of electricity. What wonderful things are in store for the next generation no one can foresee.

Virginia in the Fifties

By S. Underwood

ABOUT the year 1858 my father purchased and moved onto forty acres of land near Walkersville, West Virginia. It was then Virginia, as the State hadn't been divided. The country was almost a wilderness. One might ride for miles through the timber and not see a house. Still there were old settled places to be found occasionally, but not much land cleared on them. The people seemed to be content with little of this world's goods.

The land was generally poor and hard to cultivate, often hilly and very stony. Mast was plentiful some years. Then the hogs got fat running at large. All the farmer had to do in the fall of the year to have a supply of meat for the next twelve months was to find his porkers. Those hogs often got very wild and had to be hunted with dogs and gun.

A small stream or creek ran through our place. There was a little level land bordering it. This we called the bottom. I presume there were between one and two acres of it. After living out West several years on the wide and level prairies and then going back to visit relatives, this level land we prided ourselves on owning looked about wide enough for a good wagon-road.

The first few years in our new home we had to go to mill on horseback, sometimes as far as ten miles, through woods, and often the road wasn't much more than a cattle-trail. The miller would take one eighth of the grain for toll for grinding our grist. The mills were usually run by water-power, and the machinery consisted mainly of a water-wheel and a pair of bur-stones. There was but one pair of burs, and he would grind both wheat and corn on them, principally the latter, for but little of the former was raised. Father kept a few sheep, and Mother, with the help of us children, would card and spin the wool into yarn and weave it into cloth for our garments. Factory-made clothing was costly, and few could afford to buy it.

The young people of the neighborhood would have parties at each other's houses in the fall and winter months. The host for the evening would have apples to pare and core. If these were scarce he might substitute something else to employ the guests for a short time.

When the work was laid aside the fun would begin. It generally consisted of some little play to amuse one another. Often the visitors would stay far into the night. People were poor, but generally honest and hospitable.

After all the world isn't as unequally divided when it comes to true and real pleasure as some would have us believe.



Old Settlers' Farm Machinery

By D. F. Smith

I WILL tell you of the farm machinery with which I labored in my early boyhood days. My first experience occurred when given a hoe made by a local blacksmith. It was of iron hammered thin, and with an eye welded in the upper part, to which was fastened a rough handle. It was a clumsy affair, and though the dirt had to be cleaned from it frequently, it was a decided success as a promoter of backache.

At twelve years of age I was introduced to a plow that for an exhauster of patience beat the hoe by a large margin. It was composed of a wooden beam, a wooden land-side and a wooden mold-board, with an iron point made by a local blacksmith. With a yoke of oxen attached, I started to plow, and did manage to keep the unwieldy thing in the ground a part of the time, but it was out of the ground much of the time. The wooden mold-board would load up with dirt and often had to be cleaned off.

Father came along and said I was not much of a farmer and I did not know enough to plow, which was good news to my aching back and limbs. In order to instruct me he took hold of the plow, but in spite of his struggles and superior knowledge and remarks more pointed than I have given them the old plow would clog with dirt and prefer to slide along on the surface instead of underground.

Father took the plow to a blacksmith and had the outside of the mold-board covered with strap iron, which was considered a wonderful improvement.

My first rake was a heavy, clumsy affair with a crooked stick for a handle, and my fork to pitch hay was a crooked stick also. True, we had iron forks made by local blacksmiths, not steel, but boys were not allowed to use them, as the tines were easily bent, and even men when pitching hay often had to straighten them.

Our grain was cut with a hand sickle or mowed with a common scythe, and was thrashed in the winter with a flail consisting of a handle about five feet long and a swingle three feet long attached with a leather strap.

Our first thrashing-machine was a cylinder firmly fastened in the barn floor. A huge belt was attached to it and extended out to a pulley attached to a three-horsepower in the yard. The horses traveled in a circle. It thrashed the grain well, but did not separate it from the chaff; that was done later by either hand fans or a fanning-mill.

Making the Modern Barrel

How to Select the Different Grades of Barrels and Barrel Materials

By Leon Miller

THE barrel is an ancient as well as modern carrier. It was described in history four thousand years ago. At any rate the barrel is our friend and has proven itself one of the greatest factors in commerce, because: it is strong, it is economical, it protects its contents, it is sanitary, it is convenient to handle and is the only package that is known where one man can handle from forty to one thousand pounds successfully. It can be reused again and again, and as a second-hand package, is an asset of sixty per cent. of its first cost. Therefore, the barrel is cheaper than the box, bag or package, which is practically valueless after first use. Just as long as there is a stick or tree four inches in diameter, there will be barrels.

I wish to impress upon the minds of the barrel-users facts about the barrel that should be known in order to save money and time—the stuff from which commercial life is made. Ninety per cent. of the barrel-users are a century behind the time in comparison with other similar necessities. The modern barrel is made by modern machinery, and it is a better and more uniform barrel, as well as cheaper, than the old hand-made kind. Machine-made barrels are easier headed up than the hand-made barrel, and the heads are interchangeable, as every barrel is exactly the same size.

This is impossible with a hand-made barrel, unless one is fortunate enough to get exceptional heading.

There are four rough classifications of barrels and barrel materials. They are made-up, nested, and knock-down barrels and cooperage stock to be made by hand or machinery. Made-up barrels are ready to fill. The nested barrels are made up and then the three hoops taken off one end to allow one barrel to fit inside of another, making it possible to ship from six hundred to eight hundred in a car, affording a wonderful saving in freight, as five hundred and fifty of these barrels will take about the same rate of freight as three hundred and fifty made-up barrels. Nested barrels, when in the orchard, can be hooped and are ready to fill. These hoops can be put on about as quickly as you can unhead the headed barrels. Another advantage in the nested barrels over the made-up barrels is that you can haul about twice as many in a load from the station, a big saving where the distance is a consideration. These barrels are made only by the most up-to-date machine-barrel plants.

The improved knock-down barrel marks a new epoch in barrel-making. It can be shipped in lots of two thousand to five thousand in a car, and as low as five hundred in local shipments under a new order whereby the railroads will place and ship a car containing five thousand pounds. These barrels are made up heated, chamfered and crozed and then knocked down. The staves are a set for each barrel, the hoops and heads are bundles by themselves, but will fit any barrel. An improved setting-up form is supplied with each shipment by reliable manufacturers.

Fifty to Seventy-Five Barrels per Day

A hoop-nailing machine can be bought for about thirty dollars and will last a lifetime. With this machine the hoops can be measured and nailed correctly, as they cannot be nailed any other way. These barrels can be made successfully only by special machinery, and then the staves can be put anywhere in the form. With hand-made or ordinary crozing machinery, the staves must be put back in their original place on the barrel when set up. A boy can put up these barrels successfully, and can complete from fifty to seventy-five a day, after he becomes experienced. Knock-down barrels cost from twenty-five to twenty-eight cents each f. o. b. the factory. They can be delivered at from two to four cents. Knock-down barrels are as simple to put up as boxes. They can be made in any factory, without interference with fire insurance regulations, as no stoves are required nor wood shavings, nor dirt made.

In making barrels from cooperage stock, such as staves, heading and hoops, an experienced cooper is employed, while knock-down barrels are made by inexperienced help.

The most profitable way to get barrels made at the orchard or factory in cases where ten thousand or fifteen thousand are used each season is to buy the cooperage stock, either in the staves, heads and hoops; knock-down, or chamfered and crozed staves. Chamfered and crozed staves can be secured straight or shaped. No stove is required when using shaped staves. In making ten thousand or fifteen thousand barrels, one must have a small shop at least twenty by twenty feet for hand work. More space will be required when machinery is used. A set of barrel-making tools will cost about eighty-five dollars. It consists of a barrel heater and pipe, a hoop-nailing machine (this machine can be omitted if an experienced cooper is employed), two sets of truss hoops, and some small cooper's tools.

It is imperative to have good, dry stock and to get in touch with good, reliable stave, heading and hoop firms.

When you find these firms it pays to stick to them as long as they render good service, as there is very little difference in prices among the different supply houses, providing the material supplied is good.

There are many kinds of cooperage stock; at least five or six grades. The class should always be mentioned when ordering, so that the shipper will know what you want, and he will then ship what you ordered. The common grades of cooperage stock are known as:

Staves—No. 1.
 “ No. 1, Mill Run.
 “ No. 2, Mill Run.
 “ Meal.
 “ No. 2, Meals In.
 “ No. 2, Meals Out or No. 3.
 “ Mill Run, cut 6 to 2. These are usually used for fruit-barrels, and are somewhat thinner than standard.

Heading—No. 1.
 “ No. 1, Mill Run.
 “ No. 2, Mill Run.
 “ No. 2.
 “ No. 2, Low Grade, usually hard wood.

Hoops—No. 1.
 “ No. 1, Low Grade.

Just What to Do to Make Good Barrels

When a stave is cut “six to two” it simply means that six staves are cut from a two-inch bolt. Such staves are used for fruit-barrels or other light require-

the “six to two,” except five staves are cut to two inches. This grade of staves is never jointed on a 9/16 joint, unless ordered so. The cheapest and what is generally used by apple-growers is No. 2 with meals in.

The No. 1 staves are the choice, taken from the run of the mill, leaving the No. 2 with meals in. The No. 2 with meals out are the very best No. 2. The mill run is the run of the mill, with dead culls out.

Since a large number of barrel-users are making their own barrels without the aid of experienced coopers, the chamfered and crozed staves have taken an important part. These staves are chamfered and crozed at the mill and are ready to set up, hoop and head off. They usually cost from fifty cents to a dollar more per one thousand than ordinary staves. These staves are successfully made without the aid of experienced coopers. Seventeen-year-old boys have made them successfully.

In buying heading, order kiln-dried stock, as a great many air-dried heads are being offered at attractive prices, but these should never be bought for cracker-barrels or barrels that are to be used in a steam-heated building, or in fact any heated building, as these headings will dry out. For apple-barrels these headings are satisfactory, so long as they are being used as fast as the barrels are made. Heading usually comes in grades; namely, No. 1 mill run, No. 2 and low grade

No. 2, in hard wood. The No. 2 grade is used for cracker-barrels and similar purposes, but some users prefer mill run. The price is about one cent higher on the mill run. No. 1 heading is used mostly for No. 1 flour-barrels. Heading usually comes in the following wood: hard wood (maple, beech and birch), gum, chestnut, poplar and basswood. The soft wood is preferred by some of the cracker-barrel users, owing to the lightness in weight, but where these soft-wood headings are used, great care must be exercised in heading. For apple and cracker barrels 17½-inch heads are about standard.

Hoops are generally sold in No. 1 elm, but several southern mills are making oak hoops. For crackers, apples or barrels where the 17½ head is used, five-foot-six-inch and six-foot hoops are used, the shorter length for the head, and the longer for the bilge. There is from twenty-five to fifty cents difference per thousand in these lengths. But, unless one uses a large amount of hoops, it is not advisable to try the shorter length.

In some cases when three-foot-six-inch hoops are quoted at low prices they can be used by nailing two together, making a six-foot hoop. These three-foot-six-inch hoops are offered occasionally as low as \$2.50 per one thousand, so by nailing two together you have a good hoop at \$5 per one thousand. Six-foot hoops are now being offered at from \$11.50 to \$12 per one thousand.

Popularity of Wire Hoops

Wire hoops are being more generally adopted every year. Many large firms are using them almost exclusively. Wire hoops are to be credited for keeping the price on wood hoops from going to \$25 or more per one thousand. The wire hoops are usually used on the bilge, and after driven tight are stapled on the barrels with small staples, holding them securely. Some large firms are using four wire hoops and two wood hoops. This makes a very strong barrel. Many of the largest cracker factories are using this barrel. The cost is a little more than the four-hoop barrel, but has been proven to be the cheapest in the long run, when damage is considered.

Hoop dye can be used to color the hoops any color desired. This dye is put in water, a half of an old syrup or lard barrel will do, and the hoops are dipped in this coloring. The coloring is very cheap considering the large number of hoops that can be colored with a small amount. Three dollars' worth of dye will dye thousands of hoops. Colored hoops make a neat-appearing barrel.

In buying cooperage stock to save money some judgment should be used, as the cooperage market is rarely the same for two seasons running. The best months to buy are from December to March. In February stock usually advances, at the rate of five per cent. a month. This is likely to continue until after the apple season. Therefore, care should be used in securing cooperage stock in the winter to last over the season. These advances depend largely upon the prospect of the apple crop.

The nested barrels are the best barrels to buy if you are not in a position to make your own barrels. The barrels are fitted one inside of the other, and so on until five to ten are in one bundle. Then they are loaded in the car in this way. As high as two hundred or two hundred and fifty can be hauled on a hay rack. This is a big saving where a long haul has to be made to the orchard. Some growers prefer this barrel to the other headed barrels, even when it costs more, owing to the saving in hauling. These barrels are usually made on machinery and every barrel should be the same size and any head should fit any barrel. Likewise the hoops are all measured on machinery and are the same size. These facts make this type of barrel an extremely practical one for many and diverse conditions.



The principal steps in the construction of knock-down barrels

ments, such as for crackers, crockery and glassware. These are cut from mixed timber, gum, elm and hard woods. They are a little cheaper than the standard thickness and are usually jointed on what is known as a 9/16 bilge. With this bilge sixteen staves are required to make the standard bilge, 64 inches, whereas the standard joint is usually 5/8 or 3/4. This would run the bilge higher, from 65 to 67 inches; this is true of course only with a 17½ head.

The next stave of importance is the standard thickness cut “five to two.” It is not often used in mill-run staves for apple or cracker barrels, or similar barrels, owing to the high price.

The standard thickness, cut “five to two” are like

Cooperage Terms

Bilge, or Bulge—The center of the barrel, the largest part of a barrel.
Chime—The edge or brim formed by projecting ends of the staves.
Chamfer—To cut the ends of the staves in a beveling shape to allow the heads to go in easily.
Croze—A V-shaped groove cut on the inside of the stave about five eighths or three fourths inch from the end to hold the heads.
Head-Liner—A thin strip of wood nailed at the edge of the head and the chime of the barrel.
Joint—The edge on a stave or head.
Trusser—A machine to drive hoops on a barrel, or a man who drives hoops on a barrel.
Slack Barrel—A barrel used for dry products.

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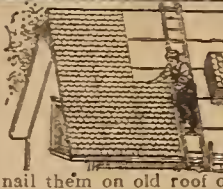
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A Clothes-Line Tightener



TO SAVE time and trouble with the wire clothes-line, fasten it to one post in the usual way, but carry it over a small grooved pulley screwed into the top of the other post. The pulley should be slanted a little away from the side of the post to which lever is fastened. At a convenient height bolt, with a common lug-bolt, a lever made of one-inch hard wood about two feet long, bring the line down over the pulley, and fasten it to the lever about six or eight inches from pivot of lever.

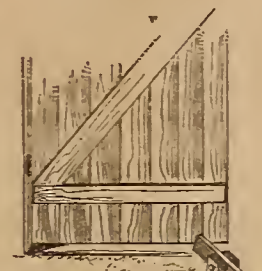
Place a stop or pin near inside of post for lever to rest against when line is stretched. Lowering the lever stretches the line until the line fastening passes the lever pivot, when the lever is drawn against the stop and line remains tight until lever is released. Raising the lever lowers the line just twice the distance between the pivots and is a great convenience in cleaning the line, hanging the clothes or in taking clothes from the line. If lever is raised when line is not in use, the tension is released, and post, fastenings and line will all last much longer. W. J. SPEER.

the end of the latch fasten a block on top so that when the latch is at the bottom of the notch the top of the block will touch the board D. Bore a hole through the latch, under the block, and fasten a wooden pin in it, having a projection of four inches on either side, for a handle. Fasten a spring (E) from the board D to the bottom of the latch. Next nail a piece on the back of the post that the gate is swung on, two feet long. Fasten springs from each end of this piece to the gate.

When you wish to pass through, push down on the handle until the latch is out of the notch, then push open. The spring will pull the gate shut, and when the latch strikes the sloping piece on the post it will glance up, and by means of the little spring (E) will drop in the notch.

HARRY WELLS.

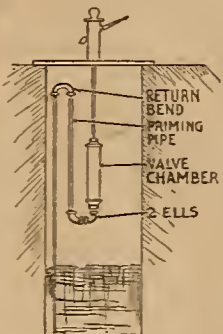
Simple Barn-Door Stop



THE drawing shows a 'catch' which I have found handy to keep the barn door open while watering horses, cleaning out the stable and doing similar work. It consists of a post and a catch.

To make the post, take two pieces two by four inches by two and one-half feet long and one piece one by four inches by two feet long; nail them together with the short one between the long ones. This leaves a notch in one end six inches long. For the catch use a piece one by four inches by two feet long. Taper at one end, and insert in notch, leaving it even with top of post when horizontal. The square end should be about six inches long. Bore hole through catch and post, and put in bolt. The illustration shows the device in place. To release door lift tapered end of catch with toe of your foot. ANDREW ANDERSON.

Sand-Proof Pump



THIS may be of interest to those who pump their water from "water-bearing sand" and who have trouble with fine sand getting under the check valves, which requires the pump to be primed every time it is used. To overcome the difficulty, connect to the bottom of the barrel two ninety-degree L's, and into the outer one of these screw the priming pipe, which should be twice the length of the barrel and stand upright. With a return bend and pipe connect to the water as in sketch. The action of the priming pipe is to form a water trap, and the valve chamber is thus always full of water and hence always primed.

This wrinkle will also give a much longer life to valve-leathers in clear water, and it has proven a great saver of time with water containing fine sand. WILLIAM NICHOLAS.

For Cutting Dewberries

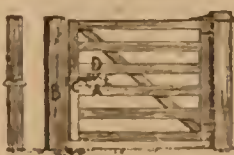
FOR those who have dewberry-vines to cut and who do their cutting with grape-shears, this method of trimming the vines before trying them on the stake will be found very convenient and time-saving.

For this take a piece of an old broom-handle about two feet long, to which staple a piece of No. 8 wire, and bend it under the stick, thus making a firm hook about six inches long and curved slightly upward. A thin wire wound around the pole and the thick wire makes it firmer.

With this hook you can pick up the vines, taking several at a time, about one foot high, and then cut them with a sickle, making one quick stroke upward just in back of the hook. Hold the hook in the left hand.

By this method ten vines can be cut just as quickly as one with the grape-shears. It can be done especially well if the vines have been laid all in one way the previous fall, thereby making it possible to cut all the vines of one plant at one stroke. L. DAMMANN.

Self-Fastening Gate



THIS gate is very handy, especially in places where there is a necessity for frequent passage through it. The gate is made of one-by-four lumber with the horizontal ends enclosed by a board on each side, as shown in the diagram, and is securely braced. Hang the gate on hinges that will allow it to open either way. Take a piece of two-by-four about twelve inches long, and saw a notch in it one inch deep and one and one-quarter inches wide in the center of piece. Saw the top corners off, and fasten the piece to the post (B), as shown in the diagram.

To make the latch, take a piece twelve inches long, two inches wide and one inch thick. Bore a hole in the piece four inches from the end, and fasten it between the two boards, as shown at C, three inches from the board D to allow it free play. At

Two Transportation Kinks

IN MOVING a plow on the farm, take a two-inch plank about two feet long and eight inches wide. Nail a horseshoe near the front end. This will catch the point of the plow, and the point will slide along like a sled when the team is hitched to the plow. The front end of the plank should be beveled on the under side so it will pass over stones and small obstacles.

The following use is also very practical: In carrying a dead hog or sheep, take a horseshoe in each hand, let the person on the opposite side put his hands underneath the animal and also take hold of the shoes. This way does not cramp the fingers like taking hold of hands. J. E. BARNLY.

Good-Behavior Hog-Trough

ALL farmers feeding pigs, especially young pigs, know how the youngsters crowd and jump at the bucket of feed, oftentimes splashing it on the feeder as well as themselves, thus wasting feed and attracting flies. To remedy that I have fixed up this device, which has been satisfactory.

Place two posts at each end of the trough. Nail a board between them two feet higher than the trough. Block the top of the board slightly from the posts so the hinges will not bend if gate is swung forward a little. Make a board gate to exactly fill the empty space, and hang it with two strap hinges to the top board.

In the middle of the gate nail a strong plank one by four inches and four feet long, letting the two extra feet extend above. Six inches from the bottom of the middle piece put a piece of wood eighteen inches long with one nail clinched on the other side so it will act as if on a pivot.

By pulling the top of middle plank to you, the gate will swing in; turn the piece on the pivot straight, and let it catch on the other side of the trough; after putting in the swill or feed at ease, turn the piece of wood crossways, and let the youngsters have a good time. Provide a suitable stop to prevent the pigs forcing gate outward. It can be used for other animals also. I have found it a great convenience. LOUIS WAX.

Headwork Winner

The first-prize contribution in the Headwork Shop in this issue is, "A Clothes-Line Tightener," by W. J. Speer.

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Crops and Soils

Irish and Sweet Potatoes as Companion Crops

By James B. Morman

MANY parts of our country have a climate adapted to both Irish and sweet potato growing. A practical feature of intensive gardening is the growing of companion crops; that is, crops which do not interfere with each other's growth. This is the case with Irish and sweet potatoes. So far as characteristics of growth are concerned, these two crops differ widely.

The Irish potato grows deep in the soil and, for its best development, requires the soil to be ridged around the plant. It is planted in furrows and the soil is hilled over it. On the other hand, sweet potatoes as commonly grown require that the soil should be lightly ridged in rows about three feet apart, and the sweet-potato slips, or cuttings, are inserted in the ridges about eighteen inches apart. The Irish potato is a real tuber growing on rootlets from the main stalk and well beneath the soil; whereas the edible portion of the sweet potato is not a tuber at all, but is an enlarged root which extends downward. The enlargement is caused mainly by the plant storing up starch and sugar in the roots. This is plainly shown in the accompanying picture.

Systems of Planting and Cultivating

Under these circumstances why could not Irish and sweet potatoes be grown together? That was the question I sought to answer in my Maryland garden in 1912. Where gardens are small, a system of intensive gardening is equivalent to an in-



The sweet-potato root expands and grows downward

crease in garden area. By intensive gardening, therefore, the aim is to get the most we can out of the soil and still maintain its fertility.

In making my experiment, the ground was first plowed, harrowed, well fertilized and planted to an early variety of Irish potato. The planting was done a little later than usual so that the mature Irish potatoes should not remain in the ground too long, since both crops have to be dug together. They were also planted a little farther apart than usual to provide room for the planting of the companion sweet potatoes. The Irish potatoes were cultivated and hilled in the usual manner, but during the last cultivation the soil between the rows was thoroughly worked in order to lighten the soil in the ridges as much as possible.

When the Irish potatoes were hilled for the last time and were in bloom the sweet potatoes were planted, being inserted in the ridges between the Irish potatoes. Soon after the plants were set out, the land between the rows was thoroughly worked with the hand cultivator to keep down the weeds, to form a soil mulch and to conserve the soil moisture. A little of the dirt was also thrown to the sweet-potato plants. One or two hoeings were sufficient, but cultivation was kept up until the vines had run to such an extent that it was no longer practicable.

Both Crops Were Normal

Under this method of intensive potato-growing there was no crop interference. While the Irish potatoes were maturing, the sweet potatoes were only getting a good start. As the Irish potatoes matured and the tops died down, the sweet-potato vines began to run and soon covered the ground. This keeps down the weeds.

Before the sweet potatoes began to draw their nourishment from the soil in the upper portions of the ridges, the Irish potatoes had practically ceased drawing nourishment altogether. In reality, the sweet potatoes absorbed the plant-food ele-

ments not taken up by the Irish potatoes. When the two kinds of potatoes were dug in the late fall, both crops were normal. The practicability of growing Irish and sweet potatoes together, therefore, cannot be doubted and is especially adapted to small gardens. To get the best results, it is only necessary to provide sufficient plant-food elements by the application of complete fertilizers containing nitrogen, phosphorus and potash. On my garden I have for years used nothing but chicken-manure which is produced on the premises. When sufficient organic matter and fertilizer are applied to the land companion cropping is not injurious to soil fertility.

Control of Fertilizer Waste

By Alfred C. Durgin

ABOUT most farms there are places where a considerable amount of fertility runs off in the drainage-water. This is usually the very best kind of plant-food, as it is in liquid form and ready for the plant-roots to at once absorb and utilize in growth. Drainage-water sometimes performs the duties of irrigation as well as fertilization. This is the case where the water, falling on the roofs of buildings or hillsides, gathers fertility by running through barn-yards, hen-yards or over cultivated fields and becomes concentrated upon a fraction of the area upon which it originally fell.

This seepage often flows upon grass-land which is greatly benefited by it, but can seldom utilize all of its concentrated richness, as it generally sinks into the ground before spreading over a very large space, and much of it goes too deep for the shallow-rooted grass-plants to reach. By setting in such places fruit and nut trees, whose roots will reach very deep into the ground after food, a great deal of this loss can be prevented, and the resulting crops will be surprising.

I know of a hickory-tree in such a location, below and a few rods from a barn-yard, that is the most magnificent specimen of its kind that I have seen, and it bears wonderful crops of nuts every year when its blossoms are not killed by late frosts. I have an apple-tree in a similar situation that has more than once paid all the taxes on my home farm in the value of its fruit crop.

Rhubarb Thrives in an Oasis of Fertility

However, trees are not the only means of utilizing such fertile spots, as they furnish ideal locations for growing certain vegetables and flowers that delight in a fertile soil and do not object to wet feet occasionally. I can call to mind two places where a row of rhubarb has been planted near the fence below a barn-yard, and in each case it has thrived wonderfully, with no subsequent care. On my own farm there are three hills of rhubarb set where they are watered and fertilized by the soapy wash-water that runs down by their roots from where it is emptied each week.

These plants were set long before I bought the farm. They have been in their present position at least twelve or fifteen years without any care whatever, and yet they each year throw up great clumps of big stalks and furnish us with more than we ever care to use in the family. Celery is another vegetable that would thrive amazingly when grown in such rich spots which have an extra supply of water.

Flowers Near a Sink-Drain

The end of the sink-drain is another spot which offers a splendid opportunity to grow plants which love a rich, wet soil. During the last three summers I have grown a double row of sweet peas below my sink-drain, letting the water run down between the rows, and they have grown six or seven feet tall and been loaded with blossoms during these dry seasons.

These are but a few of the ways of utilizing fertility-laden drainage-water that have come under my own observation and experience. Other methods of making use of different conditions will occur to those who give the matter thought, and by a little judicious planting it will be found that surprisingly good results can be secured.

Fertilizing for Wheat

By Chas. E. Thorne

FOR periods ranging from eight to eighteen years the Ohio Experiment Station has grown wheat in rotation with other crops, either without any fertilizer or manure or with different combinations of fertilizers and manures.

In these experiments acid phosphate, used alone at the rate of 120 to 160 pounds per acre on wheat, following similar applications on the preceding crops of the rotation (corn, oats, or potatoes), has increased the crop by four and one-half to ten bushels per acre, averaging nearly seven bushels.

When the acid phosphate has been reinforced with muriate of potash, there has been a further increase of two bushels per acre, and when nitrate of soda has been added to the acid phosphate and muriate of potash the yield has risen one and one-half bushels more, giving an average increase of ten and one-half bushels for the complete fertilizer.

In every case the increase has paid for the fertilizer, with a margin of profit, although the margin has sometimes been narrow when only chemical fertilizers were used. Barn-yard manure, used alone, has not produced as large an increase as has been obtained from chemical fertilizers. But when manure has been substituted for nitrate of soda and muriate of potash, its deficiency in phosphorus being made up by dusting it, while accumulating in the stable, with acid phosphate, used at the rate of fifty pounds per ton of manure, the increase in wheat has risen to a fourteen-year average of sixteen bushels per acre over the unmanured and unfertilized yield. This was accomplished notwithstanding the fact that the manure was all applied to the corn crop preceding the wheat, and paid for by the corn crop, thus leaving the increase in wheat as clear gain.

More than one thousand plots of land, of one-tenth or one-twentieth acre each, were used in these tests scattered over the State at suitable places, each plot being set to answer some one small part of the whole great problem. Reducing the teaching of all this work to general farm practice, the station is now plowing under for corn about eight tons per acre of manure which has been reinforced with phosphate during accumulation and spread on clover sod during the fall and winter.

After plowing a ton per acre of finely ground limestone is harrowed in, and a crop of corn is grown, followed by oats; the wheat crop then receives four hundred pounds per acre of a fertilizer made up of about two hundred pounds of steamed bone-meal, one hundred pounds of acid phosphate, forty pounds of muriate of potash and sixty pounds of nitrate of soda, the nitrate being sown broadcast after growth starts in the spring.

The outcome of this treatment has been to increase the average yields on ten-acre fields for the last seven years, as shown below:

Crops	Receiving Manure	
	Only	Fertilized
Oats	52 bushels	60 bushels
Corn	48 bushels	73 bushels
Wheat	20 bushels	34 bushels
Clover-hay	3½ tons	2½ tons

The yields in the second column were in a four-year rotation of corn, oats, wheat and clover. The manner in which manure was applied to the fields represented by the first column was to give the wheat a top-dressing. The corn received no treatment.



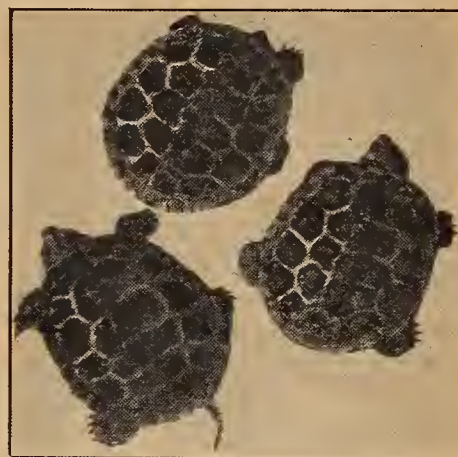
The plot to the right shows the effect of acid phosphate in hastening maturity

The Diamond-Back Terrapin

By A. D. Dart

THE first photograph shows a group of little terrapins two months old. The second photograph is of the buildings of the beautifully situated United States Laboratory and wireless station on Pivers Island in Beaufort Harbor, North Carolina.

Along the sandy shores of the island, during the past season, quantities of diamond-back terrapin have been hatched, under natural conditions, in the three large pens or enclosures used for that purpose.



Two-months-old terrapins



United States Laboratory where the experiments are being conducted

Here the old terrapins are kept, and during the warm months are fed daily on fish and sea food.

At the first appearance of warm weather the mother terrapins lay their eggs in the sand of the shore, at a depth of about six inches. Seven or eight eggs are usually found in a nest. The baby terrapins never know what it is to have a mother's care, and for this reason they are preyed upon by many enemies, such as mink, rats, raccoons, hogs and crows, all of which not only eat the young, but dig down and destroy the nests and eat the eggs.

After depositing the eggs and covering them with warm, dry sand, the old terrapins return to the water, knowing the summer sun will do the hatching. If the season is hot and dry, this is accomplished in about forty days; about sixty days are required if the season is cold and rainy.

They Eat Very Little the First Year

At first the young are about seven eighths of an inch long, measured lengthwise along the lower shell. They seldom increase much in size the first year. After emerging from the shell, they waddle down to the water and take their first swim and drink.

Very little food is required by them the first season. This seems a wise provision of nature, for at this age their jaws are very tender and soft, and their movements are so slow that to obtain any food to their liking would be almost impossible.

On the approach of cold weather both old and young bury themselves in the sand, or more generally in soft, water-covered mud. Here they lie dormant until the warm days of the following April or May.

Observations at Beaufort, North Carolina, where much has been learned of their life and habits, indicate that the chief food of the terrapin is the small snail commonly found clinging to the long blades of marsh-grass along the watercourses. They will also eat small soft crabs.

To Bind the Load of Hay

By S. B. Pray

THE following manner of binding a load of hay is very effective. It is called the spanish windlass. Pass a strong rope over top of load and make it fast to bottom of rack in the center of each end, and do not draw very tight. Now take two round sticks about four feet long and one and one-half inches thick. I use broken shovel or fork handles, but any round stick of suitable size and strength will do. Sharpen one stick, and push it about three feet into hay on top of the load, close to the rope. With the other stick take a hitch in the rope close to the stick in the hay and then wind it around and around the upright stick, which will also wind the rope around the stick. You will bind the load as tightly as the rope will stand. When sufficiently tight tie the end of the stick to the rope, and you are ready to go. When the load settles give the stick another turn or two.



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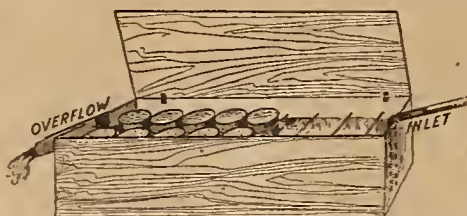
Keeping Milk in Hot Weather

By Wm. F. Droge

THE chief factors that determine the keeping qualities of milk are: first, cleanliness, and, second, the temperature to which it is cooled and held. From the consumer's standpoint, cleanliness is the most important, and the one that he insists upon being observed; but the temperature to which milk is cooled and held is the one that mostly determines its keeping qualities.

Keep Utensils in a Fly-Free Place

To be of good quality, milk must be clean, and be handled under clean conditions. A large per cent. of the contamination occurs during the milking process by dirt, dust, hair and scales from the cow's flanks and udder. Those parts must be kept clean, and just before milking should be wiped with a damp cloth. Milk into a partially covered pail with an opening not larger than eight inches in diameter. Wash and scald all



A good cooler for spring-house or well

the utensils immediately after using, and keep them in a clean place, absolutely free from flies. The millions of bacteria that are conveyed into milk by dirt cannot be strained or filtered out, and as they are the sole cause of milk souring they should be prevented, as much as possible, from getting into the milk.

The milk-souring bacteria find their most favorable temperature at about eighty degrees Fahrenheit, and milk kept at this temperature will sour very quickly. At fifty degrees they grow but slowly, and at thirty-two degrees their growth ceases entirely. Experiments have been conducted which show the organisms held for twenty-

four hours at fifty degrees multiplied seven times, while at seventy degrees they multiplied seven hundred times. The writer has carried on experiments to determine the keeping qualities of the same milk held at different temperatures. Samples of clean milk were obtained and held at seventy, fifty and forty degrees. The average time milk kept at seventy degrees before souring was eight hours, at fifty degrees was twenty-four hours, and at forty degrees was thirty-six hours.

The temperature is, therefore, important in determining the length of time that milk can be held.

The method of cooling milk is the most difficult problem that confronts the milk-producer. The larger dairies and milk plants have, as a rule, some system of mechanical refrigeration, though some resort to the use of ice. By such methods the milk can be cooled to such degree that there is no danger of its souring before it reaches the consumer. The majority of producers, however, have not these devices, and to them the cooling of milk is a serious problem. The average well-water has a temperature of about sixty degrees, ranging from fifty-six to sixty-two degrees, while the average spring-water is about fifty-eight degrees. Most of the milk cooled by water is rarely cooled lower than sixty degrees.

Many types of water-coolers and aerators are on the market; some of these are very good, and some are worthless. The great trouble with the large ones is that they are hard to keep clean. Milk should be cooled within thirty minutes after milking.

Aeration of milk is a process by which milk is exposed to air by flowing over a broad cool surface or by agitating in the presence of pure air. This drives off the heat, gas and volatile odors. Aeration of milk is not recommended unless the air in which the operation takes place is pure. Many aerators I have seen were situated where the air was foul, dusty and full of bacteria. Where the air is pure, however, aeration is a very good thing, as it quickly drives off the animal heat and cools it to the desired temperature. A type of aeration consisting of coils where running water is forced through the coils and the milk flows over the outside is very efficient.

The Small Milk-House

Where a spring of running water is at hand a small milk-house for cooling purposes may be built to good advantage. This house should be dust-proof and screened to exclude the flies, and a tank should be constructed with strips across to hold down the cans. Deep setting cans are the best to use in this case, and catches should be soldered on to fit under the strips in the tank to hold the cans in place. The tank should have an outlet so that the water always stands within two or three inches of the tops of the cans.

Another simple and practical method of cooling milk is to have a cooler enclosed in the pump-house, and all water that is pumped for the stock passes through. The construction of the cooler is the same as that for the spring-house, and deep setting cans are recommended. In both cases, the cans should have perforated covers to allow the heat and gas to escape.

A type of cooler has been used which is only a long narrow can about six inches in diameter; this is filled with cold water and inserted into a common ten-gallon can of milk. The heat is driven to the outside.

There are many other ways in which milk may be cooled without ice, such as hanging down a well or setting in a tub of cold water. In the dry arid section of the West, where cold water is not very plentiful, the following scheme has been devised:

Two cans are placed one on top of the other, the lower contains the milk or cream, while the upper contains water; a cloth is placed over and around the cans with the upper end in the water; this acts as a wick, and the water is conducted down the sides of the can. With the rapid evaporation which occurs in such a dry climate, the temperature may be reduced to about sixty-five degrees. This temperature is not low enough to insure the keeping quality of milk for any length of time, but it has been used satisfactorily to some extent in cooling cream. Cream has better keeping qualities than milk, due to the fact that it contains more fat and less milk-sugar. For the same reason high-testing cream will keep better than low-testing cream.

The whole secret of controlling the keeping qualities of milk is to produce it clean, keep it clean, cool immediately and keep it cool until delivered to the consumer.



A long, narrow can filled with cold water is inserted into a ten-gallon can of milk



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The Market Outlook

Rising Hog-Market

By L. K. Brown

WHILE the nine-dollar hog made but a short stay in June, everyone is confident that it will soon return, and some even predict ten-dollar hogs by September. The marketing has been large for some time, but cash demand has been good too. Accumulation is necessary to handle the fall demand. The market has been on a healthy, active basis. Diminishing receipts are expected for the rest of the summer, and this, coupled with the increased demand for these months, will be responsible for the advance in price. Patrick Cudaby states that the ten-dollar hog is soon due, because between July 1st and November 1st there is three times as much meat consumed as is marketed, and that the supply of pork and lard on hand to meet this is but one third that of last year's.

The market is a satisfactory one to both buyer and seller. The abundance of feed at a moderate cost makes pork-making profitable to the grower. Because of this condition the hogs that the killer receives are in prime condition and so are cut up to a good profit. Also, there is a large percentage of lard which is a scarce and valuable product at present. Eastern shipping demand has been slack, but is expected to return soon. European buyers have been light purchasers in hopes of heavy June receipts and lower prices. Presently they will be forced to buy regardless of price, and export demand will increase accordingly.

With the continuation of the marketing of heavy hogs, which is the result of abundant feed, the spread of prices will widen, and a dollar between fat sows and choice hogs would be reasonable. The packers have been able to accumulate considerable of both pork and lard lately and probably will be able to continue to do so for a short time, but still there will be a shortage before the 1913 crop makes its appearance. Compared with a year ago, prices are a dollar higher, and the receipts are considerably heavier, while the stocks in packing-town cellars are but one third. This difference has been caused by the much lighter marketing during the past winter than during the winter previous. General reports are that the pig crop is rather small throughout the corn belt, and some of the same territory has a poor outlook for corn. If these conditions are true and continue we can expect high-priced hogs.

The Cattle Situation

By W. S. A. Smith

THE greatest change in the fat-cattle market has been in quality. The ripe, thick, fat cattle so plentiful in May are gone, so that, even though the market quotations may not show any great advance, cattle are really higher. From now on, as hot weather comes on, the light cattle will have their innings. The reverse will now happen with stock cattle. The market quotations may not show much change, but we will get more quality for the money as the grass cattle begin to come in. South Dakota has had hounteous rains, and there are thousands of acres idle for want of cattle. Money keeps fairly tight so that the banks are pretty well loaned up, and this has had an effect on the price of stock cattle. There's



This kind is at a premium

no saying where the price would have gone with money easy. We may have good crops, but not bounteous crops, as it is a fact that several States have already had deficient rainfall when it was needed, and corn is, as a whole, backward enough. It will be a remarkable season if a large percentage of the corn is not soft. The corn-market shows this plainly, as we had corn at 62 cents in Chicago, June 23d, with a large surplus in the country.

Fly-time is with us, and cattle in pasture should be provided with shade. We cannot, with present prices, allow anything to stand in the way of good gains, and many a man loses a whole summer's profit just through neglecting some little detail. Cattle that have their choice will seldom graze through the heat of the day, and they certainly do no good for themselves or their

owner if allowed to remain through the hot summer days fighting flies. Cattle cannot make satisfactory gains on grass unless they have an abundance of water at all times. Don't overlook these items with eight-cent stockers. In this year, like every other one, someone will make money on cattle, and someone will lose. As a rule, it is not luck, but close attention to details that wins out. I recently turned eighteen fancy 1,100-pound cattle into a thirty-acre hog-lot with plenty of shade and running water. The alfalfa and bluegrass was knee-high all over, so we ran the mowers over about twelve acres and stacked up twenty tons. I notice the cattle seem to eat at the new hay as much as the pasture. We will probably cut the twelve acres again after six weeks has passed. I figure this thirty acres from the cattle alone will make 250 pounds of beef per head by November, which would figure out, at eight cents, about \$20 per head, or \$360. In addition it will practically winter twelve head of horses. There are 200 head of hogs on it at present with the cattle and will be until fall. This thirty acres has been in alfalfa twelve years, but the bluegrass is gradually taking it. Last year this thirty acres carried 100 yearling steers (on corn) from May 6th to July 22d, 200 hogs all season, and in the fall 200 sheep. About \$40 an acre profit resulted. I don't do this every year, but mention this to show what manure and alfalfa will do and also to show what I mean by pasture. A great many farmers run away with the idea that a pasture is a field with a fence around it.

Worth Reading Twice

By Robert W. Neal

Not all blow-hards are to be despised. There is the silage-blower, for instance.

Make your farm look like yours. 'Twill be worth money to you to have a farm that's unlike everyone else's—in the right way.

The best thing to bring home from the county fair, besides a blue ribbon, is the determination to win one.

There's quite some variety of poor judgments. Some farmers always take care to keep their horses fresh and never knock off themselves for a good time, and some are always knocking off themselves, but never rest up their horses.

Why Sheep Prices Dropped

By John P. Ross

FROM the middle of June up to the present writing lambs were poured into Kansas City, Chicago, St. Louis and other leading markets in great numbers, causing a drop in prices of from 50 cents to \$1. The fear of a prolonged drought was the main cause of this, and added to it was the fact that an unusually large number of the lambs were in prime condition, and would, if longer fed, have grown to undesirable weights. Heavy ewes and wethers were not so numerous, but the hot spell caused what there was of them to be hard to dispose of. However, the pretty general heavy rains came in time to relieve what threatened to become a disastrous condition. Though sheep have at times arrived at the point where profits cease to exist, good spring lambs, which have formed the bulk of the big receipts, have ranged around \$8.00.

The American wool trade has been waiting in activity; but the trade abroad is lively. In British markets stocks are low, and demand strong; conditions likely to offer an outlet for a good deal of our clip. The export of a considerable amount has recently been noted.

The difference in the prices of home-bred sheep and lambs in England, and of those of imported frozen carcasses, is so greatly in favor of the native product as to give rise to the fraudulent practice of imposing the inferior article on a too trusting public as the bona fide pure John Bull bred product. British sheepmen are moving the government to take steps to stop this species of "fake"; and as we—though I don't think it likely—may for a time be inundated with the frost-hitten stuff, and as our meat-men have sometimes been known to confound goat with sheep, it may be well to get our legislators to protect our housewives from that sort of fraud.

Our Agricultural Department has just issued a very just and salutary order, that every individual carcass of frozen meat imported shall be inspected, instead of a sample picked here and there at random out of a ship-load of hundreds of tons. As the cost of this will be considerable and will fall on the importers, it will add materially to the difficulties of heating our own product, unless prices rise considerably.

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Farm Notes

Kill the Bot-Fly Eggs

By C. M. Weed



NEARLY every owner of a horse is familiar with the bot-fly so troublesome during the summer months. Bot-flies look much like large honey-bees and buzz about the head and legs of the horse as they attempt to lay their eggs upon the hairs within reach of the mouth of the animal. They are easily distinguished.

These eggs are light yellowish, and as they come from the fly are covered with a liquid glue that sticks them securely to the hairs on front legs or chest. About ten days after they are laid, each egg hatches into a maggot. If the horse licks up the egg just before hatching or the maggot just after the hatching, the maggot generally is swallowed and attaches itself to the wall of the stomach. Here it remains for months absorbing food and causing irritation and loss of vigor.

At last it becomes full grown in the maggot stage. Then it lets go and passes out to the ground, which it enters to become a pupa. Later it changes to an adult fly similar to those that laid the eggs. These bot-fly grubs are injurious in several ways. They irritate the lining of the stomach and probably interfere with the production of digestive fluids, and may so clog parts of the alimentary tract as to check the free passage of food.

The greatest danger from the eggs is from the tenth to the thirteenth day after they are laid. If the eggs are removed every four or five days there will be little likelihood of injury. If one part of carbolic acid is diluted with thirty parts of water and the hairs sponged with the liquid, the eggs will be killed. Even a slight touching of the ends of the hairs with a rag or sponge wet with kerosene will destroy the eggs.

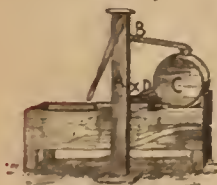
Horses in summer pasture are especially liable to have eggs laid upon them. So it is desirable to look such animals over once a week or oftener and kill any eggs present.

Think happy thoughts, and put them into practice before you forget them—practice makes them perfect.

'Tis better to marry for love and do without a nice home than to marry for a nice home and do without love.

Water Lasts All Day

By Robert J. Bogue



HERE is a scheme to keep the watering-trough filled. It is really a pneumatic-pressure drinking-fountain. The trough is first filled, and then the barrel, as shown in the illustration. The harrel (C) is stoppered at the funnel opening. The spout (B) is removed. The pipe (D) is to be in the water and must be of such length that the trough will be kept filled as desired. Turn the barrel so that D is down and in the water. Pull out the cork (X). The water from the barrel will supply the trough as needed. It is well to put a frame about the barrel so that it will not be pushed out of place by the stock. With the proper arrangement, the barrel may be filled at the same bung from which the water leaves. In my case I extend a platform from the end of the trough. On to this I roll barrel into position necessary.

Is the Farm Hand Well Paid?

By C. E. Davis

OFTEN I get letters from good farm hands wanting work; and yet there are many farmers with big farms needing hands. When I ask these farmers about wages they say, "Oh! I cannot afford to pay what that fellow asks. The way things are, no farmer can." So the deal is off, for there are other parts of the country where farmers are anxious to pay good wages for good work.

With work on the farm pushing hard nine months in the year, and enough work to keep three hired men busy all the time, they are compelled to raise fewer crops, with consequently less income. Some of these big farmers are thus working themselves into the grave, never seeing that they lose two men's wages by curtailed opportunities in each year.

Good hands that will do a full day's work without watching are scarce, and when they demand good or even high wages give it to them. A poor or careless hand is both a loss and a vexation. Suppose the hired man does make a little money—why

shouldn't he? If he is sober and trustworthy he is entitled to the honest dollar.

Some good hired men work hard for fifty years, and then haven't a dollar to bless themselves with! All the good wages fooled away; and old age in pain and poverty!

There is no hired man so good as the carefully trained son of the family, if he is a partner in both cash and "say so."

If you want good hands you must pay the price, and try to give them work in winter also; for the good hired man is rather autocratic, and if he is treated merely as a hired hand, a menial or an inferior, he will be very apt to seek a place where he is treated more as a friend and brother, even if at a lower wage.

Curious Farm Creatures

By John S. Nowlan

THE TREE-TOAD

WHEN a boy the writer often read of a wonderful animal, called a salamander, which was said to have the power of taking the color of the objects by which it was surrounded. But he never saw a salamander, and always felt a little "Thomas-like" in regard to its existence. However, he has since learned that there is an animal that has some of the powers attributed to the salamander. That is the tree-toad. Its life history is similar to that of the toads and frogs in the early stages.

To show these various changes we took one that was found on an old board and placed it in a white pitcher. When placed in it the toad was a dingy brown, but after a few hours in the pitcher it was white with a slight creamy tint and with a few pale-brown dots. On being placed in a window beside some green moss it soon took that

smaller and jet black, except for a red spot on each wing. The red is characteristic.

There is also a drab-colored one, which is larger than the nine-spot. It is sometimes found on willows in such numbers as to almost defoliate them. The others, in both the larvæ and the complete form, are strictly carnivorous. One species has been imported into California, where it is doing good service fighting the San José scale. Another, the cochineal, is reared in tropical America, a red dye being made from the bodies of the females.

The mature bugs may be found around the base of orchard trees, especially apple-trees. The eggs hatch queer little fellows, more like six-legged alligators than anything else. They are dark, with bands of yellow or red, the color changing with age.

The larvæ, when ready to make the first transformation, attach themselves to any convenient object by the hinder part of the body. They soon molt, the skin remaining around the body in the form of a glue-like ring at the point of attachment. In ten days to two weeks the perfect insect emerges to continue the work of its early life.

They seem to have a special fondness for plant-lice. Watch, from early spring till fall, where the lice are on trees and vines, and you may see both larvæ and adults feeding. I have taken leaves with the lice adhering to them and placed them on fences or other places where the larvæ were to be found crawling and watched the ladybugs proceed to feast.

In the days of my childhood it was a superstition that the ladybug would obey the human voice. If you would say,

Ladybug, ladybug, fly away home,
Your house is afire and your children all alone,



1, the tree-toad; 2, the dragon-fly; 3 the ladybird; 4, the "doodle-bug"; 5, the "humpbacked worm"

color. Try the experiment of putting one in various colored locations, and see the changes. You will be greatly interested.

THE DRAGON-FLY

What do you call him? Snake-feeder, snake-doctor, devil's darning-needle, mosquito-hawk? Every one of the names, except the last, is a slander on the whole tribe. The dragon-fly is one of our best friends. He eats everything of the insect kind—flies, gnats, mosquitoes and butterflies.

Watch him some summer evening. See him alight on a dead limb, or, if it is not to be found, a post, a weed, or any other object that will allow him a good range of vision. Presently a mosquito comes along singing gaily and—it's over. In less time than it takes to tell it, out went the dragon-fly, captured the mosquito and returned to his post in triumph, or supped as he leisurely floated along. He ought to see well, as each of his large prominent eyes has 28,000 polished lenses.

There isn't another creature in the animal kingdom that can do what he can. He can go straight ahead at a speed greater than that of a railway train, and then, without changing the point of the compass he is facing, go just as rapidly backward or to either side.

Catch him? Well! Put your finger on him and, like the Irishman's flea, he isn't there. However, he is strictly a warm-weather fellow. A June morning is sometimes cool enough to benumb him sufficiently to enable you to catch him.

THE LADYBIRD

The insect known as the ladybird, or ladybug, is a very useful as well as common one. Here in southern Illinois three kinds are found, the best known being the common nine-spot. It is turtle-shaped, red, with nine black spots on its wings, hence its name. It is about three sixteenths of an inch long. The twice-stabbed ladybird is

she would spread her wings and fly. And she will; that is, if you have patience to repeat the command often enough and await the pleasure of her ladyship.

THE "DOODLE-BUG"

This was one of the greatest mysteries of my youthful days. I had no doubts as to its existence, for had I not seen them called from their hiding-places? This is how it was done. Search around an old rotten log for little funnel-shaped depressions in the loose earth. They are about as large as a silver dollar and sometimes an inch deep. Having found one, get down close to the cavity and say "Doodle, doodle" many times over in a rapid, monotonous voice, and the doodle-bug, if at home, will come forth. Then say "Back Jack, back Jack," and he will beat a retreat. I knew it would work all right, but why?

This is the larva of the ant-lion, and this is his trap for other insects. If an ant or other insect falls into this funnel, the loose earth gives way beneath its feet, and it rolls to the bottom, the prey of the tenant. The calling is mistaken for the presence of food, the waves of sound or the breath displacing the loose particles. Finding no victim, it will retire to its resting-place without orders if a little time will be allowed for investigation.

THE "HUMPRACKED WORM"

Watch closely along your path, and you may see a hole about the size of a small lead-pencil, the earth around the top of the hole being cut around like a funnel. Insert a straw, for instance timothy, and let it reach the bottom of the hole. If the proprietor is at home and not enjoying his siesta the straw will soon begin to rise. Remove it with a quick jerk, and you are apt to find a peculiar worm grasping it with its jaws.

When a boy we called them "humpbacked worms" for want of a better name, as they bear a wart-like protuberance on the back.

Unloading Prickly Pears

By Eugene Stollwerk

THE unloading of prickly pears while clearing our Texas land for cultivation has always been a very disagreeable job to us. The team was idle half the time while we had to work hard. So we started to study how to divide the work so that the team would do more of it.

We cut some long mesquit saplings and laid one or two of the saplings in the wagon, allowing the butts to extend a foot or two from the rear of the wagon, the tops touching the front end-gate. We took the rear end-gate out. Then we loaded the pears,



throwing them on the brush. We hauled the pears to an open place where they would not bother us any more.

Then we took a long rope with a hook at one end. This we fastened onto the butt of the sapling in the wagon. Then we tied the other end of the rope to the nearest stump or tree. A short, hard pull on the part of the horses caused the brush to slide out of the wagon, drawing the pears with it. It was done in a minute, and all the tire-some labor of unloading by hand was saved.

We unfastened the rope, put some new brush in the wagon and were ready for the next load. The brush must be long enough to reach from front to rear of wagon-bed, or it will not draw out all of the pears.

The Plaint of the Weary Worker

By Berton Braley

I AM sick of doing chores,
Endless chores.
Any way you look at them they certainly are bores.

You keep doing them forever,
But they're simply never done.
No; the fact is you are never
Free from this form of endeavor,
Though you toil from sun to sun.
All the time, time, time,
In the dust and glare and grime
You keep thinking, thinking, thinking, of
the twilight and the scores,
Scores, of chores, chores, chores, chores,
chores, chores, chores,
And the dreary, weary labor of the chores!

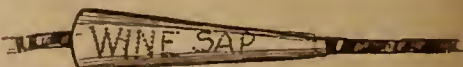
What a nuisance are the chores.
All the chores!
There's a certain sort of pleasure in your
labor out of doors;
But this milking in the shed,
And this putting hogs to bed,
And the chickens in the coop,
Gives me pain.
Till I almost fade and droop.
And I feel as though I never would recoup
From the strain
Of the endless repetition which my intellect
deplores.
Hear my roars
At the chores.
Which we do by two and fours,
And by dozens and by scores.
With a mumble and a grumble at the chores,
chores, chores;
At the chores, chores, chores, chores, chores,
chores, chores;
At the everlasting boredom of the chores:

Yet these everlasting chores
(Hang the chores)
May instil in me persistency which opens
many doors,
Which will bring me the appearance
Of a chap of perseverance
And may help me in the future to accumu-
late great stores,
Golden stores,
Stores of ores.
Or of fame;
And in those days I will claim
That the reason for the same
Was the everlasting doing of these ever-
lasting chores!
But at present they are bores,
Are the chores:
And they sweat me at the pores,
And they interrupt my snores,
When I have to pile out early for the chores,
chores, chores,
For the never-ending labor of the chores!

For Marking Trees

By J. E. Raiser

HERE is an idea which may be appreciated by others also. I have just set out some fruit-trees to replace some that have died or proven worthless.



Instead of the usual wood tag upon which the name is stamped and which becomes indistinct in a few years, I cut out strips from tin cans and perforate same with a finishing-nail. The narrow end of these are wrapped loosely around a small branch and arc let out as the branch grows.

Garden and Orchard

A Spraying Experience

By James D. Bowman

WEST VIRGINIA has in the last few years come wonderfully to the front as a fruit-growing State. In the regular fruit-growing districts where orcharding is carried on largely as a commercial enterprise the fruit-growers are up-to-date and progressive. They practise clean cultivation and spray regularly.

In nearly all sections of the State, however, plenty of fruit can be grown for home consumption if properly cared for. There are also places in the State not known as fruit districts where fruit can be produced profitably on a commercial scale; but outside the regular orcharding districts people are usually inclined to leave the orchards to care for themselves. Result: very little fruit, and that of poor quality.

The San José scale has in some cases been a blessing in disguise. Farmers, to save orchards from destruction by scale, have purchased spraying outfits, consisting of barrel-pump, hose, nozzle and extension rod, and have later decided to spray during summer, as they already had the outfit.

My own orchard is too young to determine in most cases the results of spraying, except that I have about conquered a very bad case of scale by spraying each spring just as the buds were swelling, with concentrated commercial lime-sulphur, one part to nine or ten parts of water.

For summer spray I use, on apple and pear, the commercial lime-sulphur at a strength of one part to thirty-five or forty parts water, and add arsenate of lead at the rate of two and one-half pounds to fifty gallons of spray.

On peach and plum I use a self-boiled lime-sulphur spray made by putting eight pounds of flowers of sulphur over eight pounds of stone-lime after warm water has been poured over the lime in an iron or wooden vessel and slaking has begun, thus boiling the lime and sulphur together with the heat of the slaking lime, adding just enough water to keep it boiling until slaked. Then strain through a fine wire strainer, working all the sulphur through and adding enough water to make fifty gallons. The last thing before spraying put in three pounds of arsenate of lead for curculio. It must be stirred constantly while spraying, or it will settle and clog the pump.

Some think Bordeaux mixture a better fungicide than lime-sulphur, but my experience with it in burning foliage has been such as to make me feel doubtful of it.

Remarkable Effect of Spraying

The most remarkable effect of spraying I ever saw was on some young Green Gage plum-trees last summer. There were six trees all of same age and variety, all of nearly same size and all equally full of bloom. After the bloom had dropped and the husks on calices were about all off (May 6th) I sprayed with the self-boiled solution given above.

When I had sprayed the other plum-trees and five of the Green Gage trees my spray solution gave out, and so I decided to leave the one tree as a check on the others to note the effect of the spray. It looked as promising then as the other five trees.

On May 31st I again sprayed the five with same formula, again leaving the one tree unsprayed. At this date there was a difference, more stung fruit being on the unsprayed tree. This was all I sprayed, but they would have been much better for a spraying in July, as some trees lost some fruit just before ripening, from brown rot caused by so much dry weather.

When we harvested the crop in mid-August we got, from the five trees, over seven bushels of fine plums, with scarcely a faulty one.

On the test tree, not sprayed, the plums continued to drop till about two weeks before picking-time, when the last one, all covered with wax, dropped off, and we did not get a single plum from it. Such an experience is more convincing than bushels of talk.

For Late Planting

EVEN along in August there is still some chance to sow and plant. Earlier vegetables have been harvested, and the ground becomes available. Early cabbages, early peas, early potatoes, early beets, etc., have been removed; rows of lettuce show only a few scattering plants, now gone to seed. The garden looks better if all the stumps, leavings and rubbish are cleared away and the land freshly dug over, and it can be made more useful and productive by sowing or planting something; this may be winter radish, flat turnip, spinach, kale, Big Boston lettuce. Anything is better than nothing. Last year I planted some Hebron and Bliss' Triumph potatoes (left over from spring planting) in some vacant rows on August 1st. This is rather late, I admit. But the fall happened to be long and fa-

vorable, and I dug a quantity of excellent potatoes, although not large tubers, which made good seed for this spring's planting, and the vines now look quite thrifty and promising. Such seed-potatoes are as good as the southern so-called "second crop" seed-potatoes. They may not be very large, but they keep well and remain sound until late in spring. Also, I always sow my White Portugal or Silverskin onion-seed on or about August 1st for growing my green or bunching onions for early spring. We still have a full supply of such onions, mild and tender, from the patch sowed on July 31st of last year. Sow good seed thickly in rows a foot apart. Do not thin. If you by this method get as fine green onions and such an abundance on a comparatively tiny spot of ground as I had again, for the tenth or twelfth time in succession, this spring, during the latter part of April and during May and June, I think you will not neglect to sow at least a few short rows, every year afterward. T. G.

Late Green Peas

I AM very fond of good green peas, and if I can have them would enjoy them not only in early summer, but also in early fall. When I have some seed-peas left over from early spring planting I usually sow them along in fore part of summer, up to nearly August. In some seasons we have had very fine green peas in September and October, and enjoyed them greatly. Hot and dry weather is not favorable for peas. They may mildew. They may fail to fill. But we take the chance. We may succeed; we may fail. T. G.

Barrel-Covers

By R. E. Rogers

THERE are some sorts of produce that may best be shipped in barrels. The heading of the barrel is a problem at times, since a good many heads will not fit and needless time is wasted in making the head stick in place. We have found that we can buy burlap for four cents a pound. We take the wooden hoop off the barrel, but not the wire hoop immediately below it. Spread the burlap over the top, pound the wooden hoop on, nail it and trim the burlap off within three or four inches of the edge. This easily holds the produce in the barrel, allows ventilation, and is a quicker system.

While few have the honor of making our laws, all may have the honor of obeying them.

At the next open grange meeting try the plan of having three or four after-supper toasts. Of course they will be talks with lots of fun mixed in, but they will lend an air of distinction to the evening and will help to make the grange a little livelier than before.

Maryland Yellow-Throat

By H. W. Weisgerber

A PERSON cannot always boast of knowing where to find certain wild creatures and then go and locate them. Too often we fail to find them in the most likely places. But while this may apply to them in general, it does not refer in particular to the Maryland yellow-throat. He is one that we can usually count upon finding in brushy thickets beside some watercourse or stagnant pool. In these little patches of brush he will be heard, although it is rather difficult to get sight of the little black-



masked fellow. And when we finally locate him it is likely that he will beat a swift retreat to the next thicket. Our eyes can follow his greenish-yellow form.

Sometimes, however, he gets very inquisitive, and then he will come out of his hiding-place and view the intruder and scold him for his impudence. At such times we are permitted to get a good look at his black-masked face. But he is not a highwayman whom we need fear.

It is by his song, a loud and ringing "witchy-witchy-witch," that he will be best known. He is a member of the warbler family, and one of its number that feeds on or near the ground. His entire food is worms and insects.



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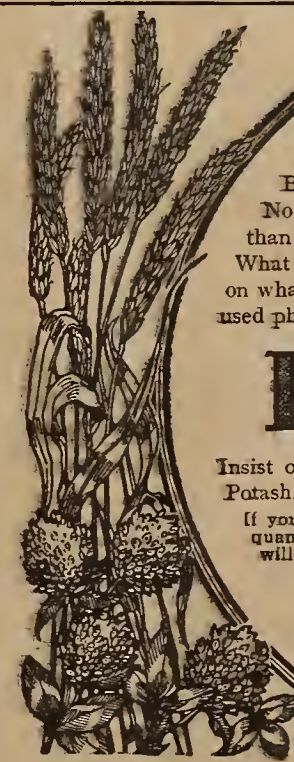
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Poultry-Raising

Plan Now for Silage

By T. F. Click

WE HAVE fed silage to poultry for three years, and while some of the statements to follow may not be credited by some poultry-raisers I ask you to make tests yourself before becoming critics.

In 1911 we began to feed silage the first day of September and never missed a feed till the silo was empty the twenty-second day of July, 1912.

Now you will infer that when there was plenty of green stuff the hens would not eat



Your hens will need green feed. Why not supply silage?

silage, but they seemed to relish it just as well then as they did in the middle of winter.

One of the secrets of successful poultry-raising is always to feed just the right amount of any feed you use. Our 240 hens netted us, in 1912, \$200 in cash above all expenses, and we have left, at this writing, three hundred fine pullets and cockerels.

One should feed at least two inches of silage a day to keep it from spoiling. We feed three pecks out of a forty-four-inch silo. We make our silage very wet when we put it in and pack it just as tight as we possibly can pack it. We use nine gallons of water for every foot in depth for a forty-four-inch silo and find that amount just about right. Better a little too much water than not enough.

Our Most Successful Silage Ration

We are now feeding the flock of three hundred birds three pecks of silage, ten pounds of bran, ten pounds of shorts, one and one-half pounds of old process oil-meal and one handful of salt for each feed.

To mix it we put the silage in a box, put salt on silage, then pour one gallon of boiling water on, then add bran and shorts and mix thoroughly, and we have the finest feed for the hens that I have ever been able to find. We feed this about eight o'clock in the morning, then we feed about two pecks of corn at four o'clock, which is all the three hundred will eat, and many times they leave corn, and we have not a poor chicken on the farm.

We are now feeding Brown Leghorns. If we were feeding Plymouth Rocks or other

large breeds we would have to double the amount. We have been six years in increasing the size of our Brown Leghorns and also the size of the eggs. When we began, our hens weighed from two to three pounds apiece, and the eggs weighed from eighteen to twenty ounces per dozen. All the hens in the flock will score from ninety to ninety-four points.

We own our own little silage-cutter and engine, which is of two and one-half horse-power. We cut everything one-half inch long. We have two small silos for the poultry. One silo is in the ground. The other is a twelve-foot stave silo. We put the silage in over the top with a bushel basket, as the engine would not operate a blower and we did not have time to build a carrier.

We did not propose to miss having silage to feed because we could not feed by power; for the one motto I have followed all my life is: if I cannot do as I wish, I do the best I can under the circumstances.

Many items on the farm, such as cull fruit, small potatoes, wastes from the kitchen, and other things which will not sell, find a good market through the hog.

When the Milk Curdles

By Dr. A. S. Alexander

"WE HAVE a cow whose milk is not good a short time after she is with calf," writes a New Jersey subscriber. "This last time I think she only went a month, when her milk would curdle when scalded. The time before that I think she went two months before the milk turned. She seems perfectly healthy, has a good appetite and no cough."

When a cow's milk curdles in the way mentioned the cause most often is in lack of cleanliness of the milk-utensils, and the cow should not be blamed.

Scrupulously cleanse stalls and sun-dry all milk-vessels.

See that the wash-water is uncontaminated and the milk is cooled in a sanitary place away from dust.

Where there is no possibility of bacteria in the milk-utensils indigestion may cause changes in the quality of the milk, and in such instances a change of feed should be tried.

Petroleum for Mites

By E. E. Heyl

I USE a remedy for mites that is even simpler, cheaper and much more effective than tallow, as explained in the March 20th issue of FARM AND FIRESIDE.

Simply paint the roosts and interior of poultry-house with petroleum (crude oil). I find that a thorough application once every two years very effectively does away with the mite problem.

Storrs Egg-Laying Competition

By J. Foster Ketcham

THE first six months of the Philadelphia North American Second International Egg-Laying Competition, now being held at the Connecticut Agricultural College, Storrs, Connecticut, came to a successful completion the first of May. In this contest there are a hundred pens, representing nearly every well-known breed and variety. The general conditions of care and management have been the same as proved so successful in the first competition. The same feeding formulas were also used, as it was felt that the conclusions drawn from

broody season their records run higher than those of any other breed. The leading pen for the first six months of the contest was a pen of Single-Comb White Leghorns belonging to Tom Barron of Catforth, England. This pen laid five hundred and eighty-eight eggs, or an average of one hundred and seventeen eggs per bird, for the six months, while the general average for all the White Leghorns in the contest for the same period was seventy eggs per bird. Mr. Barron's stock is also represented by another pen in the contest. The birds entered by Mr. O. A. Foster were purchased directly of Mr. Barron, and although they did not enter the contest till after the first two weeks were over they stood fifth at the first of May with a score of four hundred and seventy-four eggs. Second for the first six months was a pen of White Leghorns belonging to Edward Cam, Hoghton, England, with a credit of five hundred and twenty-one eggs. The best American pen was a pen of Single-Comb Buff Leghorns entered by George H. Schmitz, Chicago, Illinois, which laid five hundred and two eggs for the first six months and stands third in the contest.

There are three pens that have made monthly scores of over one hundred and twenty eggs. These are a pen of Single-Comb White Leghorns, W. L. Sleeper, York, Pennsylvania, one hundred and twenty-four eggs; a pen of Buff Orpingtons, O. Wilson, Carlisle, West Virginia, one hundred and twenty-three eggs, and another pen of White Leghorns, A. P. Robinson, Calverton, New York, one hundred and twenty-one eggs.

The best individual record in the contest was made by a pullet belonging to Mr. Barron. This bird laid one hundred and thirty-five eggs in the first six months. The second best individual is a White Wyandotte belonging to Edward Cam which laid one hundred and twenty-nine eggs. The best record made by any American hen was one hundred and twenty-four eggs, which



In six months, 129 eggs

was made by a White Leghorn pullet belonging to Braeside Poultry Farm, Stroudsburg, Pennsylvania. A Barred Plymouth Rock belonging to Woodside Poultry Farm, West Philadelphia, laid eighty-eight eggs in ninety-one days, laying sixty-one consecutive days. Up to date two hens have laid two eggs in one day.

Taking the contest as a whole, the production has been excellent. Of course there have been some poor layers, but such a thing is the exception rather than the rule, and the birds show that the majority of breeders used good judgment in selecting their competing pens.

On Sundays walk a little and talk a little, rest a little and jest a little, play a little and pray a little.

A good engineer brings his train into the station on time. It is the sign of a good farmer if he rounds up the day's work before dark. It is just as much to his credit if he does that, too, as if he were doing his work at the throttle of an engine.



Sixty-one eggs in sixty-one days

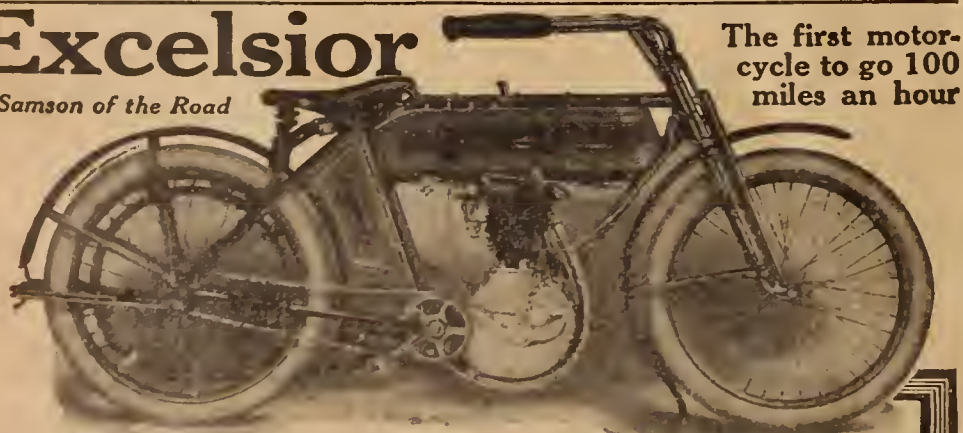
the results of the first contest could be more thoroughly verified if the same conditions should obtain for another year.

It is difficult to make fair and equitable comparisons between the performances of the various different breeds because of the unequal numbers of pens representing them. For example, there are forty-three pens of White Leghorns entered, while the White Wyandottes stand next in number of pens entered with a total of twelve. There is much more chance, therefore, to pick out high-scoring pens from the White Leghorns. This holds equally true, of course, in regard to pens with low scores.

The records obtained this year prove that the White Leghorns are good winter layers, and as they do not lose so much during the

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-Samson of the Road



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2 miles.....	1.12 4-5
3 miles.....	1.50 3-5
4 miles.....	2.29 4-5
5 miles.....	3.07 3-5
10 miles.....	6.18
30 miles.....	20.18 1-5
50 miles.....	33.55 1-5
75 miles.....	50.55 2-5
100 miles.....	68.01 4-5

Few territories open for live agents

The Five Senses of Man

By William J. Burtscher

A SENSE of honor, Which tells him what To love and hate.

A sense of justice, Which tells him what To give and take.

A sense of dollars, Which tells him what To spend and make.

A sense of beauty, Which tells him when To court and mate.

A sense of humor, Which tells him when To laugh and shake.



The FARMERS' LOBBY.

IN A RECENT discussion of some aspects of the currency-reform question the Lobby ventured some views as to the misuse or non-use of the vast store of gold which our Government holds in the vaults of the Treasury. It was suggested that if that huge stock of gold were liquefied, so to speak, by the admixture of a proper proportion of the prime commercial paper which represents the business operations of the Nation, and if then this admixture of gold and commercial paper were made the basis on which a truly elastic currency could be issued, the problem would be pretty well solved.

Who Owns the Railroads?

Further, it was pointed out that no other great country handles its gold reserve in the way we do ours. The banking experience of the world has borne out the conclusion that gold ought to be handled as a true reserve, a guarantee, precisely as the banks retain a part of their deposits in their vaults to meet the day-by-day demands of customers for cash. It is apparent that if the banks were compelled to keep the entire amount of their deposits in cash in their vaults all the time they would be unable to loan those deposits. In short, banking as we know the business would be impossible.

But it is not my purpose, in the present consideration of this currency matter, to debate the question of reserves. Underlying the whole matter of currency and banking reform for this country is something broader than this, which is beginning to get the attention of men who will have to vote on any currency legislation that comes before Congress. It goes down to the very foundations of the financial and business system of this country, and the fact that men are beginning to think seriously about it seems to be one of the hopeful signs of the times.

"Banks," said one of these men, "have to do too many things that ought not to be part of the banking business."

I wondered just what he meant, and said so. He replied with a question.

"Who owns the railroads of this country?"

Knowing that it was asked to draw me out, I hesitated. "The railroads," I finally replied rather oracularly, "belong to the community. In campaign time we hear a good deal about Wall Street owning them. As a matter of fact, they are owned by the investors."

"Just the same as the big industrials are owned, I suppose?" he went on.

"Just about the same," I replied.

"That's a good orthodox answer," he resumed, "but it isn't right. These big corporate properties are owned in part by investors and in part by speculators, and the speculating element really dominates them. That's the first, greatest, count against American business methods. It's the basis of the great difficulty about reforming our banking and currency system. If we could get these things out of the realm of speculative activities, and into the hands of investors, we would be ready to talk seriously about reforming our money and banking system."



THIS sounded interesting. Moreover, I was talking to a man who is known all over this country and several others as an authority on such subjects. He writes, speaks, thinks, studies, financial questions, has been the head of one of the great banks of the world, and refused to be quoted when I asked him to proceed with his explanation. Only with the promise that he would not be named in what I might write, he proceeded:

Banking Starts Very Easily

"In this country banks engage in a line of business that they ought to let alone. It isn't their fault; it is largely because in the banking business we have the fiercest competition that business knows anywhere. Talk about a money trust! Why, any banker you know will tell you about the fight for deposits, for good loans, for commercial business, in his city or town or county, in a way that will convince you that competition in banking is decidedly the real thing. It's too easy to start a bank in this country."

Having always been inclined to that view, and knowing that most people took just the opposite one, I listened with new interest.

"This competition among banks compels them to do some kinds of business that they ought not to do. The

America's Way of Financing

By Judson C. Welliver

real business of a bank is to gather together the current deposits of the people and amass them into a body of liquid capital that can be loaned out to people engaged in commercial business. They should be loaned on short-time paper, three and four months' notes preferably, that represent the great tide of commercial transactions of the people. They should not be loaned on long-time, slow-moving securities, because in the very nature of the business it may be necessary at any time to turn the securities of a bank into money, and a congestion of what may be called investment securities, held in the banks generally, would make quick liquidation impossible."

"Can't you illustrate that point a bit?" I interjected.

"Easily. A country bank finds itself in November with a good deal of money on hand. It would like to make a good loan of, say, \$10,000. A farmer comes in and asks for \$10,000; he is buying a new farm, and wants to know if the bank will take a mortgage for that sum, running three years. The banker, anxious to get his money earning something, makes the loan.

"Four months later, with the beginning of spring, there is a demand for small loans. Farmers come in asking \$300 to \$500 each for three or four months. The bank can't accommodate them because it has that \$10,000 tied up in a long-time mortgage. Other bankers have done more or less of the same business; and that neighborhood has a stringency on its hands.

"The bank with a big commercial business demanding a large volume of small accommodations should not tie up too much money in loans that cannot be liquidated quickly. Its day-by-day depositors are liable to become short-time borrowers at any time, and they expect it to be able to accommodate them. Good banking demands that it shall be."



THAT illustration of the country bank must be projected into the field of great banking to make my point clear. I asked you who owned the railroads.

"In part, of course, they are owned—that is, their stocks and bonds are—by investors, who lock them up, draw their dividends or interest, and are satisfied. But in large part, also, they are owned by people who do not buy to hold permanently, but with the idea of making a speculative turn. A man has \$1,000 in the bank and hears that Rock-Ribbed Sky, Consolidated, is likely to be a good thing; there's a melon to be cut. He rushes around to his broker and buys, not \$1,000 of Rock-Ribbed Sky, Consolidated, but \$10,000 of it. He pays his \$1,000 of cash, and the broker holds the stock as collateral, and advances the other \$9,000.

"So, instead of becoming an investor in \$1,000 of Rock-Ribbed Sky, Consolidated, that man has become a speculator in \$10,000 of the stock. If it goes up a few points, he will want to sell and take his profit. If the stock goes down, the speculator must scratch around for money to increase his deposit, or else his stock will be sold out, and he will lose what he has invested in it. If a whole community has been putting up small amounts of cash and making big loans to carry that kind of deals, and if stocks generally go down, then everybody will be hustling at once to get more money for more margins; and that makes hard times, stringency, occasionally panics.

"If it were possible to know at a given time just what proportion of the stocks representing the railroads and industrials were held in that very way, you would easily understand me when I say that nobody properly owns those properties, but that they are largely floated in a pool of community credit, from which speculating operators borrow. The banks loan money to be invested in them. Whose money? Manifestly, the money of the depositing public.

"We have about 250,000 miles of railroad in this country. They run everywhere. Every State has its share of them. Kansas, for example, had just a little over 9,000 miles. How many miles do you suppose are actually owned in Kansas? Probably not 1,000.

"Kansas sells its crops in the fall and deposits its money in the banks. The banks get full of cash for

which there is no adequate local demand. So they send it along to Kansas City, St. Louis and Chicago. The banks there, in turn, send it on in bigger aggregates to New York. New York is in the business of financing those Kansas railroads, and needs money to do it. So at length that good Kansas money, representing the wheat and hogs and alfalfa, gets to New York, where it is loaned out to the people who are using their own cash, plus what they can borrow from the banks, to 'carry' investments in Kansas railroad shares!

"That's the way, in the end, that Kansas and every other State owns its railroads. It is a bad way, for exactly the same reason that we found it was bad banking for that country banker to loan his \$10,000 on a farm mortgage running a long time."



IF WE adopted legislation to 'stop the country's money flowing off to Wall Street,' there would presently be no money there to finance the railroads, the big industries, and the like. That would precipitate a real crisis. So long as the various parts of the country will not get the investing habit and that up, for investment, these billions and billions of securities, and keep them off the speculative market, somebody must keep them floating. It needs the united resources of the whole country to keep the business of the whole country going. But if more of it were done on the solid basis of investment, and less on the basis of speculation, it would be vastly safer and more stable."

Our Need of Wall Street

All of which was apparently very simple and pointed; but when it came to my next question my financial friend was up a tall tree.

"What do you propose to do," I demanded, "in order to get the people of Kansas and all the other States to buy securities, instead of sending the money to the big cities and loaning it to other people to speculate in securities?"

"If I could answer that question," was the reply, "I would think I had the currency and banking problem solved. I don't know. This is a new and venturesome country. Not so many years ago there was a vast speculation in lands; everybody out West borrowed all he could get to buy lands wherever he thought there was a good thing in them. We are outgrowing that epoch because the lands are passing out of the realm of speculation. With the transportation and industrial securities it will be the same no doubt.

"Speaking broadly, Americans have not acquired the understanding of and confidence in joint stock companies that exist in European countries. You can't develop the investment habit in a day or a decade or a generation. We are progressing toward better conditions. For example, bank stocks are not the subject of speculation to any appreciable extent. Why? Because banks have so long been under strict regulation, their affairs have been public property, federal and state examiners and comptrollers have been on guard to make sure that the truth about them was known to everybody. When everybody knows all about a class of companies, there is not much chance for speculation left in them. After a while we will have the transportation and industrial corporations regulated pretty much as the banks are now, the people will know what securities are sound and safe, and more and more money will be invested in those securities by the plain people—the farmers, the merchants, the savings-bank depositors. The truth is that, until we take this class of operations out of the realm of banking, our banking and currency question will be different from the corresponding question in other countries. We demand more from banks than any other country demands, and, everything considered, they give us a wonderful service. The bankers don't believe in financing our great business instrumentalities as we do it now; but they are the servants, not the masters, of the people in that regard. Currency and banking reform, and public regulation and supervision of all classes of corporations, which tend to increase investment and reduce speculation, are what the country needs to-day. 'Stopping the flow of the country's money to Wall Street' might prove the most unfortunate thing that could happen, if it were stopped before we had made ourselves independent of Wall Street's aid in handling our investments."

IN FRONTENAC CAVE

As Told by One Who Was There, and Edited by Hayden Carruth

Author of "Track's End," "The Voyage of the Rattletrap," Etc.

Illustrated by Edward L. Chase

Synopsis of Preceding Chapters

Judson Pitcher, about eighteen years old, comes to Hawk's Landing on the Mississippi River in Minnesota. Here he meets Captain Nathan Archway and his daughter Amy and his son Robert. Robert goes with Judson to the Lumberman's Bank, and while there it is attacked by the notorious gang of robbers led by Isaac Liverpool. Robert is shot and killed, and the gang escape to their hiding-place in Frontenac Cave. It is impossible to penetrate this cave by the only entrance known, since the robbers have closed it up. Captain Archway conceives a plan to get into it through a small sink-hole on the prairie a number of miles back from the Zumbro River. He and Judson go there in the night and lower themselves with a long rope. While they are exploring the upper part of the cave a thunder-shower comes up, and the flood carries the rope down the sink-hole and fills the small opening a hundred or more feet above with brush and soil. Before leaving the Captain's home at Hawk's Landing Judson finds, as he reluctantly admits, that he is very much interested in Amy Archway. When the Captain and Jud discover there is no hope of getting out of the cave where they got in, they begin to search for another outlet and keep it up for six days. By this time their food is gone and they are very weak. Finally, by using their gun-barrel as a crowbar they move a loose stone at the bottom of a small tunnel and get down into the main part of the cave. They find the name of Gil Dauphin, one of the Liverpool gang, marked with candle-smoke on some of the lower ceilings. Looking down a pit, they see a smoldering camp-fire, and the Captain starts back to get their rope, but through haste and weakness falls down another pit into a stream of water. Jud goes after the rope, which they had left at Sink-Hole Dome, but is astonished to find it gone, though he had seen it a few hours before. He hurries back, with their only candle down to the last inch, and at the pit where the Captain disappeared is still more astonished by something else. Since awakening on their first morning in the cave they have been greatly puzzled by a strange beating or throbbing sound which is especially noticeable in the Bedroom near Sink-Hole Dome.

Part III.

A glad reunion with the Captain, and some food at last; with the particulars of what takes place at the River and at Fish Camp, together with how we scramble up the Pocket-Gopher Hole; after which, at the Star Chamber, the Captain grapples desperately in the darkness with a man.

I SAID I was astonished at a certain matter when I got back to the black pit into which the Captain had fallen, but I might more truly have said that I found something astonishing, but starvation had brought me to that point where I was truly astonished at nothing. I was, in fact, like a dumb beast, which takes everything as it comes and shows not the least surprise at the most unlooked-for things. The matter, then, which ought to have struck me speechless with wonder had I not been reduced to the state of a lumbering ox was the rope which I had gone after, one end tied about the pillar and the rest coiled on the edge of the pit not four yards from where the Captain had gone over.

My candle had some time before got too short to carry, so I had stuck it in the hollow of the larger end of a small stalactite which I had broken off. The melting tallow had filled this, though there was not a teaspoonful of it left, making it more like a small lamp. When I saw the rope I instantly pushed the coil over the edge into the pit. I heard the end splash in the water. Then I stuck the stalactite in my cap and started down the rope, knowing nothing of how far it might be, nor ever having tried to go down any rope before; indeed, in my right senses (for I was truly out of my mind) I doubt if I had had the courage to do it.

Down I went, hand under hand, till I found my feet in the water; but pushing against the wall I managed to swing out enough to land on the ground. Then I peered into the darkness and called out "Captain!" with my last strength.

"Here, Jud!" I heard as if coming from deep underground. I could not tell which way to go, so I stood with my lamp blazing finely in my cap, and in a moment the Captain came falling over some rough rocks, and I ran forward to him. Then it happened that my very last grain of strength was gone, and I remember only of beginning to sink down, and not even of striking the ground; and the next thing I knew as I opened my eyes was a great blaze of flame as if the cave had been on fire; then I saw it was a torch sticking in the ground, and that the Captain was kneeling beside me splashing water in my face and eating something, taking fierce bites, like a wild beast it seemed to me.

"Eat it, Jud; eat it!" he cried, thrusting something into my hands, and I fell to doing so, also like a beast of prey, I think; only knowing this, that what I was devouring was soft and greasy, and I truly believe it was five minutes before I came to realize that I was bolting cold, half-roasted fish.

Till the last of the fish was gone we neither of us spoke one word, any more than two dogs might have done; and sometimes I have thought that we growled at each other and fought over the last mouthful, but I suppose we did not; it was only after we had finished

(there was little enough of the fish, though we ate it, bones and all) and drunk at the river that we could afford the time to talk; then the Captain said:

"Jud, you came in the nick of time with that rope. How did you ever manage to get it here at all, and you so weak?"

Whereupon I told him the whole story as I have written it here. The Captain's eyes opened wider and wider as I went on, we being now both enough refreshed so that we had the life to be surprised; and when I had done he thought some minutes and then said:

"Well, Jud, I don't know how it got here, but it must have come by hands. I suppose Isaac Liverpool or some of his gang brought it for his own purpose, and you missed each other on the road in some way. They must be all around us, and we had best keep out of their sight if we can. We have had a little food, and perhaps we can get more and then find our way out."

"But tell me how you got out of the water after your fall?" I said, anxiously.

"I don't rightly know, but I suppose I had sense enough left in me after I struck to flounder out, because after a while I came to myself lying half on the ground and half in the water. I could see nor hear nothing; then I called to you, and getting no answer thought I would crawl about and find the fire. But I went the wrong way, and had been creeping among rocks and pits and pools of water for what seemed like hours when I heard you call. After you flopped down in that faint I took your candle and could see where I was, so got through that hole there and struck the stream again and followed the shore around a corner

The river, which was three or four yards wide, disappeared a few rods farther on. In the soft clay we saw some boot tracks. We went on very cautiously and quietly, keeping as much as we could in small holes and passages, and often hiding our torches and listening with all ears. We were surprised at the height of the rooms and the bigness of the stalactites. The torch-sticks gave more light than our candles had done, so bringing out the beauty of the stalactites, which were of all shapes and sizes. In one place we saw high up on the wall where the water had seeped down and made a great hanging curtain of drip-stone, as some call it, looking like nothing so much as a big, white woolen blanket hanging up in folds. We saw another which looked like a stack of wheat; with others in all sorts of queer shapes.

For the most part the floor seemed to be in a general way quite level, though there were many heaps of rocks and pits and domes. We tossed small stones into the pits and they did not seem to be very deep, but the domes stretched away up and we could get no notion of their height.

"This is more as I've heard folks tell about Frontenac Cave," said the Captain. "We're coming down where it has been explored. If we can keep those fellows from getting sight of us and find a hole leading out we'll be all right."

"I'd just about as lief find where those fish came from," I said.

"Ay, that's what we need," answered the Captain with a smile. "That last meal was a little light. Besides, I guess it's been two hours," and he took out his watch. "Why, it's stopped," he exclaimed. "It must have stopped when I fell in the water—I might have known it." Nor could he make it start.

"I don't see how we're going to tell night from day without the watch," I said.

"Well, where you can't tell it doesn't matter," answered the Captain, no whit downcast. "Our appetite will always tell us when it's meal-time. The only thing to worry about is that it may not always be as easy to place the meal as the time."

We kept a sharp lookout for footprints wherever there was a dirt floor, but saw no more. Finally we got into a tunnel leading gently downward, and at a sharp turn came unexpectedly upon the river again, or upon some river. It was larger than where we had seen it before—indeed it was more like a pool or small lake, the tunnel enlarging and arching up over exactly like a cover on a great dish of soup. Suddenly the Captain dropped on his knees, crying "Fish!" as he did so.

Sure enough, there were fish in the water, not eyeless cave-fish, but regular open-stream fish, coming up to have a good look at our torch-lights.

"Yes, fish," I returned, more excited than he; "but what I'd like to know is how we're going to get them."

"Leave us alone for that," answered the Captain. "We've got to get them. Necessity, as they say, is the mother of invention. Let's see first if anybody else has been here."

The floor of the tunnel and bank were clayey, but there was no track or trace of any human being.

"Those fellows can't get their fish here, or they'd leave some marks of it," said the Captain. He fell to studying the surface of the water, and then went on: "There is no forward current in that water, but there is some sort of a movement. I think it's downward, and it must either sink into a full pit or take a curve downward and come up to the level beyond, either underground again or in the Zumbro River. I think from the river-fish being here that this is where it gets into the river like a big spring."

"Do you think we could hit one of them with a stone?" I said, a good deal more interested in eating them than in accounting for how they came to be there.

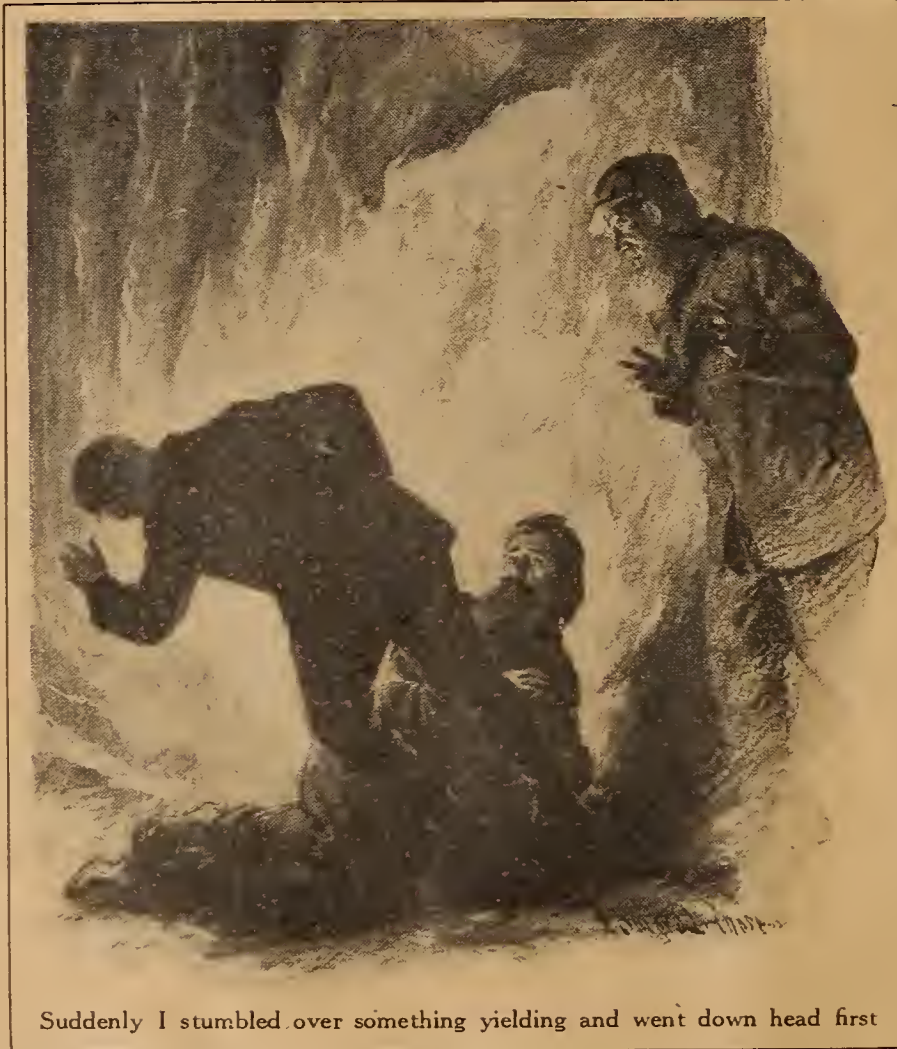
"We might, but it would scare all the others away, and you said you wanted a dozen. Let's see if we can't rig up a spear. I went on a whaler once when I was about your age and saw enough harpooning, so I ought to be able to land a catfish that way."

He sat down, pulled off his boots and from the tops cut three long leather strings. Then he whittled the ends of three of the torch sticks so they fitted together pretty neatly I thought, and wound them tightly with the leather strings, making stout joints. With the third string he bound the handle of his knife to one end of this odd spear, leaving the blade open, and then said:

"Now, off with your boots till I make a line for my harpoon," which I did, and he soon had a dozen or fifteen feet of leather string tied to the other end of his spear.

We turned to the pool again, and the fish crowded up to make out the meaning of our torch, one fine pickerel soon finding it to mean a dinner for us, since the Captain harpooned him as neatly as you please. He had to make several trials before he got another, but did so at last, this time a big catfish with his chin-whiskers. They both slipped off the knife when struck and were near floating out of reach, but the Captain stepped in the water and pulled them in with the end of his harpoon.

[CONTINUED ON PAGE 19]



Suddenly I stumbled over something yielding and went down head first

and came out by the fire. The fish lay half eaten on the rocks beside it, so I took it and came back."

"But where did you get the torch, Captain?"

"That was there, too; and there are more of them. There's a little hollow in the rocks filled with some kind of oil, fish-oil I suppose, and a lot of sticks soaking in it. I took one of them and lit it at the fire. I wonder if those fellows don't have anything to eat except fish. I wish I knew where they get their fish, though. We need three or four more to finish the meal."

"We need a dozen more," I returned. "Maybe they come out of this stream," but though we looked long we could see none.

The stick being by this time about burned out, we took it and started for the fire. We looked the ground over carefully from behind some rocks before venturing closer, but seeing no one we walked boldly up. Everything was as the Captain had said. There were fully a dozen of the sticks in the little hollow, and they had soaked up nearly all of the oil. They were about two feet long and a little bigger than your thumb, the most of them, and some that were not oil-soaked showed them to be small limbs of some soft wood, very light and dry. Larger sticks by the fire were of the same kind, and seemed polished by the water; so we made no doubt that they had been washed into the cave at some opening by a freshet.

"This seems to be one of their camps," said the Captain, "and I think we had best get away from it before they are back. They cannot be far, for the fire was certainly covered within a few hours. We'll just borrow some of their torch-sticks, and perhaps we may find where the fish come from."



The Children's Corner of the Dooryard

By Henry S. Curtis, Ph. D.

THE dooryard plays a more important part in American family life than is ordinarily realized. It is bound to be the center of family sociability and many of its pleasures during the warmer months, and for these uses it should be made suitable.

In the city and large suburban towns, where land is costly and the houses huddled together, there are no fences, as a rule, and nothing to distinguish one place from another. On the other hand, in the country and on the farm, where there is plenty of room, there is no need of crowding, and it should be possible to make the yard a thing of beauty.

There are many who do not care for fences around private houses, but to me the fence seems desirable because it adds a sense of privacy to the yard and the home, and it sets it apart as a thing by itself. It serves to suggest that it is not the place for the mowing-machine, the hay-tedder or the self-loader. It makes of the yard an institution, a separate entity, around which feelings and thoughts may gather. An evergreen hedge of privet or cedar may be a thing of beauty, or a woven-wire fence that is covered with flowers may be still more beautiful.

Flowers are Restful

The yard should contain a few fine trees, if possible, for the shade, the birds and the romantic associations that gather around trees. There should be a few flowers and a few flowering shrubs. Country life is all too materialistic at best, and it is most cheering to drive by a country home and find a fine bed of flowers in the yard, because it shows that beauty has not been utterly forgotten in the pursuit of gain. Flowers are very restful after a hard day's work, more so than has been generally realized.

Whenever the mind can slip back from a period of

conscious effort to dwell as it should, for a time on pure sensation, it is one of the most restful things that it can do; and a bed of beautiful flowers forever holds out that invitation. The flower-bed is also one of the easy ways of cultivating the sense of beauty and love for natural things in children, and this is one of the tastes that must be cultivated if country life is to be as attractive as it should be.

Yet more important than all else is the corner of the dooryard allotted to the children for play. The first playground of the children is the house itself, but during the years from two to five or six most of their play is in the yard, and this fact should be recognized. There should be considerable space which is suitable for them to run in, and provision must be made for their games. This provision is a part of the necessary education of children, for it means more in the proper development of their minds and bodies than the superficial observer realizes.

A Sand-Bin

One of the most valuable provisions for the development of the unfolding mind of the child is a sand-bin, and every dooryard where there are small children should contain one. It should be placed under a tree or in the lee of the house where it will have shade during the hot hours. The bin should be five or six feet square and ten or twelve inches high, with a flat broad seat or molding-board running around the top of the bin. It does not need a bottom. The best sand is the fine white sand from the sea or lake shore, but any plastering sand will do. The children should be provided with pails and large spoons with which to dig and mold the sand, and they should be encouraged to lay out the road, the creek, the farm or the neighboring village in the sand-bin, and there to dramatize the tales they read or hear. It is well to have a quantity of small round pebbles and let the children outline their drawings with them. Children will enjoy a sand-bin from the time they are one year old until they are ten or twelve, for there is no play interest that is more universal than this love of digging and molding shapes.

From the limb of a tree, if possible, there should be suspended a rope swing or two. Swinging is an experience that perhaps harkens back to our original tree-top home. At any rate it makes a universal appeal to children, and they cannot afford to miss the experience. It is worth while to have a lawn-swing in the yard also, both for the children and the adults.

A Tent or Playhouse

Every yard should contain a tent or a playhouse, or both. If there can be only one, the tent is better, as that serves a great variety of uses in the country. It can be used for sleeping out-of-doors in the summer-time, for fishing and camping trips and countless adventures that would not otherwise be thought of. The tent has, however, rather too light an interior to be a first-class playhouse. A playhouse should provoke the imagination a little and be dim enough within so that all cannot be plainly seen. If it could be a cave, that is the sort of a playhouse that almost any group of children would prefer.

The playhouse should not be too much like a real house. It is quite as well if the children make it themselves. A fence-corner that is boarded up and roofed over, or a very primitive affair that can be made of rough boards by the children themselves, is very much better than one built by a carpenter out of rosewood. A house in a tree is the best of all, especially if it gives an outlook as well, and if a suitable tree is available it takes only a short time and a very little ingenuity to make the house. If it is only a platform with a railing around it, it will serve its purpose in the development of the child mind, which is to arouse the imagination and the poetic side of its nature, providing a joy in living which the matter-of-fact child whose vision is stunted in this respect can never acquire.

A Small Slide

Finally, the children's corner of the dooryard should have a small slide. From time immemorial children have slid down the cellar-door and the banisters, and down from the hay-loft, not always com-

ing away unhurt. But with a small properly built slide there is no danger of the children getting hurt and it affords much pleasure for the little ones.

A kindergarten slide nine feet long can be purchased for seven dollars and fifty cents, and these inclines, set up in cities in the public playgrounds and kept smooth by the number of children who slide down them, rarely are the scenes of any accidents.

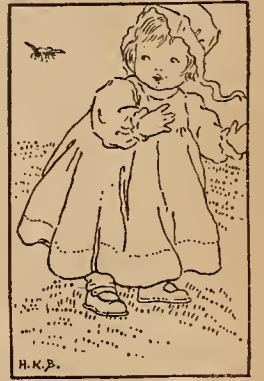
A slide in the dooryard will be used almost constantly by the little children if there are enough of them about to make it interesting, as witness a slide in one of our neighbor's yards which is used continually by a group of children, the oldest of whom is five and the youngest two. They are all able to go down head first, on their backs, and in nearly every other conceivable fashion, and so far as I know there has not been a single child hurt.

Give the child a definite place in the dooryard. Give it a running room and playing room, give it tools with which to exercise its mind and its imagination. That is one of the duties of the parents of to-day.

Pets for the Children

Equally important to the children's development are the pets provided for them. Children are naturally fond of animals. The ownership of a dog or cat gives the child a certain dignity in his own eyes and its care is a valuable training.

Chickens make good pets for boys both on the farm and in the village, where leftovers from the table will keep a considerable number, so that they do not cost much outside of care. The chickens will furnish a good deal of valuable knowledge, keep the children out of mischief, give them regular duties to perform, a good time and furnish spending-money besides.



Reading for Young Folks—Conducted by Cousin Sally

Messages from Mommie

By George Saint-Amour

MY MOMMIE has been away to visit Auntie Anna Lynn for two weeks, and my daddie was lonesome before she had been gone three days. He kept talking about a message that Mommie would "wire" when she was coming back.

So I asked him about it, for I was lonesome too, and he told me how Mommie's message would be put on the wires, and how it would come to our house, and then we would go to the depot, and Mommie would get off the train, and we would be happy again.

So every day after Daddie would go to work I would sit on the steps in front of our house and watch the telephone wires. But no message from Mommie.

Then I thought maybe the message was afraid to come to our busy street, for there are trolley-cars and wagons and automobiles and children and men and women, and I just said to myself that I would go down near the woods where I had seen some wires and watch!

And I went all alone. I walked on my tiptoes to a big tall pole which holds up the wires, and without saying one word I just stood there and looked at the wires away up in the air.

Pretty soon they began to hum and buzz, and you may believe that I listened hard, as my Daddie says when he explains things to me which are not easy to understand.

And a message came, and it said: "Mommie is lonesome for her little boy and Daddie, and she cried last night to see them." (It sounded just like my Mommie's voice when she sings me sad little songs.)

"Mommie hopes that her little boy has been good," the wire said, "and that Dad-

die has had plenty to eat and is well, and that he is not working too hard.

"Mommie is coming home just as soon as she can, coming back to her little boy and Daddie, for Mommie has found out that they are about the two uicest men"

(she called me a man like Daddie, and she does that only when she wants to make me feel very good) "she knows."

Then the wires stopped buzzing and humming, and I was afraid that that was all of the message. But I waited a little while longer, for I never get tired hearing my Mommie say things like that. And the wires began to buzz again.

Coming, Bobbie; coming, Daddie; Coming home to you. Mommie's homesick, Mommie's lonesome, Just to see you two.

And so I ran home as fast as I could and waited and waited for Daddie. When I told him about the messages he laughed and laughed and

took a little yellow envelope out of his pocket and read it to me, because, he said, the handwriting was too bad for me to read.

"I am coming home to-morrow to the two dearest men in

all the world," his message said. But I don't think it was so pretty as the message I got down near the woods.

Then Daddie let me sleep with my head on his arm that night, and I woke up in the morning when the birds were singing, and I do believe that old Robin Red-breast was saying something about my Mommie too.

Cousin Sally's Letter

DEAR COUSINS:

Being afraid to "try" never accomplishes anything. Thinking about "trying" and not going ahead is almost as bad as being afraid. And undertake something with the thought, "I'll try, but I don't think it will do any good," never won prizes. For, to win, you've got to hustle, never let up and not know there is such a fellow as

that skulking rascal, Being-Afraid. Our boys can win prizes and show older, more experienced farmers that they, too, will be able to make farming pay. Yes, and with perseverance coupled with real work during warm weather, instead of making every day between terms vacation, they can surprise an entire State and make themselves better fitted for a man's place in the world later on.

North Dakota, up to 1912, was not considered a corn-producing State, but wanted to be, and so the North Dakota Better Farming Association decided to offer a prize to coax farmers into trying extra hard to see if corn could be grown in paying quantities.

Harper Brush, who heard of this fifty dollars in gold prize, while not a farmer, was a farmer's son who couldn't see why North Dakota had to lag behind other States when it came to raising corn.

He made himself forget he was competing with experienced farmers and thought only of what he could do. His father allowed him four acres, where he planted a hardy grade of seed-corn. He was bound to get results.

Having no horses and farm implements, he worked for his father and neighboring farmers in return for the use of the implements and horses. All summer his crop came first; yes, even ahead of fishing jaunts. And when fall came everyone saw twelve-year-old Harper's corn was the finest in the county. The yield was 71.1 bushels of hard, mature corn to the acre; bettering everyone else's yield by nearly five bushels. All told, his four-acre plat returned nearly \$400 for his summer's work and put North Dakota in the Corn Belt.

Winning success means having your eyes wide open, your mind trained to think and willing-to-work hands.

Faithfully, COUSIN SALLY.



The wires began to buzz

Cool Delicacies for Summer Days

Cool Desserts

By Elizabeth L. Gilbert

ALL these desserts should be made several hours before serving-time, so that they may be ice cold, or as nearly that as is possible. They are all inexpensive, tested recipes and can be served alone or with some dainty cake or small wafers.

Chocolate Pudding—One pint of sweet milk, one-half cupful of granulated sugar, one large tablespoonful of corn-starch dissolved in a little cold water and two scant tablespoonfuls of grated chocolate, melted. Boil until quite thick, remove from fire, and add one teaspoonful of vanilla. Dip a deep dish in cold water, drain it, pour the pudding in, and put on ice or on a cold cellar floor. At serving-time turn out on a platter, and surround with whipped cream.

White - and - Yellow Pudding—Dissolve one tablespoonful of corn-starch in a little cold water, add a small pinch of salt and one-fourth cupful of sugar; pour over it one pint of boiling water, stirring constantly. Stir in the whites of two eggs beaten stiff, boil one minute more, and pour in a square granite pan which has been dipped in cold water. Set in cold place. Make a custard of one cupful of sweet milk, two beaten egg-yolks and one-half cupful of sugar. Boil, and flavor with lemon. Let get cold. At serving-time cut slices of the white, and pour a spoonful of the yellow over it.

Lemon Custard—One cupful of sugar and one tablespoonful of flour mixed. Add one cupful of boiling water; boil till clear; add one teaspoonful of butter and the juice of one lemon; then add one beaten egg; stir until thick. Serve this, very cold, in sherbet-cups with a spoonful of whipped cream on top.

Ideal Rice Pudding—Two tablespoonfuls of rice, three tablespoonfuls of sugar, one quart of creamy milk, one-half teaspoonful of grated nutmeg and one-half teaspoonful of vanilla. Bake until thick and creamy. Have a moderate

oven. Remove the first and second brown skins that form on your pudding, and when the third has formed the pudding will be done. Wash and drain two cupfuls of seeded raisins. Boil these until done. Drain. At serving-time stir the cold fruit into the cold pudding. This does away with rice pudding discolored with the raisins baked in it.

Raspberry Delight—Whip one pint of thick cream, flavor, and sweeten. Into this stir one level tablespoonful of minute gelatin which has been dissolved in a little cold cream (unwhipped). Beat again for a minute, then fold into it a pint of raspberries which have been washed and sweetened. Serve this very cold.

Tapioca Ice—Four tablespoonfuls of pearl tapioca, soaked overnight in one pint of cold water. In the morning add one cupful of water, cook in double boiler till clear (if too thick add a little water). Then add the juice of one large lemon and one cupful of sugar, and let boil again. When this is cold add one cupful of red raspberries and one cupful of sliced white peaches. Serve with whipped cream.

American Favorite—One pint of boiling-hot milk and one small envelope of minute gelatin dissolved in hot milk; add two beaten egg-yolks, four tablespoonfuls of sugar and one-half teaspoonful of vanilla. Stir until thick. Then add two beaten egg-whites. Have ready six small cups which have been dipped in cold water, and a large strawberry in the bottom of each. Pour the pudding in, and set in a cold place until hard. Serve with whipped cream.

Date Tapioca—Soak four tablespoonfuls of pearl tapioca overnight. Let come to the boiling-point in one pint of sweet milk, and cook slowly till clear. Then add one-half cupful of sugar and two beaten eggs, and cook two minutes longer. Chop one cupful of dates, pour the pudding over them, cover with whites of two well-beaten eggs, and brown in a hot oven. Serve cold.

Drinks That Clink

By Mary Eleanor Kramer

Grape Cup—To one pint of home-made grape juice add the juice and grated peel of four lemons and an equal number of oranges. Dilute with one quart of cold water. Serve ice cold in a glass.

Fruit Punch—Dissolve one pint of sugar in one pint of cold water, add the grated yellow rind of one orange, and bring to a boil. Strain this syrup, and add the juice of two oranges and two lemons and one quart of either red raspberry or strawberry juice. Set in the refrigerator until ready to serve. Pound ice fine by placing in a coarse muslin bag and beating with a hammer. When serving the punch place on the top of each glass a heaping tablespoonful of this ice; the effect is that of heavy frost on each glass, and makes a most attractive drink.

Kumiss—Put into a bowl one-half cupful of milk heated lukewarm, two teaspoonfuls of granulated sugar and one third of a yeast-cake. Stir until the yeast-cake is dissolved. Pour this mixture into a bottle with a patent air-tight stopper, first scalding the bottle well. Pour in fresh milk until the bottle is two thirds full, fasten down the stopper, and shake hard until the contents are well mixed. Set in a warm room for six hours, or until the contents are a mass of foam, then set on ice until ready to serve. Kumiss is very like effervescent buttermilk.

Banana Cup—Mix the juice of one orange with one and one-half cupfuls of grape juice and the same amount of water and sugar. To the mixture add four sliced bananas. Boil, and strain. Serve in sherbet-glasses, topped with whipped cream and diced bananas.

Mint Julep—Wash the mint well. Pick off the leaves to the amount of one coffee-cupful. Put these into a stone jar with one quart of chopped ice. Stir until the leaves are thoroughly bruised and the flavor extracted. Strain off the water,

and add the juice of two oranges and six lemons and one pint of sugar. Put on ice. When thoroughly cold, serve in tall, thin glasses, with a sprig of fresh mint and a very thin slice of lemon in each glass.

Sangaree—To one quart of rich, unsweetened grape juice add one-fourth cupful, each, of cold water and sugar syrup and one-half teaspoonful of grated nutmeg. Just before serving fill glasses two thirds full of crushed ice, and pour over it the sangaree.

Currant Shrub—Heat two quarts of ripe currants, then strain through a jelly-bag. To each quart of juice add three quarters of a pound of sugar, and stir until dissolved. Add the juice of one lemon, and dilute with cold water. Place on ice, and when ready to serve pour over cracked ice, and ornament each glass with a bunch of ripe currants or a slice of lemon.

Raspberry Mint—To one quart of lemonade add one-half cupful of raspberries and the leaves of a sprig of mint. Chill for two hours, and serve in tall glasses, each of which is garnished with a floating sprig of mint.

Iced Tea—Make a strong tea, strain, and cool. Dilute with cold water, and place on ice. Serve in glasses half full of crushed ice, with an eighth of a lemon to each glass. If preferred mint-leaves may be used in place of the lemon, or both may be served.

Lemonade Handy—Boil together two quarts of water and four cupfuls of granulated sugar for ten minutes. Remove from the fire, and add four and one-half cupfuls of lemon-juice. Let cool, seal in glass jars, and keep in a cool place. When lemonade is desired dilute a small amount of the lemon syrup with ice-water.

Iced Coffee—Make a good, strong coffee, strain and sweeten it, and allow it to cool. Serve ice cold, with a spoonful of whipped cream on top of each glass.

Two Simple Patterns for Bedspreads—By Evaline Holbrook

THE knitted square which is illustrated on this page makes a very handsome bed-spread, in spite of the fact that the pattern is so simple. Indeed, it is so simple that it could well be used in teaching a little girl to knit. The block is small so that she would not tire of it easily, and there are no complicated stitches to be lost from the needles.

The block is prettiest when made of German knitting cotton No. 12, although what sized cotton to use is largely a matter of choice. In making one of these bedspreads, however, it is wise not to select too heavy a cotton, which makes too weighty a covering for the bed, and which takes a strong arm to handle it when it is being washed.

Use No. 14 needles to do the work, and begin by casting on one stitch. Knit two in the stitch on needles. This is done by knitting one on the front thread and one on the back thread of the cast-on stitch.

Second Row—Knit two in the first stitch, knit one. Continue in this way, always knitting two in the first stitch of each row, until there are six stitches on the needle.

Sixth Row—Knit two in the first stitch, *purl two, knit two, and repeat from * to the end.

Seventh Row—Knit two in the first stitch, purl the purled stitches of the row, and knit the knitted stitches.

Eighth Row—Knit two in the first stitch, knit the purled stitches of the row, and purl the knitted stitches.

Ninth Row—Increase as usual, knit the knitted stitches, purl the purled stitches. Work in the dice pattern in this way until the pattern is six blocks deep, always increasing in beginning each row; do ten rows in plain garter stitch (which is nothing but plain knitting worked back and forth), six rows in the dice pattern, ten rows in plain garter stitch, six rows in the dice pattern. Work is now in the center of the block.

First Row After Center—Knit two together, and knit the remainder of the row in the dice pattern as usual. Narrow one stitch in beginning each row, and work five rows more in the dice pattern, ten rows in garter stitch, six rows in dice pattern, ten rows in garter

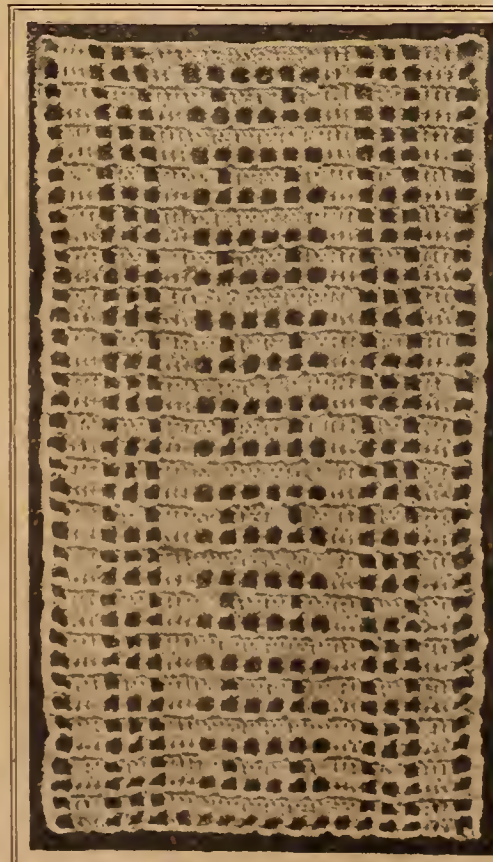
stitch and twelve rows in the dice pattern. Then knit in garter stitch until one stitch remains, and bind off.

After enough blocks for the quilt are made, they should be overhanded together, using the knitting-cotton. A simple crocheted scallop may then be worked all around; or a knitted lace may be sewed around the quilt. In sewing it in

like silk and is sold both in large skeins and balls. Carpet-warp could be used instead, or German knitting cotton No. 12. Work with a steel needle no larger than necessary to carry the thread.

Begin with a chain of fifty-nine stitches.

First Row—Turn, and double crochet in the eighth chain from needle, and one



THIS is a pretty and simple block for a bedspread which is so easy to make that we recommend it as a pattern for mothers to use in teaching their little girls to knit. It will make an attractive crib coverlid for little brother or a carriage blanket for little sister, and a beautiful present to give to any friend. Why not set the little girls to work on the porch or under the trees making these for Christmas—Christmas which seems far off now, but which every day brings nearer? Two blocks a week till Christmas, and how many blocks will you have?

place no fullness should be allowed except in turning around the corners.

The pattern for the crocheted stripe also is very simple and easily within the range of a child's capabilities. The piece photographed is made of perle cotton No. 5, which is a coarse cotton that looks

double crochet in each of the next three chain stitches. *Chain two, skip two, one double crochet in next chain. Repeat from * until fourteen holes are made along the row, after the final hole make four double crochet, then make one hole for the end of the row.

Second Row—Turn, chain five, one double crochet in the second double crochet and one double crochet in each of the next three stitches. Make three holes along the row, then work two double crochet in each hole and one double crochet in each double crochet, until there are twenty-five double crochet in all in the group. Make three holes with four double crochet after the third, one hole at the end of the row.

Third Row—Turn, chain five, four double crochet on the four double crochet group, three holes with four double crochet after the third, six holes with four double crochet after sixth three holes, four double crochet, one hole.

Fourth Row—Turn, chain five, four double crochet on four double crochet, one hole, two double crochet in next hole, one double crochet on next double crochet, one hole, one double crochet each in next three double crochet, two in the hole, one in the next double crochet, one hole, two double crochet in each hole and one in each double crochet until there are seven double crochet in the group, one hole with a group of seven double crochet after it, one hole with four double crochet after it, one hole with four double crochet, one hole at end. Repeat the third row, then repeat from the beginning of the second row for the length needed for the stripes. Make the final row of the stripes like the first row, then work three single crochet in each hole down each side edge.

Make about five stripes for the average-sized bed, and join them by putting stripes of linen between them. Instead of linen one might use gingham in some dainty color, to match the bedroom furnishings. All around the edges of the bedspread there should be a wide hem of the linen or gingham, and it would add considerable beauty if it were finished with a simple hemstitching. The ends of the crochet should be concealed inside the hem.

To go with the bedspread the stripe pattern should be worked with No. 60 crochet cotton and used to trim the bureau-set, towels and bed-linen. A most charming bedroom-set would be the result if this design were carried out.

Smart Fashions for Tub Fabrics

Designs by
Miss Gould

Drawings by
Mrs. Niles



A brightly colored Roman scarf may effectively trim the hat, pattern No. 2080.



No. 2080—Tailored Outing Hat

Pattern cut in one size. Quantity of material required, three fourths of a yard of material thirty-six inches wide. The price of this pattern is ten cents

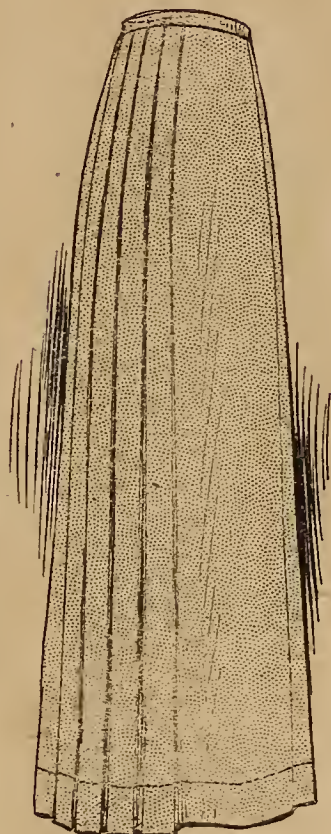


No. 2315

No. 2315—Low-Neck Blouse: Long or Short Sleeves

32 to 46 bust. Material for 36-inch bust, two and one-half yards of thirty-six-inch material, with one-half yard of thirty-six-inch lace and one and one-eighth yards of lace edging. The price of this blouse pattern is ten cents

ALL of the designs shown on this page are appropriate for wash fabrics. Many an attractive summer gown may be made from the most inexpensive material, provided the design is smart. The two dresses, pattern No. 2143 and pattern Nos. 2318 and 2319, are the sort of simple smart dresses every woman wants for practical wear, while for evenings and special occasions Nos. 2271 and 2272 is most charming. It would be especially pretty developed in cotton voile, plain voile being used for the dress itself and flowered or embroidered voile for trimmings. The separate skirt is always an essential, and pattern No. 2119 is both smart and practical. Pattern No. 2080 makes it possible for every woman and girl to make for herself a hat of wash material for knock-about use.



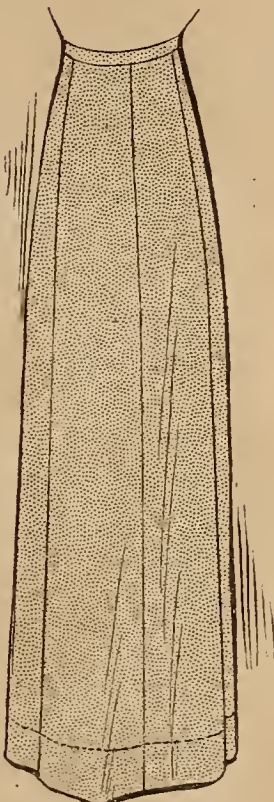
The above illustration shows the back of pattern No. 2119, which is one of the helpful and adaptable Woman's Home Companion patterns, it being possible to make three entirely different skirts from it: a plain six-gored skirt, a skirt with plaited back panel and one with both the plaited front and back panels.



No. 2271
No. 2272

No. 2119—Six-Gored Skirt: Plaited or Plain Panels

22 to 34 waist. Material for 26-inch waist, five and one-fourth yards of thirty-six-inch. When plain panels are used, one and one-fourth yards less of thirty-six-inch is required. Pattern, ten cents



No. 2153

No. 2153—Box-Plaited Tailored Waist

32 to 44 bust. Quantity of material required for 36-inch bust, four and one-eighth yards of twenty-four-inch material, or three and three-eighths yards of thirty-six-inch material. The price of this tailored waist pattern is ten cents

FOR all of the attractive designs shown on this page there is a practical, easy-to-use WOMAN'S HOME COMPANION pattern costing but ten cents. These WOMAN'S HOME COMPANION patterns cannot be purchased in stores or through agents; they may only be ordered from our three pattern depots. In order to insure a prompt delivery of your patterns, be sure to send your order to the depot nearest your home. The addresses of the pattern depots are: Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York; Pattern Department, FARM AND FIRESIDE, Springfield, Ohio; Pattern Department, FARM AND FIRESIDE, 1554 California Street, Denver, Colorado.

These patterns guarantee perfect-fitting clothes. Their style features are new but never so extreme that they are conspicuous.



No. 2143—Morning Dress: Closed at Side

32 to 46 bust. Material for medium size, or 36-inch bust, six and one-fourth yards of thirty-six-inch material. The price of this dress pattern is ten cents



No. 2271—Low-Neck Waist with Pointed Bib

32 to 40 bust. This pattern, ten cents

No. 2272—Three-Piece Skirt with Straight Flounce

22 to 30 waist. Width of skirt, two and one-fourth yards. Pattern, ten cents



No. 2318—Guimpe Waist: Front-Closing

32 to 46 bust. This pattern, ten cents

No. 2319—Four-Piece Skirt: Front-Closing

22 to 36 waist. Width of skirt, two and one-fourth yards. Pattern, ten cents



No. 2183—Bib Apron with Flounce

One size only. Material required, three and one-half yards of twenty-seven-inch material, or three yards of thirty-six-inch material. This pattern, ten cents



No. 2318
No. 2319



No. 2143



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FARM AND FIRESIDE Springfield, Ohio

Vegetables for the Farmhouse Table

Planting the Kitchen Garden to Give Variety for Late Fall Use

By Ida M. Angell

THE farmer's wife must depend to a great extent upon the kitchen garden for the fresh vegetables for her table, and from its small patches she secures the variety the appetite craves. There is a popular idea that gardens are naturally on the wane when midsummer comes, but much can be done with a careful succession of sowings and late summer plantings to give them a greater amount of efficiency and to provide, long after the average family resorts to canned or winter vegetables, the fresh green varieties commonly gathered much earlier in the season.

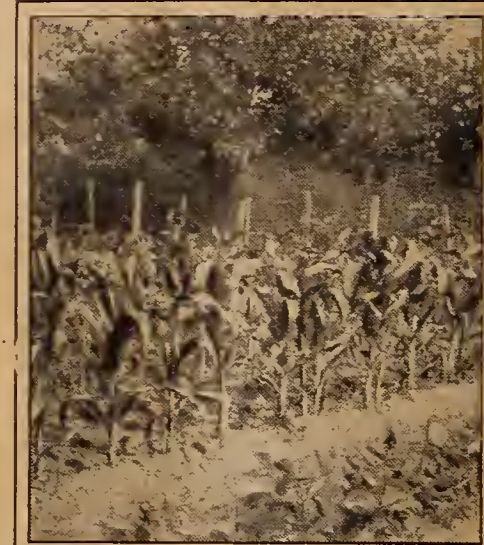
It is surprising how many vegetables will yield a good crop before frost, if sowed after the first of July. In a garden in eastern New York our best yielders were bush wax beans, extra early bush Limas, cucumbers, squash, carrots, radishes, corn (extra early variety), parsley, lettuce, beets and kohlrabi. Others were successful in a less degree, such as potatoes, pole Limas, pole string-beans and peas (an extra early variety). To these lists may be added the vegetables that are ordinarily sown in midsummer, like turnips, spinach, endive, onions, celery and still others that are of great interest to the gardener who plants on a small scale.

String-beans were at their best in the early fall; sowings made from the middle of July to early August gave us the finest beans of the season. Young carrots and beets, pulled while they are sweet and tender, are superior to the large tough roots that will be produced at this season by the earlier sowings, and midsummer sowings of these vegetables therefore are really a necessity. Early August plantings of lettuce produced leaves large enough for the table in about six weeks and heads during October and early November. Midsummer sowings of corn yielded excellent ears in October and even in early November, frost being unusually late. The Henderson bush Lima is a quick-maturing variety and will produce a crop before frost when sowed early in July. It is not as choice as the green pole sorts, but makes a very good succession variety, and if not specially needed for the table during the bearing season is still worth while planting for dried beans. Early July sowings of cucumbers and squash yielded for six weeks or more, until killed by frost; these are recommended in any case, as earlier ones are quite often destroyed by insects or drought. Green tomatoes, eight inches in circumference, were picked from plants of an early July sowing, and supplied material for pickles. Parsley is an excellent plant for midsummer sowing, to lift later for the winter window garden.

Early plantings of radishes, lettuce, spinach and the first peas are out of the way in July, leaving room for the later seeds. In August several more of the early vegetables have passed their usefulness and may be cleared off, such as beets, carrots, early potatoes, lettuce, peas, radishes and onions, as well as the first corn and early beans. These and the rows that have very nearly run their course might as well be removed to make room for midsummer sowings.

As important as the sowings themselves is the pressing of the soil after they are sown. Firming of the soil after sowing is done to draw the water in the soil in order that it may help germination as it passes off into the air. This treatment is especially necessary with midsummer sowings, because the soil at this season is usually too dry for the seeds to germinate without help. Just as soon as the growing seedlings are large enough cultivation should begin, to check the evaporation. Moisture escapes from the soil either through the plants or by evaporation; if through the plants it feeds them on the way, as their rootlets are too small to take up the plant-food unless it is in solution. If the moisture be lost through evaporation it carries the plant-food too near the surface to be available.

RECORD OF OUR JULY GARDEN	
Vegetable	Yielded
Bush wax beans	..Aug. 20th to Oct. 20th
Bush Lima beans (extra early)	..Sept. 24th to Oct. 7th
Cucumbers	.....Aug. 26th to Oct. 15th
Squash (summer)	..Aug. 19th to Oct. 13th
Carrots (early)	..Sept. 25th to Nov. 11th



Section of August garden as it looked September 7th

Corn (extra early)	...Sept. 22d to Oct. 8th
Parsley	....Potted for kitchen window Oct.
Beets	.....Young roots to store in sand
Kohlrabi	.....Sept. 1st wk.—stored
Potatoes (early)	....Oct. last wk.—stored
Pole Limas (early)	...Oct. 3d wk. to frost



July and August sowings

RECORD OF OUR AUGUST GARDEN	
Vegetable	Yielded
Bush string-beans	.....Sept., 3d week
Peas (extra early)	.....Oct., 1st week
Carrots (early)	.....Nov., 3d week
Lettuce	.....Sept., 2d week
Corn (extra early)	.....Oct., 3d week
Radishes	.....Sept., 2d week
Turnip (white)	.....Oct., 3d week
Spinach	.....Oct., 3d week
Beets	.....Sept., 4th week
Endive	.....Oct., 3d week



Carrots sowed at the end of July and pulled in the middle of October

To prevent this the best way is to provide a surface mulch by stirring the soil. The looser and drier the surface soil, the greater will be its value in breaking connection between the moisture in the soil and the air above. Every ten days is none too often to cultivate our gardens. August brings the first hints of fall, but the work in the garden which supplies the home table is not yet done. The gardener must not be idle in midsummer if she wants fresh vegetables after the

neighbors' gardens have dried up and been left to their fate. Mulching the roots of moisture-loving vegetables in August will save worry about drought.

It is encouraging to think that as the profits increase the labors decrease. A garden that yielded fifty dollars' worth of vegetables during the season called for an average of two hours' labor a day in July and yielded about a seventh of the whole harvest, while in August one hour a day sufficed to keep the garden in order, and it was yielding nearly a third of the total harvest. If the farm housewife has time to do this work herself she will find it not only a pleasant occupation, but one which will give her the outdoor exercise so necessary to her health and looks.

The gardener who sows in midsummer must prepare to deal with her two chief enemies, drought and frost. Proper watering and thorough cultivation will do much to combat the first. Perforated tin cans, set in the ground, and trenches made by a wheel hoe, and covered again with the same tool after watering, are greatly superior to a sprinkler, for the latter is merely a waste of time, drawing the roots to the surface, where they will probably suffer greatly from later heat and dryness. Frost can be fought off for some time by coverings spread on skeleton frames, made of strips and wire, every cold night.

A Neglected Vegetable

By Penelope Kay

ALTHOUGH maturity is usually considered necessary to the healthfulness of fruit and vegetables as food, few people think of ripe cucumbers having any food value; it is the green or immature cucumber that is sought, despite its dubious reputation for digestibility, and eaten as a relish or salad, while the ripe one is consigned to the compost,—or with the assistance of small sticks fashioned into the similitude of a nondescript animal for the amusement of children! Yet the ripe cucumber is worthy of serious consideration. Prepared for the table after the manner of summer squash, it is a delicious substitute for it, and is even preferred by some people because of its more delicate

fiber and flavor. Anyone who has tried it will sympathize in a degree with a Danish cook who, returning from a country trolley ride, said: "It cut me to the heart to see so many ripe cucumbers wasting in the fields."

In Denmark it is a much desired delicacy, not only as boiled or baked like squash, but also as made into a sort of sweet pickle after the following recipe: Cut each cucumber in half, lengthwise, remove seeds, and pare. Place in a large bowl, alternating a layer of cucumbers with a layer of salt. Let it stand overnight, then dry each piece in a clean towel, and place in an earthen crock.

Mix together white vinegar, sugar and spice in proportions of a cupful of sugar to a quart of vinegar, mace, stick cinnamon and pepper-seed to taste. Heat this to the boiling-point, then pour it over the cucumbers, and let it stand twenty-four hours. Then drain off the liquid, and let it come to a boil again. Pour over the cucumbers, and cover.

This will keep several months, and served with meats is appetizing.

The American housewife could learn much economy in the use of fruits and vegetables from her European sisters.

Analysis of our edible weeds shows that they possess powerful medicinal qualities. The dandelion, for example, is replete with tonic salts and is aperient, besides being a natural liver medicine; the milkweed is a perfect tonic for the kidneys and a general cleanser of the system; the common yarrow is a good sprug tonic for children; while red clover is one of the richest of all nitrogenous plants, and utrogen is one of the most strengthening elements.

Thoughts for Sunday

Workaday Happiness-Bringers

By Lilly M. Johnson

"LIFE is a burden," wails one friend; "Life is a joy," sings another. Both are dear, well-meaning women, but there is this difference between them, one needs to be propped up, petted and soothed, the second stands alone and helps others. The reason for the discouragement of one is: "Every day's the same old round—dishwashing, taking care of the children, looking after the house." The joy of the other comes from: "I love my home, the children are a comfort, and I like to know I am doing my part."

One has learned that if you would progress, the every-day life is the only one we have to do it in. The other does not seem to care to learn that the every-day has its happiness side.

I shall never forget the look of horror upon the face of the one when, after listening to a rignarole of John's slackness in getting ready for school, the need of lengthening Edith's dress and the care the house was, I said, "Mrs. Allman, it seems to me if you would turn the corners of your mouth up instead of down, and would remember the sun *does* shine, you would be far happier." She thought my remark brutal; I meant it kindly.

There are none of us who do not have day-dreams of what we would like our life to be, but sometimes we do not seem able to realize that the best way to prepare the happy future lies in making the best and most cheerful use of the present. For, after all, the years are made of days; and it is the day-to-day thoughts and acts which mold our future. They are what count in the final summing up.

The average woman's workshop is her home. The world is very old, but nothing has ever been found which exceeds the worth of the dutiful daughter, the gentle wife or the wisely loving mother. Nature knew what the oncoming generations needed, needs which tender womanliness can best supply, charitable love, hope and an all embracing faith.

Home-making can be one of three things: a success, a semi-success or a failure. It rests with the woman. The man provides the home; the woman's

share is to care for it—no lesser part. If the woman is wise she learns the art; if she be only partly wise she shirks her lessons, and if she is shiftless she ignores her part and expects fate to provide a paragon of virtues in her husband. Now, the majority of men are presentable, well-meaning and good-hearted, but the saints have already been translated to heavenly spheres, and girls delude themselves when they expect to find unattached specimens whom they can break into home-makers as well as home-providers. Marriage is meant for teamwork, not for one to be tugging east and the other west.

The girl or woman who is well rounded will know she must try her wings out before she can soar. She will realize womanhood is meant to give her an insight into its latent possibilities, and will bring her energies to bear upon present duties, not hang fire listlessly waiting for a later great big opportunity.

I do not believe a better example of using the every-day in making the desired real has ever been shown girls than the life of Louisa May Alcott. She disliked washing dishes, saw no glamour in redding up or bright romance in cooking—for a while—but she went ahead in thorough fashion just the same, letting her fancies soar while her hands were busy doing the homely tasks. She learned to glorify the commonplace. (Don't you think it was because she was *willing to see*?) Later the discipline of the denying years brought forth the flowers of realized dreams. The underlying romance of the every-day lovable home was woven into "Little Women" and her other famous stories.

And so it can be with every girl. She may never become a noted writer, artist or singer, but she can fit herself for the best which can enter into her life, and hand in hand with those she loves ascend to the crest of the mountain called Peace.



Does the day begin for you with a song? Has it plenty to do till the shadows fall? Can you touch some heart and make it happier and better? Does it bring you enough to meet the needs of yourself and those you love?

Moses Called to Deliver Israel

Sunday-School Lesson for July 20, 1913
Read Exodus, Chapters 3 and 4

WE FIND Moses watching the flocks of his father-in-law upon Mount Horeb, when God appears to him in the burning bush and calls him to become the Shepherd of Israel. This is the birthday of Hebrew prophecy. Having received the best education of Egypt and having lived heretofore a life of luxury in the palace, Moses had withdrawn forty years ago to the solitudes, to watch the wonders of the sky by day and night, to fulfil the simple but important duty of tending herds and to enter into the lives and feelings of pastoral people. Here he attained to a wisdom which led God to call him to the great leadership. Does this not teach us the value of simple duties and communion with nature? At first Moses is afraid of the great work, but God said: "Certainly I will be with thee." We are taught self-reliance through reliance on God, in any work which He may command us to do.

Moses' Request Refused

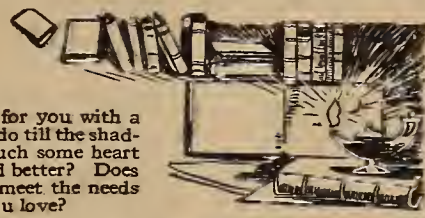
Sunday-School Lesson for July 27, 1913
Read Exodus, Chapters 5 and 6

MOSES makes his request of Pharaoh in vain, and Israel distrusts him because he has failed. We are taught that we must be brave enough to incur defeat and distrust without discouragement, and to prove our sincerity and our power to succeed by a continual renewal of effort. Such men become leaders.

The Keepers of the Light

By Haryot Holt Dey

LIFE-SAVING stations do not take care of themselves. Someone must live there to keep the lamp in order. It is not a very exciting life, living out at sea



where there are no neighbors. And yet there must be a wonderful uplift about tending the light and helping it to send its rays far out to sea to give courage and hope to some storm-tossed ship on the dark nights when storms beat high.

This is a good thing to think about. Maybe you are the keeper of a light in a life-saving station. But for you some mariner whom you know, would go to pieces on the rocks in no time. Just at the moment when he thinks his leaky old bark is a wreck, he looks up, and there YOU are with your light, God bless you!—its rays piercing the darkness, and giving him courage.

Keeping Ideals Bright

By Josephine B. Krieg

IT IS not in the first rush of our happiness at holding in our arms the greatest gift of God, that we need to be reminded to keep our ideals bright. It is later, when one or two or more little ones are clamoring for attention, when everything needs doing at once and there is only our one pair of hands to do it.

If you have begun to suspect yourself of a little letting down, ask yourself a few of the questions below and you can speedily tell whether you are in need of a little quiet "think" about the relative values of things.

Are you thinking, each meal you give your children, of what their growing bodies require?

Are you particular about their bed-time?

Are you careless about their hair or dress, or maybe the cleanliness of face and hands at meal-time?

Do you know the children they play with?

Can you see their side of any question as well as the grown-up side?

Do you take time to listen to and an interest in their small adventures?

Have you got into the bad habit of reminding them of the work they make or the money they cost?

Are you willing to leave them with just anybody to get a few hours' freedom?

Do you watch for and correct improper uses of words?

Do you take pains to answer their questions?

IN FRONTENAC CAVE

[CONTINUED FROM PAGE 14]

The next thing was to get our fish cooked, though I was hungry enough to have eaten them raw. We did not want to go back near the fire if we could help, having a fear that the outlaws might by this time be there; so we slung our fish over our shoulders and set out to find some wood, if it might be. It was a wearisome search, but just as we thought to give up and go back to the fire by the pit, outlaws or no outlaws, we chanced upon some sticks in one room and, turning down a little at one side, found ourselves in a tunnel which seemed to have once been the bed of a river, at least six yards wide. Its edges were strewn with small branches of bushes and trees, dry as bones and brittle, the bark and oftentimes part of the wood worn away by the water. There were whole horse-loads of them; later on we followed this tunnel for a quarter of a mile, but never found where they got in, and have since concluded that it was the overflow of a river which we did not discover.

We soon had a good pile of fuel and, finding a high dome near which promised to carry up our smoke instead of letting it scatter through the cave and betray us, we soon had a good fire going between some rocks. The wood burned well, and we put a flat stone over the fire, which was almost red-hot in no time. On this we fried our fish with no trouble at all, and I do not stick at saying that it tasted the best of anything I ever ate, barring only that which the Captain brought me after my foolish faint; though we had no salt, and only sharpened sticks for knives and forks. Indeed, the fish seemed so good to me that I found myself wishing Amy might have some of it, not realizing that she was where she could get all kinds of much better food. I fear I might as well confess that I often thought of Amy, and it saddened me to think how she must be worrying over the absence of her father. But I could not help hoping she missed me somewhat too.

When we had done, that is, when there was no more fish left, though I was still hungry, the Captain put his hand in his pocket and pulled out his pipe and clapped it in his mouth, holding it there in a weak

kind of way. Then he smiled, not a cheerful smile, but more of a sickly smile, and said: "I guess you don't know, Jud, where I could harpoon a pipe of tobacco?"

"No, I don't," I answered, "unless we could come up with the Liverpool gang while they were asleep and help ourselves to some."

The Captain looked up brighter. "Why," he said, "I'd almost try it if I had the chance. I've been two days without it now, and I've missed it about as much as I have victuals. And now I've had a meal, and a good meal it was too, I miss it more than ever." He put his pipe back into his pocket kind of sheepishly, I thought, and fell to pacing the floor by the fire. When he sat down he took the pipe out again and gazed at it a while and said: "If you never get into the habit you don't want it, but if you do you've got to have it. But I learned at sea, and what can you do on watch at night except smoke?"

We were soon sleepy, and knowing it must be far into the night stretched out by the fire and had the best sleep, it seemed, since we had come into the cave, as our hunger went nearer to being satisfied than at any time before, and the fire warmed us up, and a cave is, as I have said, somewhat too cold for comfortable sleeping without a blanket. Our fire brought out a good many bats, however, and the horrid things would come flitting about on their web-footed wings. They tell us we should hate no living thing, but I say plainly that I hate a bat.

In the morning, or at least when we woke up, since we knew no more than anything if it was morning or evening, we fixed the fire and then went to Fish River, as we called it, for more fish. We stuck to it this time (the Captain having made a better harpoon) till we had got a dozen fish, half of them cats, the oil of which we wanted for torch-sticks. We went back and had a meal fit for a king—indeed, I think I ate one fit and sufficient for two or three kings. Thus it was we prepared our torch-sticks: Laying a bundle of them in a hollow of the rocks, we cut up the catfish and put them on top. On this we then rolled red-hot stones,

and the oil frying out pretty well soon soaked into the sticks, though there was a good deal of a flavor of scorched fish round about. We named the place Fish Camp, which was natural enough.

Now if anybody ever reads this, and it chances he gets so far as this, he will thank me that I do not tire him with the account of our life for the next three or four days. I say three or four days, but of course it may have been more or less; I only know that we slept three times, and ate about twenty, though this needn't to signify, since if I could have had my way we should have been eating all the time. But we longed for some salt for our fish; and some beef-steak or potatoes or bread and butter would not have gone bad, especially after the fifteenth or twentieth meal of plain fish. Though we fried some of the fish on a rock and broiled others over the coals on a sharp stalactite, and thus made some variety.

But not much happened these days, however many of them there were. We hunted constantly, when not sleeping or eating fish, for a way out, but had no sort of reward. We were very cautious at first, but soon became convinced that there were none of the outlaws in that part of the cave. The fire which we had first seen at the dome was not kept up. The rope where I had come down was drawn up and we saw nothing more of it. We wanted very much to explore this part between the pit where we looked down first at the fire and the place where we pried away the stone with the gun, which place we called the Trap-Door, and the other Fire Pit. We suspected the gang might be there, nevertheless we were anxious to get into it, thinking it was our only hope of finding a way out. We decided there must be some way to get up besides a rope, since from the fire we saw they had been down; for if there was no such way, and they had a rope before, why did they take ours?

We had found a way which seemed to lead up the second day, but it was so small that I had become stuck in it and the Captain had had to pull me out by the legs. But we decided to try it again. So we

covered up the fire carefully and, taking plenty of torch-sticks, started. Never had we had such crawling and wriggling and crooking and turning as we experienced in this place, which we called the Pocket-Gopher Hole. But we got through at last, and were surprised to find ourselves in the first part and beyond the Trap-Door. So we went on to Sink-Hole Dome, but found nothing new. As for the beating sound at the Bedroom, we could not hear it at all.

We went back through the Trap-Door, noticing our gun beside the hole; but as we had only shot for it, and no powder or caps, we left it where it was. We went on toward Fire Pit, going very cautiously and looking out for any sign of the robbers. We got to Rope Pit, but found the rope gone. We turned to go back and do the exploring we had planned, when I very foolishly proposed going into the room just back from the pit, which we had seen as we first came along and called the Star Chamber, on account of shining stalactite points on the roof far above. I was anxious to see how they would look with the greater light of the torches, or my torch rather, as we were carrying but one to reduce the chance of being seen.

It was truly a beautiful sight in that room. You would have sworn as you looked up that you were outdoors of a clear night, with all the stars in the heavens looking down at you and twinkling. I was going on with my chin in the air and the Captain close behind, when suddenly I stumbled over something yielding and went down head-first, burying my torch in the sand; but I had a glimpse of a man's face on the ground, with scraggy black whiskers and eyes like a bat's. Then I felt him spring up and grapple with the Captain in the dark, and a harsh, shrill voice which, from what it said, it seemed natural should be the Captain's, cried out:

"I'll fix you, Ike Liverpool! We'll go down that pit together this time!"

But if I had had even half my wits about me I should have known it was not the Captain's voice, but the other man's.

[CONTINUED IN THE NEXT ISSUE]

Better Babies

The movement sweeping over the country which has brought a new slogan into American life "Better Babies for the Nation," is a familiar idea applied to human beings.

Some people seem to think more about better corn and better cattle than they do about better babies—or rather this was true before they realized it is much wiser to develop babies to the highest degree possible.

The idea of a systematic, intelligent campaign for Better Babies, has been called the Woman's Home Companion movement. It isn't. The Companion saw that a method had been devised which would accomplish results, and the magazine threw itself heart and soul into the campaign because it believes it to be the biggest, most important work any publication can undertake.

This decision made, the Companion offered cash prizes in gold; and gold, silver and bronze medals, as well as certificates of award for the Better Babies Contests.

Some of the foremost medical experts in the country worked out for the Woman's Home Companion the standard score card now accepted as the most nearly perfect thing that can be devised. Several of these distinguished scientists gave their services free when it was explained to them that the score cards would not be sold but given away.

The Woman's Home Companion Better Babies Bureau was organized. Its mission is to gather all the news of the movement; to secure photographs of the winners—the magazine has printed some very wonderful photographs; to give full instructions about conducting Better Babies Contests; to supply score cards, wall charts—in fact, to answer all questions, and above all to show how mothers can be made to understand the ways and means of having their children possible prize winners.

Briefly, the Woman's Home Companion is a clearing house for a movement that is bigger than any publication. Perhaps its greatest service lies in the publicity it gives to the movement. The articles and pictures make very wonderful reading. You will realize this in the account of the Better Babies Contest recently held in Knoxville. There are eleven photographs of prize winning babies in the August Companion.

The Better Babies Movement started five years ago in Louisiana, when Mrs. Frank De Garmo arranged the first contest in connection with the State Fair which was held in Shreveport. Two years ago, two Iowa women, Mrs. Mary T. Watts, and Dr. M. V. Clark, carried the message into the mid-west, where raisers of live stock were quick to discern the possibilities of the idea.

The beautiful simplicity of this notion of judging babies like cows and horses rather shocked some people at first. Instead of making the Baby Show an excuse to display infantile beauty and maternal vanity, the children were judged as little animals, and they didn't measure up any too well in comparison with the beasts.

There have been many Better Babies Contests since then, and the results have been startling. Mothers have been shocked by the discovery that a child they believed perfect, was not considered worthy of competing for a prize. There have been several experiences like that of a college bred woman whose husband was a scientific farmer famous for his live stock. This mother boasted a lot about the baby to the baby's grandmother who had her doubts about the child's perfection. So it was suggested that this baby be entered in the contest. The grandmother wasn't surprised when the baby was rejected, but the mother was overwhelmed.

The lectures and talks of physicians convinced this mother that for all her college wisdom, she didn't know much about babies, and she set about completing her education. At the next Better Babies Contest this particular child walked off with first prize.

(Continued in Fourth Column)

FIVE MEN are cast away

On a tropical island. Then five women come mysteriously, miraculously. Swiftly the great longing manifests itself. The problem of the men is to capture, tame and marry the women: the problem of the women is to emancipate themselves—the sex problem we are facing today. How was it solved?

Angel Island by Inez Haynes Gillmore

A romance of powerful imagination and significance begins in the August number of

The American Magazine

Better Babies

(Continued from First Column)

Results like these give the Better Babies Movement a certain quality of majesty. The wise doctors judging the babies are not deluded by long silken lashes or curly hair, but they insist that every organ must be perfect, and every baby mentally and physically reach a certain standard; when it does not, they straightway explain to the parents what is wrong and how to remedy it. They go through the whole system from baths to sleeping, from food to playthings; especially are they careful in searching out defects.

Sometimes the baby has been dull, so stupid in fact that the neighbors fear that it will never be normal. The examining doctor swiftly discovers adenoids. Many a farmer-father who long before would have discovered swollen glands in the throat of a blooded colt, and who knew the treatment for it, has never heard of adenoids. When these are removed the child is able to breathe properly, the little brain clears, and the world is given another Better Baby.

The contests have revealed appalling ignorance even on the part of highly intelligent parents, but they most quickly realize the benefits, and they are carrying along the campaign with the greatest enthusiasm.

The Better Babies Movement means the fixing of the highest standard for a child, and determined, scientific effort to bring all children up to this standard. Results are accomplished as they are on the properly managed farm—through proper food and scientific care.

One of the most interesting discoveries has been that city babies have held their own with country babies, and that some of the most perfect specimens have been found in the tenement districts in large cities. So it would seem that it isn't wholly a question of environment.

The headway the Better Babies Movement has made is remarkable. Until the Woman's Home Companion joined in the campaign, the country at large knew practically nothing of it. The prizes offered by the magazine attracted the widest attention. The Companion offers to each State Fair, a prize of \$100.00 in gold to the best city baby; \$100.00 in gold to the best rural baby; and also, gold, silver and bronze medals, together with certificates of award to each prize winner. The only conditions of this offer are that the State Fair appropriate at least \$200.00 in prizes, that the women of the state raise an additional \$100.00, and that the babies be judged by the Companion's Standard Score Card.

Immediately fourteen states responded and qualified for the Companion's offer. Twenty-three states have already adopted the Companion's Standard Score Card.

From one end of the country to the other city, county and town contests are being held with increasing frequency. They are organized by Women's Clubs, Child Welfare Organizations, Pure Milk Commissions, Medical Societies, Municipal Boards of Health, and Parent-teacher's associations.

The New York Milk Committee, the most powerful organization for the conservation of child life in congested cities, has endorsed the Better Babies Movement as a means to raise the standard of health for greater New York and to decrease the number of defective children who are a handicap in the city's public school system and a menace to efficiency and morals everywhere.

If you want to know all about the Better Babies Movement and read the wonderful stories and see the beautiful pictures of prize winning babies, you must turn to the Woman's Home Companion.

If you wish to start a contest in your community write to the Better Babies Bureau, Woman's Home Companion, 381 Fourth Avenue, New York. All information will be given you gladly and without cost.

FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

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SATURDAY, AUGUST 2, 1913



THE INVITATION

COME on, brother, take it easy—for a day.
Let's be truants, blithe and breezy, out for play;
Here's a spot for pleasant dreaming
Where the slender birches sway;
Here's a pool where trout are gleaming
If your thoughts for fishing stray;
Rest a bit from toil and scheming, and we'll play.

Here the air is soft and hazy; it's a crime
Not to linger and be lazy for a time.
So, while summer skies are warming
And the heart beats all in rhyme,
Let us steal a day from farming,
From our daily grit and grime;
Let us stop where life is charming, for a time.

Then when we have rested, neighbor,
Loafed and loitered for a day,
We'll go back again to labor,
All the better for our play.—BERTON BRALEY.

THE POINTS OF INTEREST IN THE COMING NUMBER

WITH THE EDITOR

ADVERTISEMENTS IN FARM AND FIRESIDE ARE GUARANTEED

Special Articles

The opening pages of the next number of FARM AND FIRESIDE will be full of interest, particularly one page. That page will tell about veterinarians who are good and those who are not. If you have a diseased animal, and if conditions about the farm are not conducive to the best health of the live stock, then a remedy should be looked for. Some veterinarians, of course, can be trusted to supply this remedy, and some cannot. It is particularly important at this season of the year to take an inventory of our veterinary resources.

Farm Departments

Certain pages of each issue are always given over to department articles affecting every-day farm work. Of course it would be impossible to publish discussion of all subjects in which our readers are interested. Only the most important articles can find a place.

Garden and Orchard

It is not too early now to begin plans for the raising of tomatoes during the winter; at least that is the firm conviction of one gardener and writer who will tell his story August 16th. If you have a market near at hand it will pay you to read this article.

Live Stock and Dairy

Just what the veterinarians are able to say on certain diseases can be told by reading FARM AND FIRESIDE every issue. In the next issue a few common animal diseases are talked about and remedies suggested by men who know live stock.

Poultry

A miner in one of the Western States who has had a great deal of experience with the floating of mining stock will outline his viewpoint of poultry-raising. This viewpoint is different, but it is worth while.

The Market Outlook

The present conditions affecting the sale of live stock and crop products will have the attention of the wide-awake farmer. In each issue FARM AND FIRESIDE attempts to hit the most important market movements. Besides our regular contributions to this page, the next issue will describe the standard barrel as now fixed by law. This will be of particular interest to apple-growers.

The Story on Page 14

Our serial, "In Frontenac Cave," marches on in this issue of FARM AND FIRESIDE. The reader finds out who the man was that Captain Archway and Jud fell over in the Star Chamber, and he proves to be Gil Dauphin; but Gil has quarreled with Ike Liverpool and the gang. Later, however, the Captain and Jud come upon the Liverpool gang in good earnest, and there seems to be no doubt that there is serious trouble ahead. What is the strange noise in the part of the cave where the Captain and Jud got in? It grows louder and louder. We can't promise that this mystery will be cleared up in the instalment of the story in the next issue, but we can assure the reader that it will be the best chapter of the story yet printed.

Sunday Reading

For our Sunday reading hour Dr. John Clark Hill will remind us of the benefits and the beauty of mirth, and in a reminiscence by E. W. Brainerd we shall be wafted back to the sweet and homely Sunday of the vanishing generation.

Scientific Canning

Mrs. Talbott will show us how, by observing rules of surgical cleanliness, successful canning may become as easy as boiling an egg.

Fashions

Miss Gould will show us how to be attractive in informal dress.

Special Articles

We may read of two unique vacations invented and enjoyed by families to whom the expensive, conventional vacation was—shall we say fortunately?—denied.

The Children

Our children may learn how to play a new game and how to build a new house. And there is a story for them too.

Yearning for the Farm

What is more pathetic than the case of a city family yearning for a place on the land and unable to find the way out of the urban labyrinth? There are thousands and thousands of such people. Some of them only think they want to go on the land. Many of them would be dreadful misfits if they could make the removal. But once in a while I get a letter which makes me wish I were a czar and could place people wherever I wanted them. For instance, I would give the writer of the letter which follows a farm. I feel certain this family would make good. Here is the letter:

A Call for Help

I was very much interested in the story of Hon. S. L. Lupton, Farmer, by Judson C. Welliver in the April 26th number of FARM AND FIRESIDE. You say there are a great many more ways to stake men like Lupton than there are men like Lupton to be staked. There is more truth than fiction in that saying. But, friend, there are more than you probably think there are. They toil and struggle with all their might, but cannot get ahead enough in the big cities like Chicago (where I happen to live) to buy one acre of land. If there are so many ways to stake men like Lupton there are certainly few who know it.

Will you be so kind as to let me know how, when and where they are to be found? If any man would give me half the chance this man had I am sure he would never regret it.

I have five children, all small yet, and we have planned together, my husband and I, time after time, to go to the country somewhere to raise them, to take them out of this wicked city, where they could be free as the birds.

I was born and raised on a Virginia farm, and as I look back those were the happiest days of my life. I am young yet, thirty-three years old. I have longed so much to go back to Old Virginia, but as yet we have been unable to do so.

I would be willing to live in a tent for one year to get a start, and be happy as a lark. Sickness has taken all and more than our little savings.

Not to brag, but I have a husband who would almost give his life for such an opportunity as Mr. Lupton had, and he would not let any grass grow under his feet either. I do not think a lazy man would work every day but one out of thirty every month in the year. He is an engineer at present on the Michigan Central, where he has been for eight years. He has always spent his vacation on a farm, but has not had one for three and one-half years.

My husband has been sick but six days in our thirteen years of married life. He has worked with stock a great deal, also garden and chickens. What he has not learned by experience he has by study. There is never a day goes by he is not planning for some way to get a little home on the farm, where I know we could make a better living. Now if you can help me to plan out this very difficult proposition I will accept your efforts with great pleasure.

Present-Day Farm Life

How can I, how can anyone, plan out a way for these people to get a farm? They are used to the income of a railway engineer, which is a pretty good income for working people. Could they ever save enough to buy a farm by going into the country and working for wages? I wish I could say they could, but I dare not.

In the first place, it takes more than desire to make a farmer. The desire is the most important thing perhaps, but other things are also essential. I wonder if this woman knows how much different her life would be from that on the old Virginia farm as she remembers it through the mists of years?

Three things are required for successful farming. First, the human factor, the farmer and his family. The city man comes to the farm to a large degree out of focus with things. His work is no longer laid out for him by other minds. He must plan everything for himself. Nature seems his enemy. The city man's work is independent of weather, bugs, worms, flies and plant and animal diseases. He can plan exactly, and carry out his plans. But when he finds himself on the farm he is confronted with a great mass of influences over which he has no control. There is no pay-day. Out of this mess of things he must wring subsistence. He is quite likely to become confused and adopt the policy of drifting. And then, as a farmer, he is lost.

Then there is the natural factor, land. It seems a shame that there should be so many acres locked up in the hands of people who do not themselves work them, but such is the condition of things. Some time I hope it will be different. Some time I hope we shall recognize in our institutions the basic fact that the possession of so much land as he needs for his actual uses is the right of every human being. But in the meantime land is worth so much money that these people are forced to give up a large part of what they produce just for the bare land on which to expend their labor.

Then there is the matter of capital. Tools are needed. Live stock, seed, fencing and building-material are needed. And farming has no pay-day. Nobody hands the farmer an envelope containing his wages at the end of the day, the week or the month. Thousands of people in the city would not be able to wait for the land to yield them a living, even if they had the land.

Some There are Who Win

And yet many of them make the break to the farms—and some win. They sometimes begin as farm-hands. The man who is willing to work on a farm for wages, and is allowed a house in which to live and a garden, a pig or two and some fowls, can save an amount of money which will surprise him when he considers the relatively low wages he can get. If he does this, and learns on someone else's time the things he must learn, he ought after a few years to be able to rent a farm and make some kind of a deal for equipment with which to work it.

I should not dare to advise any particular family to take chances on this, but it is sometimes successfully done. And a really good farmer who can prove himself a very desirable tenant can often get lease arrangements by which he can make as much money—more money—than the average man makes on his own farm. In fact, I believe that there are many farmers who would do better were they to sell their farms, put the money realized into equipment and rent land. For on the best-managed farms the equipment is making more of the farm's profits than the land does. And listen: there are many farmers who don't make as much clear money as a good hired man.

It's an individual problem in all cases. It depends on the man, on his wife, on the price of land and a hundred other things. But, while the jump from city to farm is a risky thing, I believe that more and more people will be doing it successfully from year to year.

Herbert Quick

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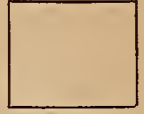
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Individual and Association Brands



THE State Horticultural Society of Wisconsin has adopted as its trade-mark the design or emblem shown in the illustration. This emblem is copyrighted under the federal law and also under the Wisconsin Trade-Mark Acts. It is to be used by all members of the society in the marketing of their fruit. Mr. F. Crane-field is secretary of the society, and states to FARM AND FIRESIDE that, while so far a satisfactory system of using the mark has not been formulated and consequently no growers are using it, there is no doubt but that before the apple-marketing season begins some system will be devised whereby the mark can be used on apple packages.

Designs of this kind which accompany high-class products come to be synonymous with the very best which can be had, and are the best form of advertising. FARM AND FIRESIDE believes that every farmers' society or marketing association should adopt some design or trade-mark which will distinguish the particular product of the association or society from other products on the market. This plan applies equally well to wholesale or retail shipment. Individual brands are always beneficial, but have a number of drawbacks. In the first place, the amount of products shipped by an individual is seldom enough to establish very much of a reputation in a large and profitable market. Secondly, the efforts of one person require a longer time for a brand to become known and inspire less confidence as a rule, but not always, than the efforts of an organization composed of many members. Third, the design of a society may be continued for years and generations, whereas the design of an individual is naturally limited to the time of the business life of the individual or his family successors.

All brands and trade-marks are excellent, but the greater the number of persons and the amount of fruit represented by the design, the greater will be the prestige of that design on the market.

Our Foreign-Grown Experience

WHEN the American Commission on Agricultural Organization and Rural Credit sailed for Europe to undertake the big task of collecting information for possible use in this country, muffled objections were raised as to our inability to adapt European conditions to our own needs.

Let us first see just what the commission proposes to do. It is divided into four committees. The first will investigate all forms of banking and credit affecting the farmer. The second is devoted mainly to practical farming, and will inquire into associations formed for the purpose of improving soils, crops and live stock. The third committee will work on the problem of marketing and buying through farmers' associations. The fourth will deal with the betterment of rural life and education.

Now we come to the big question, "Can foreign-grown experience be successfully transplanted?"

Before answering let us see how many of the agricultural benefits that we are now enjoying have been brought here from Europe and other countries.

Cattle: Jersey and Guernsey cattle came from the islands of Jersey and Guernsey, Holstein cattle from Holland, Ayrshire cattle from Scotland, Shorthorn cattle from England.

Sheep: Merino sheep came from France and Spain, and nearly all the other kinds of sheep had their first home in the British Isles.

Poultry: With the exception of the turkey, most of our breeds of poultry originated in China, Western Asia, India, were passed on to Europe, and from Europe to this country. The Rhode Island Red, Plymouth Rock and Wyandotte are known as American breeds, but they were derived from breeding with birds brought from Europe.

Egg-laying contests completed last year in this country and others now in operation having English-bred hens in the competition show that we can still further improve our poultry so far as heavy egg production is concerned by importing foreign-bred stock.

Horses: Nearly all of our large horses are the result of importation from France, Belgium and the British Isles.

Swine: Our hog industry is based on importations from Europe, North Africa and Asia. The Berkshire, Chester White, Duroc Jersey and Yorkshire were developed in England.

Crops: Alfalfa came from southern Europe and South America. Potatoes were not grown in America until after they had been cultivated in Ireland for some years. Rice was first introduced into America by a vessel from Madagascar which was blown out of its course. Durham wheat was introduced by the United States Department of Agriculture, and so we might enumerate many other standard crops which are not native of the United States.

Our first accurate knowledge of the means by which soil fertility could be increased and maintained was brought here from Germany. The Pasteurization of milk and the science of bacteriology were of French origin. The United States Department of Agriculture has explorers scouring the world for new crops which can be grown in the United States, and most of these crops are eagerly welcomed.

Need more be said? With all these sources of agricultural improvement which have come to us from Europe, can we not benefit by listening to the European farmers' story of co-operation, by studying their parcel-post system, by learning how they handle the problem of farm credits, and especially when all this information will be brought to us well-organized?

Our increasing population demands that these problems be quickly solved by experienced experts.

And when the American commission returns with its reports and plans that give promise of flourishing here as well as in Europe where they have been so successful, let us all try to make them sprout. Finally, we can Americanize them according to our own ideas.

Getting Results for the Farmer

THE activity of the Rural Organization Service of the United States Department of Agriculture, made note of in the last issue of FARM AND FIRESIDE, is marked. Co-operating with this Rural Service is Charles J. Brand, Chief of the Office of Markets. Mr. Brand tells FARM AND FIRESIDE that he is particularly interested in getting the best possible material for

*He who fails to see the opportunities where he now
is will have the same eyes in any other location*

the following positions: specialist in co-operative organization, specialist in transportation of farm products, specialist in marketing perishable products, assistant in co-operative organization accounting.

These positions are to be filled through civil-service examinations, but the point that they are to be filled by competent men is of the greatest importance to farmers everywhere. Much good can certainly be expected from a service such as Mr. Brand and Mr. Carver are planning for this country.

"Protecting" the Heifer Calves

THE fool-killer is remiss in his duties, since there are still found people who howl for a law which will forbid the killing of heifer calves. These imitation thinkers say that the cow-supply is falling off, and insist that if there was a law restraining the killing of heifer calves the trouble would be cured. We still offer a reward for a description of the color of the law-maker's hair who can make farmers raise heifers when they can make more money by vealing them. Show us the mistake from a money point of view in killing the heifers, and we'll listen; but draw a club on us for the purpose of making us over into unwilling dry-nurses for heifers, and we'll try reversing it on the man who draws it. Raising calves is not an amusement—it's a business. Producing food for the people of the world isn't an esthetic matter or a thing of duty. It's a cold matter of making a living on a farm. If it loses us money to veal the heifer calves show us the loss, and we'll thank you. Try to make us grow them, and we'll fight. Nearly half the American farmers are tenants who are liable to have to look for a new home next spring. These men don't know whether they are going to be so situated as to make any effort to build up a herd successfully. Fix that up for us, please. Others have their farms so stocked that the calves have to be disposed of. And others are just plain hard up and need the veal-money. Please remedy these things before you begin to talk of coercive laws. And all the time don't fail to point out the profits in keeping the heifers as against vealing them. That kind of talk will always command an audience among farmers.

American horses valued at nearly five million dollars were exported last year. Canada purchased more than any other one country.

The Experiment Station Record tells of a White Leghorn hen in New England weighing 3.2 pounds which laid in one year 257 eggs weighing on an average 1.8 ounces each. The eggs sold for \$7.43, and the hen ate 110 pounds of feed costing \$1.66; or a return over the cost of feed of \$5.77. The same hen laid two hundred eggs in her second year.

Why Fallowing Fattens

RECENT studies of scientific "sharps" show that the belief in summer fallowing as an aid to heavy crop production held by farmers in earlier days is founded on a basis of undeniable fact. The summer working of the fallow land helps to hold the moisture near the surface of the soil, and this moisture, together with favorable conditions of warmth, has a powerful influence for the production of nitrates from any latent nitrogenous material that may be in the soil.

The advantage of fallowing over growing a crop of barley or corn, for example, to be followed by wheat, is that the crop produced during the summer may have so depleted the soil moisture as to prevent the nitrate-forming bacteria from changing inert material into available form.

It is evident that a nitrogen-fixing crop—a legume—can replenish the stock of available nitrates, in part

at least, while furnishing some returns for the farmer's labor. This explains why the fall-seeded crop on the clover or alfalfa sod or stubble of soy-bean, cow-pea or vetch frequently equals that seeded after fallowing.

Our forebears knew, without knowing why they knew both as to the result of fallowing and the equally beneficial effect of growing legumes. This generation should reap greater harvests and better preserved soil productiveness by knowing definitely that which their fathers understood only in part.

Strangers in Strange Lands

What One May Expect When Moving to a New State

Winning a Home in the Ozarks

By Mrs. O. P. Ward



ANY parts of the Ozark region of south Missouri are thinly settled. Oregon County is one of these, having large tracts of rough forest-land where cattle range and wolves prowl and man goes only to round up his steers or hunt.

The aspect of the rock-covered soil is forbidding. Many deep gulches run from the higher land down to the numerous streams, settlements are scattered and railroads many miles away. Civilization has smiled but faintly on Oregon County, and only in the extreme southwestern corner, where the railroad deigned to lay a few miles of track, is a flourishing town with large and prosperous fruit-farms about it.

My brother-in-law, having caught the "back to the soil" craze, persuaded my husband and his father to trade some property for 1,560 acres of this forest-land, wild and remote. The brother-in-law and the father visited the locality, and, relying on their judgment, my husband decided to join his brother in moving there.

The latter gave glowing accounts of "worlds of timber" which could be made into railroad ties and lumber, of range cattle and hogs raised at a wondrous profit and abundant game and fish for amusement. He figured that men could be hired to cut and haul the ties and a considerable profit realized over and above the expense, and that we need not work much nor worry, but "take life easy."

My husband took a graver view of the prospect and often said to me that he expected to find the task of clearing timber-land the hardest he had ever undertaken. As he was a hard-working man, I begged him not to undertake it. He was then the manager of a factory in which his brother worked. Neither had had any experience in farming or country life. This had probably made my brother-in-law more sanguine, as he often told us of the ease of farm work compared to the regular grind of the factory. I had boarded out in the country several times and had failed to observe anything like ease in farm life, especially for the farmer's wife. However, as my husband agreed to go, I also consented. I think the fact that it was to be an entire change—a new epoch in life—attracted as well as repelled me. For youth there is always glamour and romance in the great unknown, and we were all still young.

The venture being agreed upon, my brother-in-law went away for a good rest to his father-in-law's, leaving my husband to finish alone some work, which proved to be so tedious that it took him past the season for garden-planting. This was unfortunate, as we had only a little garden stuff till the following spring.

We arrived at a small station on June 17, 1910, and were transferred to a lumber-wagon which was to carry us to our destination. My brother-in-law joined us at the station and was in high spirits. Mine sank as the day grew hot, the road rough and wild and the young baby I carried in my arms, as well as myself, became fatigued. The spring under the seat broke, and I begged leave to walk from sheer weariness.

There was a deserted house with a small clearing adjoining some of our land, and we were to live in it till we could build our own houses. We came upon it in the gathering twilight, and to my tired eyes it seemed the loneliest spot they had ever looked upon. All through the long night I lay by a window in which there was no sash, listening to a screech-owl which I thought to be a wildcat, as I had been told they were plentiful.

The next day brought more practical troubles. I found the list of groceries I had purchased about equal to those I should have purchased and had not. The meal I prepared was memorable for what it lacked. I had never before in my housekeeping experience been out of reach of the corner grocery. After breakfast the men folks tramped several miles through the woods to obtain butter, eggs and milk.

The intention of my husband before coming had been to lease a sawmill and go into the lumber business, but a little investigation into the profits of a sawmill not far away changed his mind. He also found that he could not obtain tie-hackers or haulers as his brother had planned. The hackers could go back into the woods, "squat" and steal all the ties they wanted from some landowner who lived perhaps in Chicago or St. Louis, and those who did hauling thought the entire pull to town too hard on a team.

My husband went to work at once to cut down trees for lumber for a house. Even the shingles were made from blocks of oak which were cut off our land. Then a large cistern and a good cave were dug. His brother helped with a will, as they had agreed to work together first on our house, then on his.

My brother-in-law's wife came soon after we did, but was much dissatisfied and cried to be sent back to her mother. This greatly disconcerted her husband and disappointed the rest of us, as she was a south Missouri girl, country-bred, and had often told us of the great things she could do on a farm. She did not overestimate herself, as she was a capable woman, but without the grit necessary for the tedious task and privation of starting a farm in the wilderness. Her husband, already crestfallen over the failure of his air-castles concerning ties, began to lose interest and showed signs of retreat.

There was a vast crop of acorns that fall, and we bought several sows with pigs. Their winter's feed cost but little, as the acorns lasted till May, and then the grass had come.

In August I set an incubator with one hundred and ten eggs and had excellent luck with fifty-five of the

sixty-seven chicks which hatched. They averaged two pounds apiece at eight weeks and had picked up most of their living. This good fortune led me into a mistake. I had read and dreamed of a vast chicken business here in the wilderness. I bought two more incubators and set all three. By this time the season was so late that the hatches were not so good and there were fewer bugs and seeds. Wild prowlers had discovered them and carried off some. The price of poultry was very low all winter and spring, and my chickens barely paid for the eggs I set and their feed.

We moved into our house the first week in December. It had been taken off the stumps since July 1st, and my husband built it practically by himself. He put blind boarding, building-paper and weatherboarding on it, double floored with building-paper between, and without a doubt it is the best constructed house for many miles around. For that matter every improvement on the place has been of a substantial nature. That kind of work in the wilderness makes clearing a farm tedious, but we believe it will pay.

My husband also built two brooder-houses, two open-front hen-houses and a large hog-shed, then turned his attention to the clearing of a field where the timber for the house had been cut. Some of the stuff to be moved was so large that he had to hire help, as his brother had left. He succeeded in getting a large garden and fourteen acres besides cleared and fenced, the garden planted and part of the field plowed by the middle of May. All the farmers about told him not to plant new ground earlier than May 20th. From then till June 10th was the best time, they said. The drought set in May 1st. By the latter part of the month the breaking of the new ground had become slow, difficult work, then next to impossible. An acre or so of the cleared land had to be left unbroken.

It did not rain from the last day of April till June 17th, so we got less than half a stand of corn. The first rain that came was followed by two weeks more of dry weather, then the rains came so frequently that the corn could not be plowed. My husband replanted just after the Fourth of July, but the second planting was much injured by worms.

We had purchased our seed from the most reliable houses both for garden and field. Some of the garden-seed lay in the ground five weeks before the rain, then grew and did well. [CONCLUDED ON PAGE 7]



Homeseeking in Oregon

By J. R. Springer

IN FRESNO, California, once a stranger asked a colored waiter if he had fish in Fresno, and he said "Yas, sah," and the stranger asked what kind, and the "culled" gentleman said "Eastern succas, sah." It was the time of a big boom. Human nature is much the same everywhere. The Easterner generally has such an overwhelming confidence in his ability to drive a sharp bargain that the sharpers can hardly resist the opportunity to show him his mistake.

There is no reason why a stranger should not go and do his own seeing out of the general path of the crowd. Of course Oregon real estate is high around Portland. The large number of land-seekers who stop there increase the demand.

In my neighborhood, here in Linn County, Oregon, is as good land as there is on the coast. Some places have sold for \$40 per acre, and some for \$10, the last unimproved. Good locations can be had for \$25 per acre. That is not high if we consider the equable climate, pure, soft spring-water everywhere, fruits in abundance and grain of the best. The Angora goat does the clearing of the land from brush and pays you for doing so with increase and fleeces which make the finest mohair goods. It is no trouble to get from six to ten dollars per month per cow in cream-checks. The summers are long, and frost hurts nothing.

None but a general kicker can find fault, but if a man thinks he can get a first-class job, big pay and nothing to do the first thing when he gets here he will be doomed to disappointment; for there is no demand for a boss generally. But the man that is not afraid he will do too much will always be in demand, and it won't take long before he will be running a business of his own or be general manager for someone else.

It is only to see the broad expanse of this upper Willamette Valley and the smiling contentment of homes that are everywhere in evidence to be satisfied that here life is worth living.

The potato has no foes here, grain ripens perfectly, live stock lives out of doors the entire year and consequently is almost immune to contagious diseases. The climate is mild, blizzards unknown, the cyclone and thunder-storm rare. Flies and mosquitos are also rare, and the nights are cool most of the year. Corn will grow to maturity and make pork, and there is little hog-cholera.

The country school district must have six months of school each year, and churches abound.

I will say to prospective settlers: Get away from the railroads, go out on the stages. Go ahead of the railroads, they will come in time. Go where the land is cheap; it will all be dear some time.

EDITOR'S NOTE—In an article published in FARM AND FIRESIDE some time ago the alleged high prices quoted for agricultural land in the Pacific Northwest were seriously objected to by several western readers, one of whom was Mr. Springer, the author of the above article. Mr. Springer paints a somewhat brighter picture for the homeseeker. In any case the person journeying west to take up land should go there with his vision clear and free from roseate dreams of getting something for nothing.

Southern Land Opportunities

By J. F. Carter, Jr.

Secretary Mobile (Ala.) Progressive Association

THE gulf coast section of the States of Alabama and Mississippi is almost a pioneer country. A few years ago it was grown over with a vast forest of yellow pine; the axman has been at work, and to-day there are thousands of acres of virgin land, with many stumps, all of which is waiting for the hand of the hustler who wishes to make a living from the soil and have a home where there are no winters.

The gulf coast section of these two States is made up of sandy soils. In the creek-bottoms and river-bottoms the soils are muckier and richer; in the higher places the soil is of two kinds—sand and sandy loam. Sandy loam means there is a subsoil of clay, and that is one thing the homeseeker down here must hunt for. Pure sand will produce crops all right, but the amount of fertilizer that has to be put into the ground to get the crop is amazing. A soil with sandy top and clay subsoil will produce the very best crops, for all enriching matter, manure and commercial fertilizers, are held from leeching by the clay. And, besides, the clay holds the moisture from seeping away, conserving it for the rootlets.

There are several things to be watched when buying land in this section. First, watch the land company; second, watch the soil; third, watch the location as to immediate market and railroads for the distant market; fourth, don't depend too much on the claims made by land-sellers; fifth, watch the price asked for land.

All land companies are not good land companies. Uncle Sam has been trying to root out all the bad ones, but he has not been absolutely successful. There are some land companies that try to help the settler after he has purchased. They build roads, help construct small bridges, try to have schools built by the county, help in getting lumber to the ground for houses, try to get fencing and all the needful things about a farm at a decent price; they have government experts come and lecture to the newcomers to teach them how to live in the new surroundings.

In this gulf region we have thousands of acres of soil that will produce three crops where the soils of the North and West will hardly produce one crop. This is because we have the climate, never a drought, and a winter that is short and mild. We have a rainfall twice as great as the Middle States and well distributed throughout the year.

But we have some very poor land, land that will not produce excepting at enormous expense. And that is the land you do not want, and the very land we do not want you to have. That is the kind of land that you might buy if you are not careful.

You must remember that, since this is almost a pioneer's country, you do not have to pay as much for land as the farms of Illinois, Iowa and Missouri are worth. If land is offered at \$10 an acre do not be afraid of it, and do not be afraid of it as high as \$50 an acre. But when prices begin to get beyond the last-named figure it would be well to make an exceedingly close investigation to learn why it is that high. The value is very apt to be an inflated one, caused by the imagination of the land-salesman rather than the actual worth as compared with other pieces next door.

Our idea is this: If a man comes to us from the North or West, enthusiastic over some story that he has absorbed, and fails to produce as much as he had expected, he will go back home and say the worst things about the whole State. But if we get to him in time to explain to him what he must expect and what he must do, what his profits will be and where he will find his market, then he will not go back at all, for he will succeed.

In the counties surrounding Mobile there are soils that produce every year from sixty to one hundred bushels of corn, before which one may get a fine crop of cabbage, oats or early vegetables of all kinds. We are in a section that produces from three to five crops a year off the same acre. But it requires work. First, one may get cabbage, beans, tomatoes, radishes, lettuce; then corn or cotton; then hay, or fall crops of potatoes, cabbage, radishes or lettuce. He gets his five crops by raising some short-growing crop instead of corn or cotton. He may produce tobacco instead of one of the spring crops. He may produce Bermuda onions that pay from two hundred dollars to six hundred dollars an acre. He may grow strawberries that pay from two hundred dollars to one thousand dollars an acre, depending on the earliness of reaching market. Tomatoes paid a few growers three hundred dollars last spring. Radishes paid as high as three hundred dollars an acre. And, in all these cases, these form but one crop of the three that may be raised in a year.

But not all land will do this, and the prospective buyer should try to get the soil that will do these things every time. It is here in large quantities if he will seek a while for it.

Orange and pecan groves are worth hundreds of dollars an acre when producing, but there is little need of paying such enormous prices for them, when a good farmer can set out his own groves.

Our climate is all that could be asked, and our summers are not so hot as those of the North. There is much more than a living to be made from every ten acres of land down here, but it requires work. The incomer must expect to work on his place just as he does up North.

Such work will be rewarded in any real farming district, but especially in our gulf region. The man who succeeds makes his plans according to the conditions surrounding him and then pushes those plans to completion by action tempered with study.

The Convenience of Electricity on the Farm

How it is Possible for the Farmer to Supply His Own Power and Light

By F. S. Culver



The simple automatic cut-in is important

WHEN the up-to-date farmer looks over his prosperous farm, with its modern equipment, high-grade stock and all the appliances for making the burden of the farmer and his family as easy as possible, the thought must occur to him: "Who is to carry on this work for me when I reach that point in life when I must of necessity shift the bulk of the work on to younger shoulders?"

If the young folks are leaving for the city it is indeed a vital question for the farmer. If he has no sons who take an interest in the work and can carry it on there is danger of the place that has been raised to such a high state of cultivation

and development falling into the care of owners of less ambition, and the farmer may see the result of his years of labor revert to weeds and dilapidation.

From this it seems that it behooves the farmer to do everything in his power to make his home as comfortable and attractive as possible by equipping the place with all the labor-saving devices obtainable so as to make the work less of a drudgery for all members of the family.

What can you put on the farm that will assist in this as much as electricity?

When the subject of electricity for the farm is mentioned we think of lights first and almost exclusively. True, lights are important, probably next to a good water-supply, but electricity is such a flexible and obedient power that it may be made to serve us in a variety of forms.

The use of electricity in the cities has resulted in the development of innumerable devices that make it possible for us to perform a large part of our household duties with this wonderful agency.

In the manufacture of these devices competition has been keen, the result being that the market is supplied with all kinds of appliances that are highly efficient, very durable and are low in first cost. All of these goods are now standard and are as applicable to farm lighting plants as to city lighting circuits.

Electricity is Now a Practicable Power

Manufacturers of these devices have been slow in soliciting the farmer's trade, as they have been handicapped by the scarcity of plants on farms that could use their goods.

This condition is not due to any lack of interest on the part of the farmer, but rather to the fact that a simple and economical electrical plant has not been available until recently.

For sake of convenience we will divide the various forms of electric lighting plants into groups as follows:

Class 1—Gasolene or steam engine driven generator.

Class 2—Gasolene or steam engine driven generator with storage battery.

Class 3—Windmill-driven generator with storage battery.

Plants of Class 1 type require an engine that will run at a steady speed with a varying load; that is, the speed must not change materially as lights are turned on or off.

In the case of the steam-engine this is easily attained, as almost any steam-engine designed with a governor will run with a speed sufficiently uniform to give good results for lighting work.

When a gasolene-engine is used, however, it becomes necessary to use a better grade of engine than could be used for the ordinary power work about the farm.

It is in many cases necessary to supplement the engine flywheels with a flywheel on the generator. With heavy flywheels on both engine and generator,

battery makes a more satisfactory electric service. Furthermore, a cheaper grade of engine can be used, as the battery will be charged just as well by an unsteady speed as by a more uniform power. It is also unnecessary to have a flywheel on the generator, thus reducing the wear on the generator bearings.

One of the greatest benefits to be derived from the use of the battery is the ability to have lights and power at any time, even though the engine and generator may not be in operation.

Class 3, or the windmill plant, is perhaps the most interesting, both from a scientific and economical standpoint.

Inventors have been working with the problem of using the power of the wind for the generation of electricity for many years, and some very ingenious arrangements have been devised. All of these, however, have been too complicated for use on the farm.

The writer is familiar with a windmill plant that possesses so many valuable points that a description of it may be interesting. This plant consists of a storage battery, a generator for charging the battery, an automatic cut-in for connecting the battery with the generator at time of charging and a windmill for driving the generator.

The whole plant, aside from the windmill, was set up in a few days by the purchaser, Mr. J. F. Forrest, on his farm in Columbia County, Wisconsin, where it has been running for three years. The fact that he did this work himself without the aid of an expert speaks well for the simplicity of the plant.

Exclusive of the windmill, the plant has cost him about \$250. During the three years of service the only items of expense have been the lamp renewals and a little oil for the generator and windmill.

The windmill to which Mr. Forrest's generator is connected has been running for several years; in fact, it was put up long before the thought of electric lights had ever occurred to him. This windmill is known as a power mill and is used for grinding meal and running some of the farm machinery.

The wind-wheel is twelve feet in diameter and is geared to a vertical shaft, to which is attached the feed-grinder. A pulley was placed on this vertical shaft, and a belt was passed around the pulley of the generator.

The generator is bolted to the floor, no special foundation being necessary. In this particular plant an idler pulley was installed to carry the slack side of the belt on the quarter turn from the vertical shaft.

The battery which is arranged on shelves consists of fourteen cells, or jars, of 7.5 amperes, sixty ampere hour units. The capacity of this battery, expressed in terms of lamp hours, is equal to fifteen ten-candle-power tungsten lamps for eight hours on one full charge of the battery.

To the person not familiar with these lamps, it may seem that a ten-candlepower lamp is too small to give a satisfactory light, but experience has shown that they are large enough for the most of the rooms in the average farmhouse.

The tungsten lamp used with these plants produces a very white light, and its rays are far more penetrating than the yellow rays from an ordinary lamp or of the old-style carbon-filament electric lamp.

Each lamp requires one-half ampere of current, and as the normal discharge rate of the battery is 7.5 amperes, fifteen lamps will be just a full load for the battery.

Battery-builders always rate their batteries on the basis of an eight-hour discharge, so if these fifteen lamps are kept burning for eight hours, sixty ampere hours will have been drawn from the battery.

Now, if only five lamps are in use, the battery could carry these for twenty-four hours. The fewer the lamps in use, the longer they may be used.

On this farm thirty-five lights are wired up, but very seldom are there more than a half-dozen in use at the same time.

The generator is rated at six amperes, thirty-five volts, and can be operated at any speed from 350 to 1,800 revolutions per minute. The shipping weight of the generator is only two hundred pounds.

While the automatic cut-in plays a most important part in this combination, it is at the same time a very simple piece of apparatus. It is very substantially made, being mounted on a neat slate slab about twelve by fifteen inches.

The automatic parts are covered by an aluminum case with a small window and arranged so it can be locked, to prevent meddling persons from disturbing the adjustment after it leaves the factory.

A volt-meter and an ampere-meter and a main-line switch are also mounted on the slate. Connecting posts for generator and battery wires are placed at the bottom of the slate, and similar posts are placed at the top for connection to the lighting circuit. The cut-in takes the place of the ordinary switch-board as used in other styles of battery plants. It would, of course, be impossible to operate a windmill plant without this cut-in.

With Mr. Forrest's plant, during the months of July and August, there was not sufficient wind to give the battery a full charge for a period of three weeks, but the light breezes that did blow were sufficient to generate enough current to relieve the battery of "that tired feeling," and, with what had been stored earlier

in the season, they were able to have lights every night without any interruption whatever. During the entire three years that this plant has been in operation it has not failed to produce light a single night.

Any kind of a power windmill can be used for this work, the same as for grinding corn or sawing wood, but the ordinary pumping mill cannot be used, as a rotary motion is necessary for driving the generator. No special pulleys or clutches are used, as the arrangement is such that it will work and take care of itself in any kind of a wind.

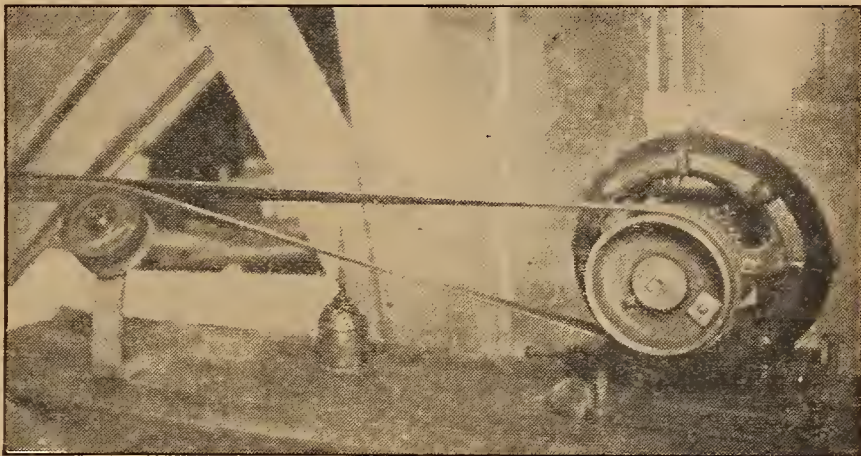
Very careful measurements on this plant demonstrated that with a wind of 8.5 miles per hour the battery can be charged at the rate of 165 watts. This is sufficient power to keep thirteen lamps of ten candle-power burning. As the battery cannot return this current without some small loss, this would be reduced to about eleven lamps in actual service.

Results obtained from this plant and other similar plants in Wisconsin show that a windmill having a wind-wheel twelve feet in diameter will develop sufficient power for lighting the buildings of the average farm.

The average wind velocity for the State of Wisconsin for the year, as given by the Weather Bureau, is 9.9 miles per hour, but the wind usually subsides at sundown, and as the reports of the Weather Bureau are for a period of twenty-four hours a day the actual wind velocity during the daytime is much higher than this, nearly sixteen miles.

There are very few localities in the United States that do not have sufficient wind to operate one of these plants. Another noticeable feature is that the days of least wind occur in the summer months, when the days are the longest and the least artificial light is required.

Comparing the work done by the windmill plant when the wind is blowing 8.5 miles per hour with the work done by a similar generator driven by a one-



The generator, bolted to the floor, is connected to the windmill

horsepower gasolene-engine, it was found that nearly a half-pint of gasolene per hour was consumed by the engine for the same watts put into the battery.

These windmill plants are capable of furnishing, in addition to the lights, power for small motors about the farm, such as cream-separator, washing-machine, churn and vacuum cleaner.

A single small motor can be used for this work, as such motors are so light and portable that they may be transported from one point to another very easily.

It might be desirable in some cases to have two motors, one a little larger than the other, for driving some of the machines that require more power, such as feed-chopper or heavy corn-sheller. Connect up to the grindstone too.

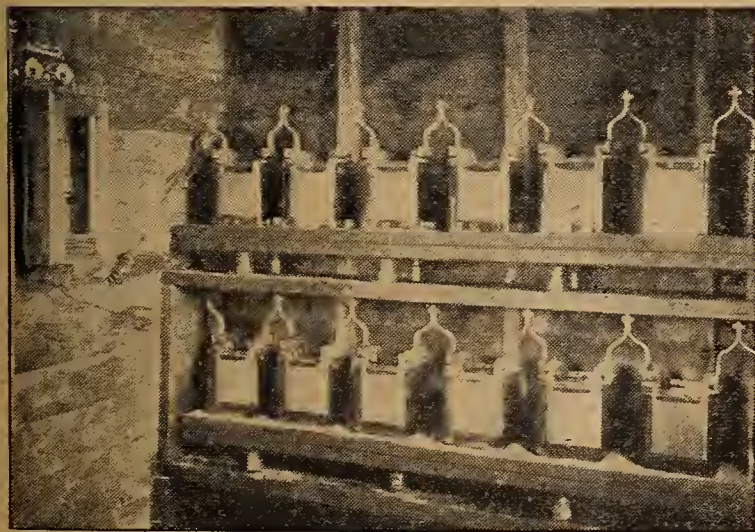
If we go a little farther and equip the farm with a larger windmill, say a fourteen or sixteen foot wheel and a battery of about double the capacity of Mr. Forrest's, the farmer's wife and daughter can then come in for their share of relief from the farm drudgery, as they could then use the electric flatiron for doing the weekly ironing.

Few Flies and Little Heat in Summer

Try to imagine doing this part of the laundry work without the hot stove. When the days are sizzling hot the electric iron and a basketful of clothes can be taken to the porch and the ironing done there where it is cool and comfortable. These electric irons are arranged with a flexible cord and can be plugged into an ordinary lamp-socket, and the iron will start to heat as soon as the button is turned. There is no delay waiting for a hot iron, as the iron stays hot all the time the ironing is being done, so long as the button is left turned on. After the job is finished the ironer will not feel as though she has been doing a walking match, as she has escaped several miles of travel that would be necessary in walking from the ironing-board to the stove and back again if she were using the old style iron.

In the summer-time a small fan can be connected, one that will take no more power than a lamp, but still be sufficiently powerful to keep the dining-room cool and pleasant. At meal-time it also removes the danger of biting a fly every time a mouthful of food is taken, as flies cannot stay in front of one of these fans. A similar fan can be placed in the kitchen, much to the comfort of the cook.

After the day's work is over, the farmer and his wife can enjoy the evening with their books and papers, as they can have a reading-lamp that will shed the light just where it is wanted and not all about the room. These lamps give a fine light for reading and give off a surprisingly small amount of heat. No cleaning, no filling, but they are always ready.



The storage cells are arranged on shelves

the speed will usually be sufficiently smooth to give a fairly steady light, although the cylinder explosions can usually be detected in the lights.

This type of plant has the disadvantage of requiring some attention while it is running.

Another feature is that lights can be had only while the plant is in operation.

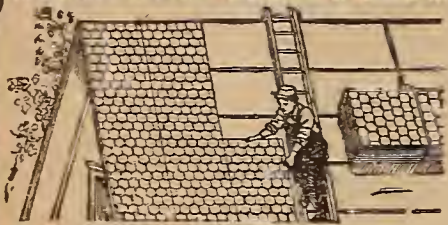
A plant of Class 2 is an elaboration of Class 1 by the addition of a storage battery. The use of the

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The Headwork Shop

Almost as Useful as an Extra Hired Man

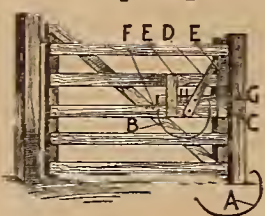
Saving Labor in Currying Horses

WHEN a horse is very muddy let the mud dry, then take an old broom that is worn down to a stub, and brush and sweep the mud off the horses' legs and belly.

Next give him a short but effective scratching with a well-worn curry-comb, then take a horse-brush in each hand, and with alternate strokes with the brushes on the body and both together with one on each of the legs the mud is cleaned off in less time than is required in telling it.

S. E. RHINE.

Spring Gate-Latch



THE sketch shows a gate latch made from an old broken hay-rake tooth. Nearly every farmer has one that has been broken at the coil end. Take it to the blacksmith and have both ends bent as sketched. This latch was designed by one of my neighbors named Frank Ingram, and is known as the Ingram latch.

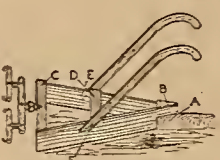
A in the figure shows rake-tooth ends turned about two inches at right angles, C is draw-bar, D is hand lever to move draw-bar, EE are guide cleats, F is holes to adjust tension in spring, G shows mortise in post, H shows how lever is bolted to draw-bar and gate rail. I am using two of these gates on my ranch. C. E. BUSH.

Splice for Woven-Wire Fence

WHEN you have occasion to splice a woven-wire fence, especially where you have a different number of horizontal wires, try this method. Take a three-fourths-inch pipe, new or old, about six inches longer than your fence is high, and loop ends around same (some of the standard fences come with ends neatly looped), and you will be surprised at what a neat coupling this makes.

If you find it necessary to move the fence or make an opening later, you will be more than pleased, as all that is required is to pull out the pipe. L. J. HURST.

Two-Horse Potato-Coverer



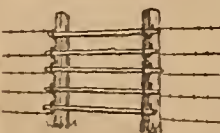
THE sketch shows a tool which will quickly and effectively cover potatoes. Take two boards about five feet in length and eight inches wide. Cut a hole in each so that when put together the openings will be together at the back end. Nail firmly with three cleats, C, D and B. Then nail or bolt handles on at E; old cultivator handles are good. Bore a hole through the middle of C, and make a wire ring for the whiffletree. The operation of this implement is self-evident. A represents the covered row.

HENRY E. CROSS.

Picketing a Calf without Chain or Rope

THE best way that I have found for picketing a calf is to take two iron rods about two feet long with an eye in one end of each. Take a good-sized wire clothes-line as long as you desire, and place a ring on the wire. Fasten the wire into the eyes of the rods, which are used for stakes, and tie your calf with another stiff wire to the ring. It can graze up and down and over the wire without getting tangled up in this device. MRS. JAMES E. BRINSFIELD.

Quickly Built Gate



TO BUILD a gate quickly, take a few old worn-out horse-shoes, and nail them to the two gate posts as shown in the illustration. Now cut a few poles of even length long enough to reach between each set of horse-shoes and project eight inches on each end. Lay the poles in the horse-shoes, and you have a substantial temporary gate.

If hogs run in a lot having such a gate, the bottom pole should be nailed temporarily to keep the hogs from lifting it up. W. B. BYERS.

Safe Dish for Watering Chicks

TAKE any pan or water-tight receptacle that is about the same size at the bottom as at the top. Trim down an inch board till it fits loosely inside of pan. Then bore

in several three-fourths-inch holes, lay board in dish, and fill with water. The board will float, and chicks can walk on it without danger of drowning and drink water through the holes.

I can give the little chicks enough water to last them all day, and there is no danger of any of them drowning.

CHAS. VANDENBERG.

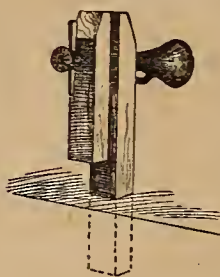
Horseshoe Point for Lever

A VERY useful hand lever for prying stones out of the ground, lifting timber and doing other heavy work can easily be made by taking a good rail or other stout timber and rounding off one end so that it may be used for a handle. The large end is made in the shape of the ordinary crowbar, except that it is wider and thicker.

Now take an old horseshoe, heat it, and hammer the points together a little closer than usual. Bolt or spike the shoe to the large end of the lever, with the points projecting about one-half inch over the end. This makes a strong lever which will not slip and will repay many times the time and work required for making it.

J. G. ALLHOUSE.

Vise from a Jack-Screw



THE sketch shows a vise that can be made by anybody having a jack-screw. It is powerful and gives first-class service.

I discarded the iron-rod handle that came with the jack-screw and made a handle out of good hickory that would not drop out when using. If you haven't a vise or have only a small one, buy a jack-screw and so get two good tools in one. W. A. BAUGH.

Hook Ladder Made from Horseshoes

THE ladder illustrated is very convenient when filling the barn with hay, or for climbing around high buildings. Anyone that has had experience with overhead tracks and hay-carriers knows that much time is lost in getting up to the track for the purpose of changing or oiling pulleys, or making repairs.

By nailing a pair of old horseshoes securely to the top of a ladder, I made a hook ladder which can be hooked over the track at any desired place. Take a light rope, and tie the lower end of the ladder so it will not swing, and you have easy access to make any needed repairs to track, carrier or rope. This ladder is also convenient in pruning trees and repairing roofs. L. E. SMITH.

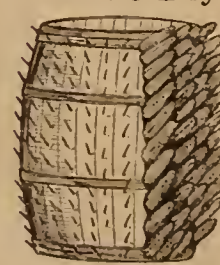
A Dry-Mash Mixer



MY HUSBAND keeps thirteen hundred hens. He feeds dry mash, and the old way of mixing by hand was very tedious. So he devised a sort of churn in the granary. He made a tight box of matched lumber two feet square which is fastened by a shaft of wood running through the box to two upright pieces of timber. Half of one side of the box opens and is fastened by a button when the grain is in. A crank attached to the shaft turns the box. The whole operates over a large bin. A few turns of the box mixes the mash thoroughly. It is then emptied into the bin to be shoveled into pails. This box can also be used for mixing fertilizer.

MRS. ADAH B. HILL.

To Dry Seed-Corn



DRIVE nails into a barrel or short log about every three inches, and onto each one push the cob end of an ear of corn. Many bushels of corn may be put on a big barrel in this manner. Hang the barrel or log, as the case may be, from a rafter or other strong support in a well-ventilated room. Corn dried in this manner is in excellent condition in the spring. R. H. WORKMAN.

Headwork Winner

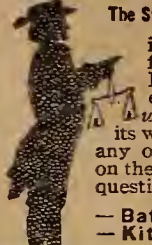
The first-prize contribution in the Headwork Shop in this issue is, "A Dry-Mash Mixer," by Mrs. Adah B. Hill.

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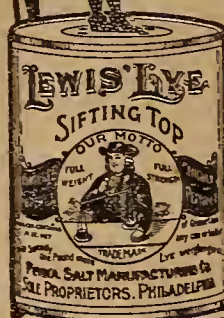
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Fly-Swatting Hornets

By C. M. Weed



HORNETS have been abundant during recent summers in many of the Northern States. They have buzzed in houses and on porches and created much needless alarm for many people. The white-faced hornet is the most abundant kind.

This is really a friendly insect to man, for it comes to our houses to catch flies. You can easily observe this if you will watch one of them on a porch for a few minutes. It buzzes around until it suddenly pounces on a fly and carries it away to devour it at leisure on some secluded perch. Perhaps it may take it to its domelike nest.

Last summer I saw repeatedly many of these hornets buzzing over a cow, skilfully catching the flies upon her back, but so far as I know never stinging her.

These hornets have an interesting life story. The queens, or females, are the only forms to live over winter. They start their papery nests in trees and shrubs in spring and soon establish such flourishing colonies that by midsummer the hornets may be very plentiful.

House-flies and stable-flies are among the most dangerous insect pests because they spread diseases. So do not condemn the hornets without considering the good they do as fly-killers.

Even horse-flies much larger than the hornets are commonly caught. One observer reports seeing a white-faced hornet drop to the ground with a captured horse-fly. The fly, being too heavy to be carried, the hornet cut off its head, legs, wings and abdomen, so that only the middle part, or thorax, remained. This was chewed up and carried off, presumably to the hornet's nest. Later this was seen to be a common practice of the hornets, which are to be credited with killing large numbers of these vexatious pests.

Putting Sheep to Good Use

By J. Pickering Ross

AMARYLAND reader, who is about to take charge of a neglected farm of 150 acres covered almost entirely with "wire-grass," wishes to place sheep there to pasture and help break up the growth. He has never been around sheep, and knows little about them.

Advice could be made more definite if I knew something about the nature of the soil; the configuration of the land, whether hilly or low-lying; the course of cropping purposes, and the amount of capital to be invested in sheep. Under the circumstances, however, I will suggest the various courses I think open.

I do not think it would be well to attempt breeding, at least during the coming season, though eventually, if it is found that sheep thrive on the land that is available, that would be desirable.

With this possible end in view, I would advise the purchase, as soon as the farm is ready to accommodate them, of from forty to fifty yearling or two-year-old good grade ewes of any one of the down breeds: Shropshires, Hampshires or Southdowns. I regard these as the hardiest and best mixed-mutton-and-wool sheep, the best cleaners-up of weeds and rough pastures, and the best fitted, when crossed with a pure-bred ram, to establish a small flock. They would be ready to be bred by September of next year. If, however, no breeding operations were to be started, they would be in good condition to sell as breeders or to fatten for the winter market. Such sheep as these will cost from \$3.50 to \$4.50. I would strongly advise against too great an effort at economy in starting. Scrub sheep are usually the least desirable stock a farmer can buy.

Another alternative is to buy, say, fifty wether sheep. Run them over the farm to get their living off the wire-grass and weeds. Help them along in the winter with a little grain, and after they have pretty well cleaned up the land shear them early (say about April), and then market them. Their wool would probably a little more than pay for what they would have cost you in care and grain, and their growth would probably pay a little more than their first cost, which would probably be about three dollars per head.

Avoid "Headlong" Methods

It would be well for one not well posted on sheep to get some neighbor or friend with knowledge on that subject to do the buying; or, still better, if you have a commission house that you can depend on, let them know just how you are situated, and get them to fill the order with such breeds as I have designated.

And now, as to how best to handle the sheep. I am supposing that there are no

crops as yet on the land, and the first object is to clear it up of weeds, wire-grass, etc., and next, to improve its fertility, both of which can be accomplished in no way so readily as by sheep, following them up, of course, by fairly deep plowing and scarifying. To do this in the best way, fencing is necessary, for it will not do to turn sheep loose over the whole 150 acres.

If the land is already divided into manageable fields considerable expense will be avoided. To get on the land as soon as possible and to make the most of the fertilizing power of the sheep, I would strongly advise penning the sheep in a space not larger than from five to ten acres. When they have thoroughly disposed of the wire-grass and weeds on this lot, move them at once on to fresh ground, and plow in their manure, for if it is left on the surface it will lose some of its value. The means to pen sheep is almost a necessity if you want to make the most of them, and wire fencing is so cheap nowadays that it would pay to get, say, one hundred rods, with which, if there are no permanent fences, pens twenty-five by twenty rods can be made. Sheep are not like cattle or hogs, everlastingly trying to break out. Woven wire for the lower part, with three or four strands of barbed wire at the top (a fine protection against dogs) will cost from thirteen to twenty cents per rod.

The fencing system insures your getting the full benefit of the manure and the urine, which contains a great part of its value and helps to work the solid portions into the ground.

Expect Profit from Mutton

The present use for the sheep is as weed and wire-grass clearers, but a profit from their wool and mutton should likewise be expected. If ewes, profit from their lambs may be expected if they are mated in the fall of next year.

Since weeds and wire-grass are not very fattening, these sheep should at the start have a daily ration of one-half pound of mixed oats or corn with a little bran. You can lessen this, perhaps, if you find that they take well to the grass and weeds, but liberality with sheep always pays, and I would rather see this ration increased than lessened.

I would advise devoting one half of the first ten acres cleared after the sheep to winter rape, and the other half to winter oats mixed with Canada peas. In Maryland this will provide early forage for them in the spring. If the winter is at all severe, yard them and provide them with shelter from rain and storms. Dry cold won't hurt them. Their grain ration should be served in troughs. They must have clean and fresh water, and lumps of rock salt scattered here and there.

Sudden changes in hog-feed retard development. If a change is to be made the present food should be gradually diminished, and the rest of the meal made up of the new.

Let the Pigs Harvest Corn

By C. E. Beckwith

A GOOD way to fatten pigs in the fall is to fence off a piece of the corn-field or to grow a few acres of corn near the hog-yard for this purpose. Where the fence is to go, cut a row or two of corn. Set the posts or stakes quite a way apart. Stretch the wire fence good and tight. Also, be sure to let the fence rest on the ground, then the pigs will not try to get out. When



Getting the corn crop ready for market

fenced turn the lambs in long enough for them to clean the leaves from the corn-stalks as high as they can reach. As soon as the corn is ready to feed it is time to turn the pigs in, and they will almost do the rest.

See that the pigs have what fresh water they want.

Last year a neighbor of mine fenced off two acres of his corn-field and turned his pigs in. He had twenty-one pigs, and it was a surprise to see them grow. Whenever the pigs wanted corn they would break down the stalk some way, but there was never any corn wasted. If one could have the hog-pasture near the corn-field so the pigs could run in both, so much the better, unless one wants to fatten them in a hurry. This neighbor will fence off four acres of his corn-field next year and put in more pigs. He says it is the easiest hog-money he can get.

A Gasolene Jack-of-All-Trades

By Frank C. Perkins

THE illustration shows the construction and indicates the method of operation of a novel gasolene motor-plow at Bedford City, Virginia. This horseless motor-plow was designed for all kinds of plowing and cultivator work and is said to be heavy enough to break land and light enough to cultivate the growing crops.

The entire plow equipment with turning-plows and cultivators sells for \$400. The engine develops nine horse-power and can be used for a variety of other purposes on the farm for which power is required.

This gasolene motor-plow will go as fast as desired, never tires, can be easily turned around at the end of the row and won't step on the plants.

This motor-plow has been used at Bedford City, Virginia, for orchard work. For plowing close to trees and under limbs it is said to be ideal.

Among the attachments used with the plow are the turning-points for breaking



The gasolene plow in operation

land; a seeder for planting corn, cotton or other seed, dropping them in rows or hills; cultivators, which include disk-harrow weeders, listers and sweeps. There is also a spraying attachment with tank and pump which may be mounted between the handles for spraying trees or crops in rows.

There is also a mower cutter-bar and rake attachment which proves useful in harvesting small crops of hay, clover and peas, and when not in use as a plow or cultivator the machine can be utilized with the belt pulley on the engine as a complete power-plant, by which the pump, the feed-cutter, the corn-sheller, the wood-saw, the cream-separator or the dynamo for home lighting may be operated, and many other purposes which need or ingenuity will suggest.

The engine is of the motorcycle type and can be readily detached from the plow and used on a motorcycle, light automobile or delivery wagon with a degree of success dependent entirely upon the mechanical inclination of the owner.

The plow can be guided, thrown in and out of gear, and the speed regulated and reversed without letting go of the handles.

It will be noted that the two large spiked drive-wheels pull the plow, the engine being geared to these wheels. The suction created by the plow holds the drive-wheels to the ground, and the spikes prevent them from slipping, causing it to work equally well in sod, soft ground, loam or sand. When the plow strikes a root, stump or tight rock, instead of straining or jerking as horses would do, the spiked wheels slip, and the machine can be thrown out of gear instantly.

EDITOR'S NOTE—FARM AND FIRESIDE presents this article merely as an interesting possibility. The claims for this little jack-of-all-trades are doubtless exaggerated, though we can see no mechanical reason why an implement to do all the work claimed for it cannot be made.

Winning a Home in the Ozarks

[CONTINUED FROM PAGE 4]

Out of twenty-four hills of peanuts, fourteen had the seed eaten by insects while waiting for rain. The remaining eight came up, and though they were hoed but once yielded us half a bushel of nuts, many of them larger than the seed.

The soil is of peculiar structure and withstands a drought well. Also, it does not bake after a rain like the black land of north Missouri and Iowa. On the surface it is all loose rock, usually small, but with patches of large flat stone, then comes a layer of yellow loam, and beneath a dark-red clay.

To one who has been accustomed to the rich black soil of other parts of the State this looks at first not only unpromising, but impossible of culture. But it has many virtues. Some of its products are much superior to those of the black soil. The vegetables grown here are decidedly better. They not only grow to a good size, but are vastly superior in flavor.

We found that even yellow field-corn grown here was better than the sweet corn to which we had been accustomed, and was so well flavored that we ate it preferably without butter.

While speaking of good things to eat let me say that the meat of hogs fattened on acorns is better than from that fed on corn, and beef raised on the range is excellent.

Range cattle are also profitable. They are considered sure money, and banks let money out more readily on cattle than on land.

I also took off five hundred incubator chickens. A few died, the hawks took a great many and, as we had no fences about the house, the hogs also got to eating them. I saved two hundred and fifty, of which one hundred and ten were pullets.

The Fight Was a Hard One

In August came three weeks of cloudy weather, very damp and cool, which did much harm to our late plantings. We had fought the season through step by step, planting and replanting with dogged persistence. We set out cabbage and tomato plants after the first of July, and it looked as though we would have an abundance of both till this cool weather came. My husband set out twelve hundred sweet-potato plants in June and hauled water for them, a barrel at a time, up a long, steep hill from a spring a mile away. The season was the worst in many years here, and we had to contend energetically for every vegetable we were able to secure.

In the spring he had prepared his new ground with care, and several old-timers told us they had seldom seen new ground in as good condition. He consulted old farmers to find out how best to do many things. At the end of the year 1911 we had spent twelve hundred dollars. From this came every expense, our living for eighteen months, our improvements and our stock.

We had sold forty hogs, had thirty pigs and ten brood-sows and one boar on hand. We had five heifer calves, one cow, a pair of mules, a wagon and harness and a few farm implements. We had wire fences around twenty-three acres of field, sixteen of which were cleared; a garden, large yard, barn-lot and three acres of land for orchard were also fenced with wire. We had a four-room house, two hen-houses, two brooder-houses, a large hog-shed built and enough logs cut and at the mill to do all the rest of the building we wished, such as two large porches and two more rooms on the house, a good-sized barn, corn-cribs, tight feed-rooms and various other buildings, such as wood-shed and smoke-house.

What We Were Able to Raise

We had raised about two hundred and thirty bushels of corn, eight bushels of sweet potatoes, five of Irish, a bushel of navy beans, twenty-five gallons of sorghum, enough tomatoes to last till February 1st, considerable fodder, some cow-peas and cane-hay. Our turnips, of which there were several bushels, were frozen before we pulled them.

The most serious mistake we made was in not selling our hogs right off the range. Instead, we fed them all the old corn we had and our crop, then, had to sell at a low price on account of the cholera.

This is not a corn country. We now plant peanuts, as they will produce more and better pork acre for acre than corn grown in the corn belt. This section of the country offers excellent opportunity for hog-raising on forage crops. Red clover and all the legumes do exceptionally well here. Red clover seeds easily and makes a heavy crop for either hay or forage on ground that is not too badly worn. Cow-peas or sorghum-cane are almost as valuable for either purpose.

Although the land is better suited to other crops than corn, newly cleared ground will produce good corn crops for three or four years, after which it should be given over to pasture or forage crops for a time.

All kinds of fruit-trees do well here if given ordinary care. Throughout the Ozarks large crops of strawberries are grown for the northern market.

We have found the bulletins and farm papers to be of much help. We have been studying those on the Angora goat, as the climate, pure water and character of the land make this an ideal place for raising them, and they in turn provide a cheap means of clearing land of underbrush.

The mildness of the climate and the health-giving qualities of the splendid air make this an excellent place for people in poor health.

It is not only very interesting, but it is also no small thing to clear a timber farm and to make the wilderness and the solitary places "blossom as the rose."

A Young Farmer's Pigs

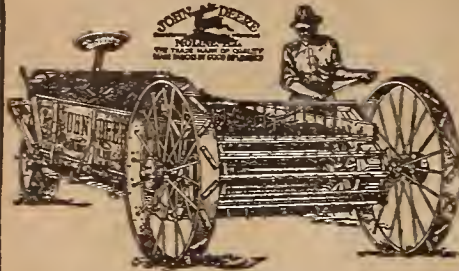
By John E. Taylor

THIS little Maine farmer and his grandfather surrounded by fifteen "piggies," all from one old pig! When the pigs were five weeks old they sold for \$2.50 each. The young farmer is now three years old, and he is going to spend that \$37.50 for sheep.



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Moline, Illinois

Crops and Soils

Thrashing-Time Notes

By P. C. Grose

A NUMBER of drain-tile placed one upon another as the grain-bin is filled will provide air-channels which will help to keep the grain from spoiling should it be a little damp. It is best to use small-sized tile and more of them.

If a heavy rain dampens the shocks throughout, drying of the interior sheaves can be hastened by going around after the outside of the shock is dry and pulling the shock apart so the sun and wind can reach the inner sheaves.



See that there is plenty of cool drinking-water at the machine and in the field. The smaller boys may often make themselves useful as water-carriers. As a water-vessel, a jug is best adapted for this purpose; it helps to keep the water cool and free from dirt. A short strap attached to the handle greatly facilitates carrying and is almost essential if water is to be taken back and forth to the laborers in the field.

If a binder-canvas is available it will greatly lessen the difficulty of cleaning up about the machine to spread it on the ground beneath the feeder, where so much grain falls. After the bulk of its contents have been removed, the corners of the canvas can be drawn together and the remaining grain emptied into the machine. In this way the space covered by the canvas is thoroughly and easily cleaned.

Dynamite on Boulders

By O. R. Abraham

I AM a strong advocate of the use of explosives in clearing fields of stumps and boulders.

We had a field in which lay a dozen boulders, larger than sugar-barrels. These, in most cases, were embedded in the soil and had been worked around and over for thirty years.

In blasting these boulders we used forty per cent. dynamite, drilling down under them and placing the charge to roll them out on top of the ground, as we have found it impossible to successfully burst them while embedded, even though but a little depth in the ground.

We used a two and one-half-inch auger in order to concentrate the shot. We find the larger auger very necessary in blasting, for we have found by having a large hole, breaking up the sticks of dynamite, after

removing the wrappers, and tamping the pieces in the bottom of the hole lightly, and using a piece of stick in which to put primer and fuse to explode the whole charge, that we have the load so much more concentrated in one point than when sticks are put in end on end. The explosion, or force, is much greater. Of course, having the load in a "wad" one must learn to guess pretty accurately where the load is needed. We find the same amount of dynamite thus used gives more power than when left in the stick. We find the large auger and the "wad" of dynamite gives better results in stumping, also in throwing out the large boulders. We first learned this from a contractor who pulled trees from the ground whose roots were often ten feet long. He used the concentrated charge.

We burst the boulders, when once out, with one-half to one and one-half sticks placed on top, preferably on a flat or concave place on the rock. In other words, we figure the charge as we would the blow of a powerful hammer, aiming for the blow to come in force near the central part of the rock. We paste this over, after priming and placing fuse, with the toughest mud we can find. One explosion usually reduces the boulder to handling size. If not, we re-shoot. The broken pieces are ricked across ravines under the fence to catch and retain sediment.

In boulder-blasting always get a safe distance from the explosion. I often get away one hundred to two hundred yards, for the pieces of stone fly like bullets.

Concentrate, or bulk, your load and note results.

The garden is the spice of rural life and gives the farm its flavor.

Use the Hay-Tedder

By O. R. Abraham

BEFORE the tedder came into use it was "make hay while the sun shines" or not make it at all. Now it is different. With moderately dry air and the tedder, good hay can be made. In fact, a great deal of the curing is now done in the windrow or cock, or even in the stack.

A few years ago, whenever a very heavy piece of hay was cut with the mower, men had to go in with the pitchforks and turn the thick places in the swath. A very hot sun was depended upon to thoroughly cure the hay in the swath. The hot sun bleached the hay to certain extent. Even when dry on top there was often wilted or even green hay underneath. If a rain came after the hay had partly cured it made poor hay at the best. In speaking of this I am pointing mainly to clover-hay, as that and alfalfa are both more or less difficult to cure without the tedder.

If we cut the hay while it is wet with dew or rain we ted immediately after, so as to knock off the water. We ted sometimes only once, other times twice, and again three times, but we are careful at all times to ted while green or while the dew is on. With clover we aim for a considerable part of our curing to come about in the windrow and the haymow. If the weather is moderately dry and hot the hay goes into the barn a bright green color. In fact, there is considerable moisture in the larger stems, and you can twist the hay like so much twine. At the same time the smaller stems and the leaves are almost dry. In fact, the leaves will crumble into dust, but as the main handling comes when the dew is on and the leaves tough there is comparatively little loss of leaves. Up to this period, if the weather is at all favorable, the curing will have been done in a very short time, where without the tedder it would have to lay in the sun longer.

The effect of the sun and moisture would make the hay on top of the swath brown or gray.

In haying-time every minute of fair weather counts. With the tedder you save many of these minutes. In fact, the difference may be that you have your hay in the dry, while your neighbor who is curing the same old way may have his out when the rain comes. Or he may wait for fair weather, while you make hay between showers. You have your clover off, and the new growth starts, insuring a good seed crop, while your good friend over the fence gets his off late, with the result of little or no seed.

We find that we can cut several days earlier when using a tedder. This is a decided advantage, especially to the seed crop. Further, we believe the hay given the green cure has more feeding value than the weathered hay. It seems so to us.

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Garden and Orchard

A Greenhouse for Small Farms

By W. A. Toole

THOSE having large farms will not find a greenhouse a profitable undertaking, because farming operations on a large scale do not fit in well with greenhouse work. But there are many people living within reasonable distance of towns or cities who have a limited acreage and must farm intensively. To these a small greenhouse where early vegetables and winter lettuce may be grown will be found a profitable combination with truck-gardening, fruit-growing and poultry.

Two crops of the loose-leaved, or Grand Rapids, lettuce may be grown during the winter and still give time and space to grow the early vegetable-plants needed for the garden, as well as many cabbage, tomato and other vegetable plants to sell. We have found the loose-leaved variety of lettuce to be much easier to grow than the head varieties, and here in Wisconsin and in neighboring States it sells better than the head varieties. Even if your town is not accustomed to winter lettuce a market will soon be created, and you need not fear the competition of shipped-in stuff as long as people can get the fresh, home-grown article. It takes from twelve to sixteen weeks to grow lettuce, and the times when it sells best are from Thanksgiving to New Year, and from early February to spring.

About the middle of August the first lettuce-seed should be sown in flats, and two or three more lots sown at intervals of about a week. The seed is not expensive, and enough should be sown to fill every possible bit of space. As soon as the first character-leaves show, transplant into flats or in the bench about an inch and a half or two inches apart. Before the leaves begin to crowd transplant into the benches five inches apart each way. The seed for the second crop should be sown about the first of November so that it will be large enough to plant right into the benches as soon as the first crop is out of the way.

Practical Lettuce Gospel

The soil should be loose and quite rich. We have had the best success with about half well-rotted manure and the other half ordinary garden soil with some sand added. Do not pack the soil for lettuce as you would for other plants, and do not press the soil about the roots very firmly when transplanting. Water thoroughly when watering, and do not water again until the soil is dry. New soil will not be needed for the second crop; simply stir it up and loosen it well. Lice will be the worst insect trouble. Fumigate with a tobacco preparation often to keep them down, as they will ruin a crop if not kept in check. We have usually started marketing when the plants were rather small, so as to keep up a succession, as this is necessary when selling locally in a small town. We start selling when two plants stuck together with a toothpick weigh two ounces. As soon as a single plant weighs about two ounces or a little over we use a single plant to a bunch. Later, before all is marketed, single plants weigh twice that or more, but are sold as one bunch. We have received forty-five cents per dozen bunches from the local grocer, and he retailed them at five cents each. While the grocer could have bought shipped-in stuff cheaper he was glad to handle ours at this price because of the better quality. There is not a great deal of profit in lettuce-growing, but the expenses are not heavy, as the lettuce does not require a high temperature, and it gives occupation during the winter months, and makes it possible to have the greenhouse for starting early spring plants where the most profit is actually made. There will be a good many waste leaves when marketing the lettuce, and these are the best kind of green feed for the flock of chickens.

If you are so situated that you think a greenhouse would be profitable do not hesitate because you lack experience. If you possess common sense you will acquire the experience without any considerable loss due to mistakes.

Have Plenty of Sweet Corn

By A. Cornell

THERE are too many people who fail to provide themselves with this, one of the most palatable products of the truck-patch. They waive the advantages they might just as well realize from the intelligent careful breeding and selection that man has made with the object in view of catering to the refined taste.

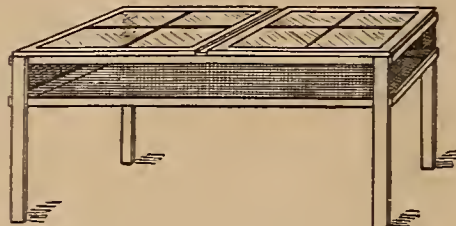
By making different plantings, ranging from early to late, one can enjoy the fresh product through a long season. If he lives near a town of any size there is always a market for the extra. And whether near a town or not there are undeveloped possibilities in drying it, if extra care is taken in handling.

For cooking we have a way of our own. We took a piece of galvanized hail-screen

(chase hail-screen because it is stouter and stiffer than the common), shaped it to fit in our wash-boiler and fastened blocks of wood under it to hold it about three inches above the bottom of the boiler. Putting this in for a false bottom to hold the ears of corn out of the water, we fill in above the screen with well-cleaned and silked ears. We put on a tight lid and let boil. This steam cooking leaves the corn a more natural color than boiling, and is not so bad about cooking the taste out if overcooked.

Our scheme for drying is to make a sort of box frame with sides and ends at least ten inches deep, on which we tack a fine-mesh screen. Light muslin is all right for bottom, and we use our hotbed sash for the top. This relieves one of the annoyance of chickens, birds, flies, dust, etc. By having a piece of duck fixed to fasten over it, it can be made rain-proof also.

This makes a far superior product than with ordinary boiling and unprotected dry-



A drier for sweet corn and fruit

ing. Compared with the price of the canned article, it is probably worth at least twenty cents a pound.

As for the variety to plant the most of, there is but one sweetest and tenderest for our use. It is the Golden Bantam.

Better Apple-Market News

By Nat T. Frame

THE average orchardist who lives in a commercial fruit-growing section believes, in his egotism, that the supply end of the law of supply and demand, as it operates in the marketing of apples, will be governed by the crop from his section and a few dozen other commercial fruit sections, which he names to you in rapid succession and with the confident air of one having inside information.

If he is a friend of yours and takes pleasure in boasting about the importance of his county's crop on the apple-markets of the world put these questions to him:

"How many barrels of apples have you generally shipped each season, for a few years back; to John Smith, General Merchant, Podunk Center?"

"Twenty-five to fifty."

"How many did you ship him this last season?"

"None. He wrote me that the local farmers had apples to sell instead of having to buy as usual."

"The crop around Podunk is not generally taken into account in crop reports, is it?"

"Certainly not; it doesn't cut any figure."

"But you just said it cut a figure at least as big as twenty-five in your sales last season. And if ninety-nine other Podunks cut an equal figure with the dealer to whom you have been accustomed to sell the bulk of your apples can you not see why he was not so anxious to bid up the price on those 2,500 barrels of yours?"

Having thus got the big apple orchardist on the defensive and possibly taken a little of the conceit out of him, really how confident is it safe for you to be that you are correct in your implied argument that crop reports to be of value must cover the non-commercial orchard sections as well as those known to be big centers of the industry?

Let Us Open Our Eyes

Crop statisticians differ in their opinions. The crop reports of the International Apple-Shippers' Association, which are apparently based mostly on reports from the commercial sections, have generally been more safe to follow than the Government's apple-crop reports, which theoretically, at least, are based on reports from everywhere.

However you may feel about where the emphasis should be placed in considering the origin of the crop information you are safe in taking a positive stand in favor of more accurate market news at apple-picking time and a more wide distribution thereof. It is now the custom, and probably will be for some time, for most apples to pass from the hands of the grower at picking-time for a cash consideration. The attitude of both buyer and seller toward that cash consideration depends on the market news that each possesses at the time. The buyer is generally at an advantage because he has some guidance in the crop reports of the International Apple-Shippers' Association. The grower could have access to the same figures if he tried, but generally does not, and most often would not believe them if he saw them, simply out of suspicion of the distributors. Both ordinarily are matching wits in a game of guessing, pure and simple. Gambling on the turn of the market.

Beyond doubt carefully compiled and unprejudiced market news at picking-time would put the apple industry on a firmer

basis, remove much of the expense loading that now keeps up the prices to the consumer and help everybody. The International Apple-Shippers' Association claims that its crop reports come close to filling the bill. But unfortunately so far its officers have never taken steps to get in touch with the growers through the horticultural societies so as to remove from the minds of the growers the suspicions which are natural against reports coming from an organization with which the growers' organizations have never been accustomed to co-operate.

The most helpful sign for the future solution of the apple-marketing problem is that the government officials who will probably have a hand in the reorganization of the national methods of collecting and distributing crop reports seem to realize that the apple industry in this country is deserving of more than the former perfunctory notice, and we are led to hope that ways and means will be worked out for compiling and placing in our hands, whether growers or consumers, crop information of such value that we can sell or buy our apples—with our eyes open!

Apple-Growers are Satisfied

A Letter

DURING the last few days we have received at our office a clipping from FARM AND FIRESIDE in which you state an interview you had with an Idaho farmer on conditions in the Northwest, one paragraph of which is on the apple-raising industry and prices received for apples this past year and season just closed.

By publishing such information you no doubt are under the impression that you have been reliably informed and that you are sending broadcast to the subscribers of your paper facts that will be of benefit to them. However, such is not the case, and you are doing a great injustice to districts in the Northwest which devote their energies to raising apples and are getting the returns for same. There is nothing to indicate to them that there ever was any apple boom or that the time will ever come when there will not be a demand for the grade of apples that we grow in the real apple-raising districts of our country.

If you were seriously ill you would send for a physician, and not for a newspaper reporter. When you want the facts on the apple-growing industry, get them from an apple-grower in an apple-growing district, and not from a man principally engaged in general farming.

YAKIMA VALLEYS ORCHARD COMPANY,
T. J. MURRAY.

GARDENING

BY T. GREINER

Plant-Box Drainage

WHEN plants that are raised in boxes standing in a sunny window, or on a veranda, or in any other place, may these be tomato-plants and eggplants or flowering plants, fail to thrive, although apparently well taken care of and especially being regularly watered, the trouble is most likely in the soil and in overwatering. Drainage is just as important for plant-boxes or flower-pots as it is for a field. There should be a reasonable number of holes in the bottom of the box, and the bottom covered with a layer of coarse material as a foundation for the good, fibrous loam in which the plants then have a chance to thrive. The richer the soil in the box, if kept continuously water-logged, the sooner it will get sour, and the most of our cultivated plants will fail to do well in sour soil. Do not water too often, but well when you do, so that the moisture will reach clear down to the bottom. If there is an excess of water this will escape through the drainage-holes in the bottom, and the air admitted through these holes also helps to keep the soil sweet.

Weeds Waste Water

Not every gardener has the chance to irrigate. Then he must husband his supply of the soil moisture. The waste is from two causes, rapid evaporation and weeds. Where weeds are allowed to crowd the vegetables, more water is pumped up by them and wasted than is lost by evaporation even in hot and dry weather. A light cover or mulch of dry, well-pulverized soil on top effectually checks the loss by evaporation. Keep the cultivator going, so as to maintain the dry soil mulch. If it happens to rain wait just long enough for the soil to get back to right condition for working, and cultivate again. I keep the cultivator, or rather two of them, one with seven wide blades and a spike-tooth cultivator, always ready to hitch to, and whenever the soil needs freshening up, I go over the whole garden where the rows of vegetables are two feet or more apart. But also and always keep out the weeds from between the plants in the rows. They drink up much water that is needed for the vegetables.

Truck and Auto-Truck

A Virginia Reader asks whether "truck-farming" can be made profitable at a distance of twenty miles from a good market, the produce to be sold directly to consumers. Plenty of water is available for irrigation. Up to a few years ago we used to think growing vegetables for direct sale to consumers was impracticable and out of the question where more than five or six miles were between grower and buyer. Farther away from a good market, the market gardener became a "truck-grower," and grew special vegetable crops, such as lettuce, celery, onions, cabbage and cauliflower, for a wholesale market or shipment or delivery to commission merchants. But distance now cuts much less of a figure than formerly. Carrying your produce on a modern auto-truck, you can reach your customer twenty miles from your place in little over an hour's time. You can do your peddling in less time than when you drove a horse and wagon, do not have to stop for feeding and resting your horses and will get home in a little over an hour after you have disposed of your load. So I do not hesitate to answer the question in the affirmative, and am quite sure that under these changed conditions and improved transportation facilities it is very possible and feasible to establish a successful market-garden business twenty miles from a good market.

Watering the Garden

It is seldom or never that our garden crops have all the moisture during the entire summer that they could use with profit to us. When we have a free water-supply from hydrant or tap within reasonable distance from the garden, and make proper use of it, we can raise many of our garden vegetables without difficulty and in great perfection. The full water-supply may make more difference than even heavy manuring. For that reason we can well afford to incur some expense for pipe and hose and fixings, and spend some time and effort on so praiseworthy and result-promising innovation. If there is any such chance, get pipe or hose enough to reach every part of the garden, otherwise as much of it as possible. There is much satisfaction in being able to grow fine vegetables, and an abundance of them, even in the driest summer, and have tropical luxuriance of plant growth while other gardens are burnt up with heat and are all but bare of vegetation. One of my neighbors has a little garden-spot, hardly more than twenty feet square, located a short distance from his kitchen door. He makes free use of the water privileges from the village water-works, and his garden looks always fresh and teeming with vegetables in perfection.

Chinese Wistaria

The Chinese wistaria, about the propagation of which a reader inquires, is one of the finest of hardy veranda climbers, good also for covering dead tree-trunks and for similar places. The inquirer has a white one and wishes to raise another from it. Nurserymen raise plants mostly from cuttings of the dormant wood or by grafting on pieces of root. Wistaria cuttings do not root so easily that it is an easy or sure task for the amateur to make new plants in that way. The only way for the inexperienced to secure such new plants, and many others besides, even grapes and gooseberries (if he does not prefer to buy them from a reliable nurseryman), is to layer one or more of the shoots in spring. The young shoot is bent over into a depression of the ground and covered with moist earth at the point where it is desired to form the roots. At this point, too, hard-wooded or stiff branches may be wounded or half cut across in order to facilitate the formation of roots. In the fall or spring following, the new plants may be severed from the parent plant and set into the desired new position.

No Patent Remedies Wanted

I would not encourage the idea of taking out a patent on any, even the most successful, device for protecting melon and other vines from the ravages of insects or disease. The information on how to protect farm and garden crops against the various enemies that threaten their safety is usually given out free to the rural public. Manufacturers may, of course, patent and put on the market improved devices and machinery, such as sprayers, spray nozzles, powder-distributors, etc., but I doubt that it would pay anyone to patent a mechanical or other device intended to keep beetles from our vines. In the Bordeaux mixture and lead arsenate combination we have a sure-enough non-patented remedy or preventive for the striped cucumber-beetle, the flea-beetle and most other troubles of insect as well as fungous origin, with which our cucumber, melon and squash vines are liable to be afflicted. A single application often does wonders. A few days ago, on the first hot day after a good rain, I found, to my dismay, my vines covered with yellow-striped "bugs." I quickly applied the spray remedy, and on next visit to the field not a beetle was to be found. And I have seen very few since, and then generally only on some hills that had been missed in spraying.

The Market Outlook

Hitting the Dollar Hard

By W. S. A. Smith

THE hot weather end of June and early July played havoc with the beef-market according to the packers, but I notice, every small run, that recovery in prices is very quick. Grass cattle will soon now affect the market and be preferred by packers to half-fat corn-fed steers. There seems to be nothing in view to break stock-cattle prices except dry pastures and tight money—two factors which may cut a large figure in the next few months. We have had, in western Iowa, the driest June since 1890, but, owing to excessive moisture in May, crops, with the exception of oats, have not suffered to any extent. The hay crop both in regard to quantity and quality is very fine, and quality cuts more figure in profits than many farmers figure. The mere fact that cattle eat damaged hay in winter does not mean that it is good feed, and I always notice that my poorest gains on cattle are made in the years when the hay is damaged and woody.

First-class clover or alfalfa, and that is the only kind of hay farmers can afford to raise, furnishes sixty per cent. of the fattening ration, whereas poor or damaged hay furnishes only bulk and is little better than oat-straw in feeding value. It is impossible in putting up large quantities of hay to help getting some of it rained on or damaged, but a large share of the hay put up in this big country loses at least one third of its feeding value by being cut overripe and put up overcured.

Corn, owing to hot weather, has picked up wonderfully, and lots of it is now laid by. I have had a man on horseback three days, sowing Essex rape ahead of the corn-plows just before the last cultivation. It will furnish an immense amount of feed during September, October and November for sheep, cattle, or hogs, if corn is hogged down.

Ten dollars' worth of seed covers fifty to sixty acres. I don't know how the other man does his figuring, but if I buy six hundred lambs October first and feed them for the thirty days in October on alfalfa they would consume thirty tons, worth three hundred dollars, and make no more gain than they will on the ten dollars' worth of rape. This is a point worth thinking over. If stock can be kept gaining in fall after the pastures are done without eating into the winter supply of hay in October and November, it is often possible to carry the stock through and get the late-spring and early-summer prices, which are generally much better than early-winter prices. Winter is long enough anyway, and I do hate to feed good hay with little or no profit through October and November, when the same hay fed in April will be worth double.

Don't Fear the Tariff

By J. Pickering Ross

THE course of the sheep-market has for a month past been as meandering up and down hill as the streets of Kansas City; and the prophet who can predict which way it will go even a day in advance has, as yet, failed to appear. Jumping backward or forward from fifty cents to one dollar and fifty cents in forty-eight hours has been common. This has been caused by the vast flood of lambs poured in from all points, but principally from the South. Till this flood subsides shipping sheep and lambs must be a gamble. However, it is comforting to know that prices have never for a long time reached the point where fair profits become lost to sight.

The wool-market has been showing more life, encouraging growers to stand firmly against any attempts to break prices. Michigan and Ohio holders have been demanding twenty-one cents and frequently getting their price. Western wools are ranging around seventeen and eighteen cents. Foreign markets are strong and manufacturing active at all great centers of the woolen trade.

From the first intimation that the tariff was likely to be taken off wool and meats FARM AND FIRESIDE has tried to impress on its readers the reasons why these changes were less to be feared by sheepmen now than when the same course was pursued by a former Democratic administration. It is not necessary here to repeat those reasons, and it is satisfactory to know that the first experiments in importing the frozen meats have, so far, proved anything but encouraging to the promoters of that business; and it is the more so because a certain section of the daily press has, probably for political reasons, been active in promulgating reports of the wonderful effects that

the arrival of some few shipments of frozen beef, mutton and lamb have had in lowering the prices to consumers.

The real facts are as follows: Quite recently four ship-loads of frozen meats have arrived in San Francisco. There they found the butchers paying from eight to nine and one-half cents per pound for sheep and yearlings, and ten to eleven cents for spring lambs, the supply being plentiful. According to reliable correspondents of the *American Sheep-Breeder*, which publishes their letters in full, eighty per cent. of the frozen-sheep product is still unsold, and is being held in cold storage at 9.6 cents per pound. The general feeling among retailers is that, though at first curiosity to find out what the frozen meat was like prompted a little flutter of trying it among their customers, the result has been to assure them that as long as home-grown mutton and lamb remains as cheap and as plentiful as at present the imported frozen article will be little called for and will certainly not affect prices to any appreciable extent. As regards those prices, I think that, as compared with those paid by the people of England and of Europe generally, they are so moderate as to admit of no cause for grumbling. In this, of course, I am referring to what the farmer is receiving, and not to what our faulty methods of distribution is causing the ultimate consumer to have to pay. My chief object, however, in this letter is to point out that the facts as now ascertained show that our sheepmen need fear no very dreadful effects from whatever changes are likely to be made in the tariff.

Don't fail to scald the churn thoroughly, and rinse with cold water before churning.

Prosperity in Hog-Market

By L. K. Brown

THE combination of conditions which at present surround the current hog-market occurs but once in several years. The outlook for the farmer who has had the foresight to accumulate a good drove of swine, and who has been fortunate enough to not be visited by cholera, could hardly be brighter. The market is making history, and indications are that it will not get far away from the present condition for some months to come. Of course there will be the usual temporary fluctuations and the seasonal changes, but there can be no dropping out of the bottom of the market as some are apt to expect when prices get abnormally high. The supply is but moderate and the demand heavy and insistent.

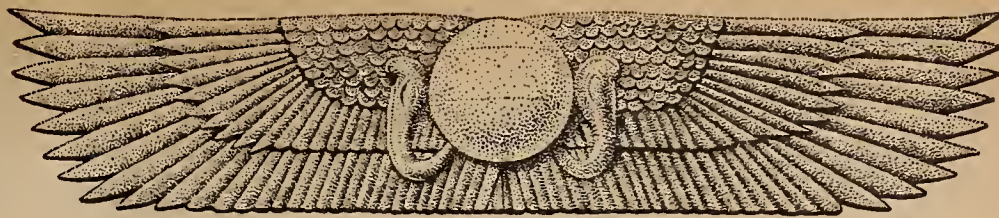
Due to the devastations of disease the past two years, the corn belt is short in breeding stock. There is a wide-spread effort to get back into hogs, but this takes time, and while it will eventually supply the shortage the keeping of female stuff increases the shortage temporarily. The outlook appears favorable for a long enough period so that there is but little inclination to grasp the opportunity to cash in every hog possible before a drop comes, and so, by this short-sighted policy, to increase the shortage later.

The cattle-market is in an unhealthy torpid state, and the sheep-market as erratic as ever, while the hog-market maintains a healthy tone. With all meats at a high price there is a reason for this. While pork may appear high it is really the cheapest meat on the market. There is no waste in it, even the scraps of fat are edible. All the edible fats, both animal and vegetable, are high. Butter is out of the reach of the working man, and lard and oleomargarin must take its place. The hog is the most merchantable of all the meat-producing animals. He has not gained the reputation of the farm mortgage-lifter without reason.

The distribution of cattle throughout the world is more uniform than of hogs. Every country produces a good percentage of the beef it consumes, and several have a small surplus for export trade. This even distribution curtails international beef trade everywhere. Domestic demand is the main demand. The same is true of the sheep industry, but it cannot be said of the swine industry.

The American corn belt feeds the world so far as pork is concerned. One small area controls all the surplus of one of the world's most staple foodstuffs. A shortage here has a world-wide effect. The corn belt is the only district that can export pork in any quantity. Elsewhere domestic consumption is greater than domestic supply. This opens a market outlet for pork that is not found for beef and mutton.

It is seldom that this condition is felt as plainly as at the present time, but circumstances have become such that this subtle power of world-wide supply and demand has manifested its uncontrollable power. It is not a condition that will pass in a moment, but will continue until there is a market increase in the supplies of cattle, sheep and hogs.



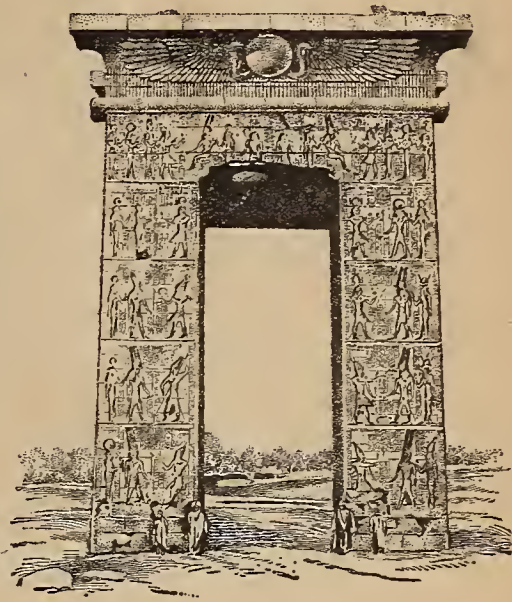
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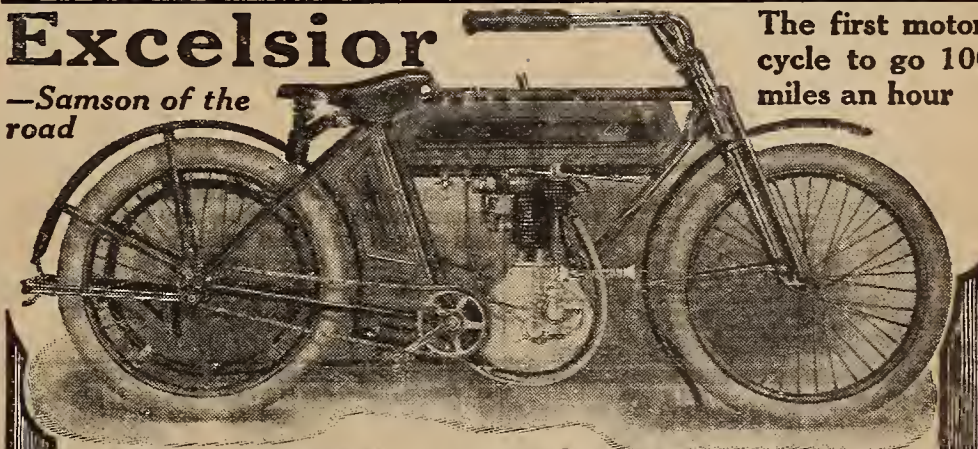
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The Value of a Strain

Some Pertinent Facts About In-Breeding By Theo. Hewes



IN YOUR efforts to build up and maintain the highest possible standard for the farmer and his family, allow us to suggest to those who may be interested in poultry that for a foundation the best is always the cheapest.

I do not mean by this that the very highest priced show specimens should be purchased by the average farmer, but such breeds and varieties as are known to possess sufficient merit to reproduce in their offspring birds of the highest general quality.

One cannot afford to do haphazard guessing in the breeding in any line of thoroughbred stock, and poultry is no exception to this rule. While cattle, hogs and other animals are known by their pedigree, poultry is known by its strains, and it is this strain to which we desire to call attention, as, no doubt, the word as used and understood by the fancier is not properly understood by the average breeder.

A strain of fowls is produced by an individual or firm having a fixed purpose in mind and trying to so mate their fowls as to mold a type that can be depended upon to reproduce in their offspring the characteristics of the parents, and this can be brought about only by a careful system of in-breeding; and it may be well to say here that in-breeding in poultry can be carried further than in any other live stock, as the chicks come to us from a cold blood in the form of a germ in the egg, and it requires the second heat to bring it to life.

The blood veins and arteries of a chick are in no way connected with the mother, as is the case with animals, and this condition allows us to go further in direct in-breeding than any other live-stock breeder would dare to.

To cite a case that may help to illustrate: Many years ago the Brown Leghorn breeders realized that better results might be obtained from this fowl as a winter egg-producer if we could produce them with a low rose comb instead of the large single comb, then so very prominent. The single combs were large and, being so very delicate in texture, were easily frosted, and when frosted the females would cease to lay until the comb healed up. If the laying habit that we had bred into them could be maintained during the winter months, we could add at least thirty-three per cent. to their actual value as egg-producers, so the scheme of producing a rose comb was given a great deal of attention by the fanciers.

The Task of Making the Comb Smaller

Several out-crosses were resorted to in order to do this, and finally we had accomplished what we were after; we had produced the rose comb and still held our type and color, but unfortunately the rose combs as produced from these crosses were so large that we had gained but little, as they froze nearly if not quite as easily as the single combs. Now, to bold what we had gained and to reduce this size was the task of the fancier.

We were at this time interested in this breed and, like other fanciers, were anxious to be first to produce them with small rose combs.

From one season's matings we were fortunate enough to produce one cockerel that had almost our ideal and, in addition, had all the other good qualities of the breed. He was, in fact, a high-class exhibition specimen, as we bred Brown Leghorns in those days.

Now, with this one bird as a foundation, could we produce a strain of these rose-comb birds? If so, there was but one way to do it, and that was by direct in-breeding.

Knowing the pen from which he was bred, we mated this cockerel back to the females, one of which was his mother. This cross brought us several small-combed pullets, undoubtedly from the same hen that had produced the cockerel, or, in other words, from a direct cross of the son and the mother.

We then selected the best of these pullets and bred them back to their own sire. This cross gave us a still larger per cent. of good birds, both male and female, and we again mated the cock back to the pullets and followed this system until we had thirty-one thirty-second of the blood lines of the sire in his offspring.

It Shows What In-Breeding Can Do

Regardless of the severe criticism that is often indulged in by breeders who object to in-breeding, instead of weakening the flock, as is claimed by many, we had built it up in size, stamina and had perpetuated one of the best egg-laying strains we had ever owned, and in doing so we had reduced the size of the comb to less than one third of the original size.

We are not interested in this breed now, nor have we been for several years, but this old blood line is to-day in evidence in many of the best rose combs in this country, and I cite this case here to show how far one may go in the breeding of sires to his own daughters without injury to the flock.

Of course we do not advocate this close in-breeding now; in fact, there is no necessity for it, as there are many reliable strains with good combs at the present time, so that one is able to get what is wanted in the way of improvement from another breeder's yard.

This same system of in-breeding has been practised by nearly every fancier that has made fame and money out of the breeding of fancy or thoroughbred fowls, no matter what the breed or variety.

This system is of course more difficult when we have parti-color breeds to consider, as the shape and color both have to be guarded carefully in order to hold them up to the present ideal.

Take the winning Barred Rock females at the Madison Square Garden Shows the last few years. Nearly all of them can be traced to one or two individual specimens that by some rare chance in mating had developed in shape and color superior to others of their breed, and by the judicious system of in-breeding in the hands of thoroughly posted fanciers have been able to reproduce their equal or superior in show points.

What has been said of shape and color holds good in the producing of an egg or a meat fowl.

Equipped to Solve Breeding Problems

The road to successful breeding was never so easy of success as now, for we know with certainty that such females do exist and in sufficient numbers to prove that many more can be bred if the proper methods are carried out.

To the young man or woman who is dead in earnest, who is not afraid to work and to those who have the patience to wait for developments, here is an opportunity for you that you should not overlook. It is a work that is honorable and work that will bring you good returns for the money invested, and at the same time you are doing something for the betterment of our domestic animals and setting a good example for others to follow.

There are at this writing two absolutely reliable tests being made, one at Mountain Grove, Missouri, under the management of T. E. Quisenberry, Secretary of the Missouri State Poultry Association; the other at the Storrs, Connecticut, experiment station, under the management of Wm. F. Kirkpatrick.

There are also several such contests going on in Australia. Such contests have been in existence longer in Australia than in this country, but the contest at Mountain Grove, Missouri, is now in its second year, and it has demonstrated conclusively that to no one breed or variety must we look for best results, as no less than ten breeds have made phenomenal records and without great expense.

In fact, the housing, feed and care of these fowls in these egg-laying contests include the very simplest methods, and just such methods as can be used successfully on any ordinary farm. It has been proven conclusively, however, both in America and Australia that the best results come from the thoroughbred fowls, hens and males that have pedigree back of them and have been bred in line for heavy egg production.

Thus we say in buying foundation stock, the best is the cheapest, for you have something tangible on which to build, and the man or woman who can perfect a strain of egg-producers, that will give an average of eighty-five per cent. of females that will lay two hundred eggs or more in twelve months, will give you a foundation for a fortune, and this fortune is open to thousands, as there is practically no limit to the demand.

Good Food, Good Chickens

By Mrs. Zina Summers

I HAVE read so many theories about the poultry business that I have always supposed certain conditions were absolutely necessary to get eggs.

Last fall we moved to our farm in Wisconsin too late to prepare for winter. We had only one tiny building in which we must house all kinds of stock. There was no room for my hens, so I built a platform about two and one-half by eight feet over one end of the pig-pen, put two long boxes crosswise of this and two poles from box to box. These were nests and roosts. That and a space about four by four feet behind the cow was all the hen-house we had.

I had ten pullets of unnamable breeds, hatched after June 20, 1912. Every one had its comb frozen last winter, and their floor was hoed off only once when it was thawed enough to make that possible; their drinking-water froze solid in less than an hour nearly every day, and they had fresh water only twice a day.

The Hens Persisted in Laying

I got the first egg on Thanksgiving Day, and they have laid pretty regularly since. I did not keep a record until January 1st. In January I got seventy-seven, in February eighty-six, and the first fifteen days in March they laid ninety-nine. Three different days in March those ten hens laid nine eggs.

My Conclusions

I attribute my success to the care I have exercised in feeding. I have kept a hopper full of a dry mash composed of about two-thirds bran and one-third ground feed—half oats, half corn—on their floor. I fed moist bran alone, mornings, and gave warmed water. About two or three o'clock I gave them a feed composed of vegetables (potatoes, parings, carrots, turnips, onions and apples), any or all that I happened to have; and nearly every day one rabbit, put through a food-cutter. I have also given them ground oyster-shell.

Their space behind the cow I have kept covered with coal-ashes and cinders, and have used medicated nest-eggs. They haven't been bothered with lice, and they came out in the finest possible condition.

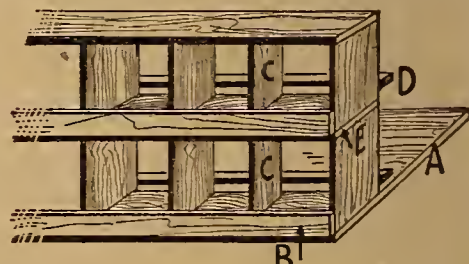
They had no dust-bath, no grit except the oyster-shell, cinders and ground bones of rabbits, no constant supply of drinking-water, no scratching-shed and no warm house. The only things they had in abundance were food and ventilation.

Easy-to-Clean Section Nests

By William C. Albright

THE sketch shows a plan for hens' nests which I find very easy to clean. Just lift each section off, and sweep the top of the section below. There is no bottom to clean. The top of the lower section serves as the bottom to the one above, but is not attached to it.

A is a platform thirty inches wide and as long as desired; B is a one-by-four-inch strip to hold the nest material; CC are boards one by twelve by thirteen inches,



which are partitions between nests; D is a one-by-four for hens to walk on to get in upper section; E is a one-by-twelve-inch board, the top of the first section.

The bottom section is suspended by wires so that it hangs about two feet from the floor, and the platform A is placed against the wall. A burlap curtain is hung over the front of the nests to darken them, but can be pushed aside when you wish to gather the eggs.

To Clean Eggshells

By Mrs. C. H. Clark

A DAMP cloth dipped in cream of tartar will entirely remove any stain that I have come across in the last ten years of shipping eggs. One-half minute's time and no injury to the egg.

Kafir-Corn Sprouts

By Mrs. B. C. Johnson

YOU are all familiar with sprouted oats, but here is something new in green food. The other day, after floating Kafir and maize seed for planting, the chaff and seed that floated were left in a bucket. Imagine my surprise on finding, a day or so later, long, juicy sprouts. When I threw them out the chickens and ducks made a dash for them and continued eating until all were gone.

The egg yield doubled, so I will feed sprouted corn, milo-maize and Kafir-corn to them in addition to the dry grains. The grass is green and abundant here, yet the fowls preferred the sprouted food.

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The FARMERS' LOBBY.

SEVERAL years ago a certain member of the House of Representatives, being a candidate for renomination, discovered very unexpectedly that there was a bitter opposition in his district. He hurried out home to look into the trouble. He was a Republican, and the district one of the most overwhelmingly Republican districts in the country. There was a sharp fight, and when it was over the congressman had been defeated. An insurgent Republican had been named against him. The congressman came back to Washington and was asked how it happened.

"The labor vote was all against me," he replied.

"But where's the labor vote in your district? Isn't it almost entirely a farming district?"

"Yes, it's a farming district, but there are a number of railroad towns, and the railroad men are highly organized. So are the artisans of various classes in the towns. The railroad people started the fight on me, and the rest of the union people took it up."

"What was there in your record that made them so hostile?"

"Why, you see," explained the congressman with the utmost frankness, "I am a member of the Committee on Labor. Somebody has to go on committees like that, and I did. It wasn't supposed that in a district like mine it would hurt me seriously. I have opposed such measures as anti-injunction, eight-hour day, employers' liability, and the like, that the labor organizations want passed. The committee has refused to report them, and so they couldn't get consideration. They got after me, and turned up more strength than anybody would have suspected them of controlling."

"Why did you take the position of opposing these labor measures?"

"Somebody must do the uncomfortable business of keeping that kind of legislation back," he replied with a shrug. "I could have a place on the Public Buildings Committee and get a lot of appropriations for my district if I would also go on Labor and help keep back the labor measures that were not wanted. It seems to me, it was a good thing for the district; I have got it a lot of fine public buildings, and expected they would be appreciated. But the towns that got them did no more for me when it came to the fight than those that didn't."

"The towns that got the buildings forgot your services, but the labor people remembered that you had opposed their bills?"

"That's it; and so I was beaten; that's all."

That is, as nearly as I can now recall, the substance of a conversation that came back to me vividly when the recent revelations about lobby activities in Congress were brought out, first by newspaper publication and then by investigation of a legislative committee. The defeated congressman was a Republican of the old school. He had no particular convictions about the labor legislation he had been helping to smother; it merely occurred to him that that sort of doings was a good deal of a nuisance. The country had got along all right without child-labor laws, anti-injunction statutes, eight-hour measures, and the like, for a long time, and he didn't see why he should worry about such things. Besides, the people who were powerful enough to give him a highly desirable assignment to the Public Buildings pork-barrel committee were anxious to have him help them kill the labor measures. He could get his slice of pork in exchange for that help. It seemed safe to make the dicker, and he made it.

JUST about that same time another congressman, from another State, having been several years a member of the Public Buildings Committee, was removed from it. The speaker at that time named the committees. This congressman had been a critic of the speaker and the rules. He had supported labor and other legislation that the "organization" opposed, and had made himself generally undesirable. He, also, had used his place on the Public Buildings Committee to get just as many extravagant post-office appropriations for his district as possible; and he had been very successful. He, likewise, was proud of the success.

In these two incidents is given a pretty good idea of how the business has been done. The power to name the committees was the power to control legislation, particularly when it was double-teamed with the vast authority that the old rules gave the speaker over the processes of legislation on the floor. All this has been preached time and again, in season and out, by people who knew "the game" here in Washington.

Just incidentally it is interesting to note here that the member who was paid in public building pork for helping kill labor bills is now a country lawyer in his

home town, while the member who was removed from the pork committee as a punishment is now a member of the Senate! He wouldn't pay for his pork in the coin that was demanded of him, and so he lost it.

When Martin Mulhall, long-time lobbyist for the National Association of Manufacturers, made his exposé of the purposes and methods of that body, it was no particular surprise to most people in Washington. That organization is not to be set down as an

done, don't you know, without liberal spending; and before they know it, men whose better judgment and instincts would revolt at it, are let into the notion that vital interests of theirs really demand that they play the game as it's played by the big 'uns.

When the session is over the lobbyist mops his perspiring brow and goes back to report. Astute person! He is pleased to announce that his forecast, made at the beginning of the session, was almost exactly accurate!

Felt sure all along that he couldn't be mistaken, for he doesn't mind admitting that the cards were all laid on the table at a little session he had with the President, the speaker, the chairman of the national committee and the floor leaders of both parties! Everything that he promised to kill is dead; everything he promised to pass is passed! He feels worn out and wants to run over to Yurup for a rest!

That's the way with most of the lobbying; that is, the lobbying of the kind that such men as Mulhall and

Dave Lamar talk and write "confidential" letters about. Not all of it of course. There are men in Congress—there used to be a good many more—who make terms with these manipulators. Mulhall proved that he had furnished large sums of money to public men who helped him in his legislative work. Commonly it was in the shape of contributions to campaign funds. That's the easy, effective, unctuous way to tickle the public man's palm with gold.

But the contribution business is all wrong, and it is perfectly certain that before long it will accumulate a crimp that will make it less available as a palliation for the abuses practised in its name. Why should it be perfectly proper for a manufacturer, or a builder of battleships under government contracts, or a railroad that doesn't want to be regulated, to contribute liberally to the national committee of either political party—or more likely both of them—and yet perfectly wrong and heinous for the members of the National Association of Manufacturers to contribute to help elect the men they favor, or defeat the men they don't favor? The distinction is too fine. So long as national committees go out dragooning the public for funds it will be reasonable for the individual candidate to take such contributions as he can get. The only way to stop the great and grave evils of the system is to control the whole business of campaign contributions.

How to do it? Senator Clapp of Minnesota has a bill pending, which would prohibit any member of Congress from serving on any political committee, or soliciting campaign funds; likewise, which would make it unlawful to raise funds in one district for use in another. Think what it would mean if political funds could not be shipped about in interstate commerce! Most of the money that finances political campaigns is raised right in New York City.

GENTLE reader, would you contribute \$10 to help re-elect your member of Congress? That's the acid test to put on the proposition. Campaign funds must come from somewhere; there's no way to get along without them. If the people chip in the congressman will belong to them. If the interests do the chipping—well, the people may owe the congressman, but my money is on the interests.

I have observed several national campaigns from the outside—if I said "inside" I might be suspected of running the same sort of lobby that Mulhall and Lamar have been charged with conducting—and it has been strongly impressed on me that in some fashion or other arrangement should be made to lift the business of political financing out of the rut. In England if you get elected to Parliament, and if thereafter it can be proved that you or anybody else spent a single shilling to advance your cause—that is, that anybody "bought the drinks" for you or "set up the cigars"—the election is annulled. No matter whether there was intent or thought of corruption, the spending of money in such fashion doesn't go. Perhaps that's a bit too strong for American tastes, but certainly we ought to stop this use of money to such an extent that there is now a uniform record, from 1860 down, that the party with the biggest campaign fund in a given election has always won!

How and Why the Dollar-Sign Persuades Congressmen to do Strange Things—By Judson C. Welliver

YOUR professional lobbyist, who is paid to "grease the wheels" in Washington, is apt to be a fourflusher. He'll have to buy some men, feed others, contribute to campaign funds for more, and occasionally chase a party over to New York for a toot. He'll not be able exactly to itemize the bills; you know that sort of thing doesn't look well on paper, better not be written down; but if the "organization" will start him with, say, \$10,000 salary and a \$10,000 expense account, and pony up more money as he draws for it, he allows he can put the thing across.

aggregation of men all bad. Like most other organizations of its kind, its existence was largely on paper. It had some officers and an executive board; the officers did most of the business, following, of course, a general policy that was presumed to represent the organization, but not deeming it either necessary or desirable to take all the members into confidence as to exact methods. It wouldn't have been safe, for without doubt the vast majority of them would have repudiated such methods as Mulhall employed if they had known what he was doing.

THE Mulhall confession in effect declares that the manufacturers' association was fighting the labor unions and trying to defeat all the legislation they favored, while on the other hand it was working to get a tariff commission established. Right here there is a contradiction that to the time of writing has not been explained. The men whom Mulhall boasts of using, as his allies, to kill the labor measures—men like Littlefield, Jenkins, Canuon, Watson, Sherman and their associates in the old House organization—were also the men chiefly active in opposing creation of the tariff commission. Mulhall, on his own representation, was working with one crowd to kill the unions, and with the mortal enemies of that crowd to get the tariff commission! The men who took the lead in favor of the labor legislation were such as Beveridge, Bristow, Cummins, Borah, Norris and the rest of the insurgents and liberals, Republicans and Democrats alike. These same men were also the leaders in favor of creating a tariff commission.

Your professional lobbyist, who is paid to "grease the wheels" in Washington, is apt to be a professional braggart and fourflusher. He sizes up the situation with regard to legislation early in a session and then goes back to his employers and reports somewhat thus:

"The speaker, I learn from one of his closest friends, is very much opposed to anti-injunction legislation." Everybody in Washington knows that too; but Mr. Lobbyist magnifies his importance by alleging that his information is from the inside, mysteriously secured and of great value.

"Further," he goes on, "the judiciary committee can with proper effort be prevented from reporting any such legislation. I have gone over it carefully with every member of the committee. They stand thus."

Here Mr. Lobbyist presents a list, in a mysterious note-book, with hieroglyphic marks opposite the names, showing how the committee stands. Now, the newest correspondent in the press gallery could have made up that list for him just as accurately.

With due impressiveness and solemnity Mr. Lobbyist goes through this performance of "tipping off" to his employers the strict inside, next-to-the-skin facts about what's going to be done. He employs an effective stage whisper, turns the light low and uses all the correct melodramatic effects, never forgetting duly to brag about his personal influence with the big men. When he is done he explains that, of course, to do these things takes a lot of money and smooth work.

The organization buys about 999 parts brick and one part gilded outside; but it bites. The bunco-steerer makes them believe that that sort of thing can't be

IN FRONTENAC CAVE

As Told by One Who Was There, and Edited by Hayden Carruth

Author of "Track's End," "The Voyage of the Rattletrap," Etc.

Illustrated by Edward L. Chase

Synopsis of Preceding Chapters

Judson Pitcher, about eighteen years old, comes to Hawk's Landing, on the Mississippi River in Minnesota. Here he meets Captain Nathan Archway and his daughter Amy and his son Robert. Robert goes with Judson to the Lumberman's Bank, and while there it is attacked by the notorious gang of robbers led by Isaac Liverpool. Robert is shot and killed, and the gang escape to their hiding-place in Frontenac Cave. It is impossible to penetrate this cave by the only entrance known, since the robbers have closed it up. Captain Archway conceives a plan to get into it through a small sink-hole on the prairie a number of miles back from the Zumbro River. He and Judson go there in the night and lower themselves with a long rope. While they are exploring the upper part of the cave a thunder-shower comes up, and the flood carries the rope down the sink-hole and fills the small opening a hundred or more feet above with brush and soil. Before leaving the Captain's home at Hawk's Landing Judson finds, as he reluctantly admits, that he is very much interested in Amy Archway. When the Captain and Judson discover there is no hope of getting out of the cave where they got in, they begin to search for another outlet, and keep it up for six days. By this time their food is gone and they are very weak. Since awakening on their first morning in the cave they have been greatly puzzled by a strange beating or throbbing sound which is especially noticeable in the Bedroom near Sink-Hole Dome. Finally by using their gun-barrel as a crowbar they move a loose stone at the bottom of a small tunnel and get down into the main part of the cave. They find the name of Gil Dauphin, one of the Liverpool gang, marked with candle-smoke on some of the lower ceilings. Looking down a pit, they see a smoldering camp-fire, and the Captain starts back to get their rope, but through haste and weakness falls down another pit into a stream of water. Jud goes after the rope, which they had left at Sink-Hole Dome, but is astonished to find it gone, though he had seen it a few hours before. He hurries back, with their only candle down to the last inch, and at the pit where the Captain disappeared is still more astonished to find the rope he had gone after. Judson goes down the pit with the aid of the rope so mysteriously brought there and finds the Captain alive and with some cooked fish which he has found by the fire. They eat it, and later get fish from another river, which they cook over a fire made of small sticks evidently washed into the cave by freshets. Having no more candles, they use sticks soaked in fish-oil. They continue to search for several days, but find no way out of the cave. On one of their exploring trips Jud stumbles over a man who is sleeping on the ground. He falls, and his torch is extinguished. The man springs up and grapples with the Captain in the dark.

Part IV.

Dauphin tells his story, and gets some sharp truths from the Captain; with the passage of the Gun-Barrel and of the Chimney, and the making of our famous pole; then the robber and I hear the beating of the unknown sound, and we all run plump into those who are no friends of any of us.

FOR once in my life I thought of the right thing first, and that was to get a light if I could, knowing the man with whom the Captain was struggling in the dark, ten yards from the mouth of that pit, probably knew the ground much better than did he, and that if a light would help either it would help the Captain.

I still had one match, no more, in my bottle, and I made haste to get it out, though my hands were trembling like a wild poplar-leaf. Then I crawled away a little so that the men might not trample over me in their struggle, and struck the match on a little stalactite which I had in my pocket. The match went, but the black end of the torch-stick would not, the oil being so much burned out. I was that stupid that I let it burn almost to my fingers before I thought to turn the stick around and try the other end. When I did so it caught fast enough, and I stuck the black end in the sand and leaped up to do what I could to help the Captain. But as the light flashed upon them, gripping there at each other not six feet from the pit-brink, the man let go and cried:

"Hold on there! Who be you? I thought you was Ike Liverpool!"

They stood there glaring at each other, the man with his thin face looking out of his matted hair and torn, scraggy beard, his fingers so crooked and claw-like that you might have thought he had been hooking himself up to the roof like the bats, and his clothes most ragged and dirty.

"I don't know as it's any of your business who I am," answered the Captain. "I'm an honest man for one thing, which is more than you are," and I thought he was not far from ready to fall to again and see who should go down the pit.

"I didn't mean no offense, Cap'n—that's what I didn't," broke out the man. "I know you now—you're Cap'n Archway, which used to be master of the *Belle of Prairie du Chien*. I know you, Cap'n. When Gil Dauphin run on the river he never meant no offense to the Cap'n, never; nor the mate, neither."

"You knew it wouldn't be well for you if you did. Why didn't you keep on leading an honest life?" The

Captain sat down on a stone by the pillar while the man stood before him and I held the torch at one side.

"Bad luck, Cap'n; bad luck. I couldn't with my luck."

"You couldn't with your appetite for whisky, you mean."

"Cap'n," said the man, glancing at me and then edging a step nearer. "Cap'n, Gil Dauphin means well by you and by everybody, barring Ike Liverpool. Cap'n, it's cold in this here cave, and I ain't uone too well and hearty. You ain't got a drop about you 'at you could give a feller, I s'pose, now, Cap'n?"

"No, I haven't; and if I had I shouldn't give it to you. Where's the rest of the gaug?"

He drew a long breath, as if deeply disappointed and said: "Over at the Fort, I reckon."

"Why aren't you there?"

"Cap'n," he said, sinking down on his knees in the sand, "you know that Ike Liverpool. You—"

"No, I don't know him, and I don't want to."

"He's a mean man, that Ike Liverpool is—that's what he is. He's—"

"Did you ever know any good men in his gang?"

"Cap'n, we was hard nuts—I don't deny it—I uever did deny it. But Ike Liverpool was meaner'n the rest of us—a little. He throwed me dowu the pit, that's what Ike Liverpool done."

"Why?"

"That's it, Cap'n; why? 'Cause I stood up for my rights, that's why. He wouldn't divide fair, that's what he wouldn't. He bullyragged the rest of 'em, but he couldn't come it on old Gil Dauphin. Old Gil Dauphin says to him: 'Give me my share!' and then he grabbed me, and 'fore I saw his game he throwed me down the pit. His game was to kill me, that's what his game was, Cap'n. But I was tough, and I'm alive yet, and if you'd been Ike Liverpool, as I 'lowed you was, you'd 'a' gone down a pit even if I'd 'a' gone too."

"Did you quarrel over the Hawk's Landing bank robbery?" asked the Captain.

"The Hawk's—never heard of it, Cap'n. I've been down here a month. What is it?" he asked eagerly.

"Nothing, except that they robbed the Lumberman's Bank and got a large sum," answered the Captain, and

the man chuckled; but I thought his laughter was about as cheerful as a bat's squeaking.

"Isn't there any way to get out of this part of the cave?"

"Not a way, Cap'n."

"And the pit is too high to get up?"

"Too high to get up, Cap'n—though you can come down."

"Where is it?"

"First you get down here and go over there till you come to a straight tunnel runing down-hill a little and—"

"It comes out in the bottom of a dome, doesn't it?" broke in the Captain.

"Yes, that's it. There I was throwed down seventy-five feet if I was an inch, so I was, Cap'n."

"But that dome is higher than that, as I believe. You couldn't have been throwed down it."

"I were, Cap'n. There's a tunnel comes in part way up, and they throwed me from that. It may be a hundred feet. When I come down I didn't stop to measure it."

"Well, the three of us might be able to get up that pit somehow," said the Captain thoughtfully.

"Not without a berloon, Cap'n," put in Dauphin.

"You don't know what we can do," answered the Captain, rather impatiently. "If you fell dowu it without having your neck broken it can't be so extremely high."

"My neck was broke, Cap'n. It was—"

"Come, I can't listen to that kind of talk. When your neck is broken it will be when you are hanged. We'll go and have a look at that pit," and the Captain arose. "You know the way out beyond there, do you?"

"Just like a book. There's two ways out, but they're both beyond the Fort. The Fort's where Ike and the boys is. Cap'n, if I ever get him by the throat I'll—"

"No matter about that. There's a way to get around the Fort, I suppose?"

"That's what there ain't, Cap'n. No way at all. It's a big room, and there they set with their fire and their guns and their big jugs of liquor, Cap'n—their big, elegant jugs of liquor, Cap'n."

"Come, we'll go to the pit," said Captain Archway.

"All right—you're the cap'n," answered Dauphin.

"Go down my rope or 'round through the Rat-Hole?"

"Your rope? Our rope you mean."

"Was it your'n, Cap'n? I found it and just borrowed it to save going through the Rat-Hole. You know the Rat-Hole, Cap'n?"

"I think so. We call it the Pocket-Gopher Hole."

"That's better. I couldn't thiuk of nothing except Rat-Hole. Bnt I ain't used it much, nor the rope, neither, lately, 'cause the boys have been down in that part of the cave, and I've been afraid to show myself. I seen their tracks and their fire, and I've only gone down when I got starved out and had to get some fish or wood. I used to keep my fire down there to save bringing the stuff up, but I've been afeared to lately. They got up here once, too, I reckon, 'cause somebody pushed my rope over."

"I think Jud did that," said the Captain. "And I guess the tracks and fire you saw were ours."

"Is that a fact, Cap'n? Have you been in here so long? And see here, Cap'n, what's this about your getting out? Why can't you get out where you got in? And, 'thout no offense, Cap'n, what you doing in this here cave, anyhow?"

"We have business here," answered the Captain very quietly. "And we prefer to get out another way if we can. We'll have a look at that pit now. Get the rope."

The man did, bringing it from a hole in the rock and tying it around the pillar. The Captain pushed the coil over the edge and let himself down, while Dauphin and I followed.

Dauphin then led the way. After going a considerable distance, we followed him down the long, straight, round tunnel, which we had before named the Gun-Barrel, turned a sharp corner and were at the pit. This seemed forty or fifty feet across, and so high that we could get no notion of the top. But up on one side at the height of about twenty-five feet, as the Captain guessed it, there was a big hole which Dauphin told us was the end of a tunnel leading to the Fort and the rest of the cave. He said that, going up from the edge which we could see, the tunnel was almost as steep as the roof of a house for fifteen or twenty feet, after which it went slowly down-hill. We were careful not to make any noise near here for fear some of the outlaws might be lurking about above. Dauphin said there was a rope tied to a sharp corner of a rock which the men used when they wanted to come down.

We had no sooner got back through the Gun-Barrel than Dauphin broke out in a string of abuse of Isaac Liverpool, but the Captain refused to listen to it at all, telling him that he was no better than Liverpool, and that he would have pushed his chief into the pit just as gladly as Liverpool threw him in if he had had the chance. This Dauphin seemed to take as a great compliment, and he chuckled over it in a most shameless way.

[CONTINUED ON PAGE 19]



The two men on the ground clapped their hands on their revolvers

I could see that he was relieved to find that Dauphin had not been along on that occasion.

"They did, did they? I ought to waited 'fore I stood up for my rights. I was too fast—just my luck. Told you my luck was always ag'in me. I heard talk of doing it, but I got too fast about my old rights, and was throwed down the pit."

"Well, why don't you go back?"

"Can't, Cap'n. There's only one way to get between the part of the cave where they are and this, and that's up and down that there pit where they throwed me. It's fifty feet, and you can't go up it 'thout a rope, though you can come down—that's what you can!" and



The Power of Personality

By Alice McFeely

NO ONE of us can understand the mysterious thing we call influence. There have been meetings of only a moment which have left impressions for life. We read of the healing of the woman who only touched the hem of Christ's garment, and again, when the people pressed around Him trying to touch Him, how virtue went out from Him and healed them all. Of course no one has such power as He had, but each has an influence for good or evil on every one with whom he comes in contact. We are all the time either helping or hindering, perhaps unconsciously, those about us.

No one can tell how far this unconscious influence reaches. Often those whom we do not know are watching us to see how we live, where we stand in regard to public questions of right or wrong, and whether our life and our profession correspond, and often are shaping their lives by ours.

He toiled on the street for his daily bread, Jostled and pushed by the mighty throng. "No one has time to watch," he said. "Whether I choose the right or wrong. No one can be misled."

He chose the wrong and thought no one cared; But a child lost that day his ideal of strength.

A cynic sneered at a soul ensnared. A young man halted, faltered, at length Followed him into the sin he dared.

When one discovers that he has formed or is forming a companionship whose influence cannot but be hurtful to him, it must instantly be given up. A rabbit's foot was caught in a steel trap, and, with a bravery we cannot but admire, it gnawed off its leg with its own teeth, setting itself free. Who will say it was not wiser to thus escape death than to have kept the foot and died?

A good and true character also has its influence. Good companions are a blessing and a benediction. You will recall those words of Longfellow:

As ships that pass in the night, and speak one another in passing,
Only a signal shown and a distant voice in the darkness,
So on the ocean of life we pass and speak one another,
Only a look and a voice, then darkness again and a silence.

And how often the look and the voice go with us through life and are woven into our golden yesterdays.

There is a wonderful restraining power over us in the life of one we love. We dare not do wrong in the presence of a pure, gentle friend. Words, thoughts, kindly deeds, the power of example, the inspiration of noble things, drop out of the heaven of pure friendship into the depths of the heart, and, falling, are folded there and become beautiful gems and holy adornments in the life. Who can tell the power of a close and long-continued friendship, running through happy years, sharing the deepest experiences, heart and heart knit together, life and life woven as it were into one web?

What is the best a friend can be
To any soul, to you or me?
Not only shelter, comfort, rest—
Inmost refreshment unexpressed;
Not only a beloved guide
To thread life's labyrinth at our side,
Or with love's torch lead on before;
Though these be much, there yet is more.

Can friend lose friend? Believe it not!
The tissue whereof life is wrought,
Weaving the separate into one,
Nor end hath, nor beginning; spun
From subtle threads of destiny,
Finer than thought of man can see,
God takes not back His gifts divine,
While thy soul lives thy friend is thine.

The Ministry of Mirth

By John Clark Hill

REAL religion is full of joy and gladness. The mission of the Man of Nazareth was to bring joy and good cheer into a sad world. There was very abundant provision made by Moses for feasts and festivities. One of the Hebrew words used for these implied an occasion of some dignified formality, the other comes from a word that signifies a dance. In many of their festivities there was much joyous mirth. At one of these feasts it was the custom for everyone, who would, to get out his ram's horn trumpet and blow it with all his might. We know what a joyously boisterous time a lot of jolly college boys can

have with their tin horns in our days. This seems to have been a very ancient and approved method of expressing jubilant mirth.

The most demonstrative of these festivals lasted for seven days, and the instructions for the celebration tell us that during the feast the people were to be "altogether joyful." It is clear that these things were intended to help the people understand that religion did not exclude joyous merrymaking; indeed, these things were a necessary part of their religion. These things confirm the fact that there is a Ministry of Mirth, and that if we leave it out in our religion we miss one of the essential things.

The old Scotch version of the Psalms gave prominence to this. The first verses of the one hundredth Psalm read:

All people that on earth do dwell,
Sing to the Lord with cheerful voice,
Him serve with mirth, His praise foretell;
Come ye before Him and rejoice.

When the English Puritans undertook to revise this version they thought that "mirth" was utterly out of place here, and deliberately changed that line into: "Him serve with *fear*." Of course reverential fear has a place in religion, but it had no place in this Psalm. It is a song of joyous, mirthful religion. We can write it down as a fundamental principle that whatever tends to repress innocent mirth is really a serious hindrance to growth in the best type of character.

Christ was a very human man. He entered into and encouraged the gaieties of life. Sir Edwin Arnold, in "The Light of Asia," pictures Mary of Magdala telling a Buddhist about Jesus, and she says that:

"... never once with us
Scorned He the meats and drinks, sights and delights
Which flesh doth ask: Your heavenly Father knows
Ye need these things, and oft-times sat
At wedding festivals and banquet board."

The wedding at Cana is a good example. It is noteworthy that John puts the story of this merrymaking near the beginning of his Gospel, just as soon as Christ had enlisted a few followers, John introduces us to the joyous hilarity of a wedding. There can be no question but that the Teacher eagerly mingled with the merry throng, light in his eyes and a smile on his lips.

When the supplies ran short He performed His very first miracle by turning water into wine so as to relieve the embarrassed host and prevent the sudden ceasing of the merriment.

That scene means much to us to-day. Its real meaning has been ignored. Christ's presence at that wedding really struck the key-note of a practical religion: here He gave an example for all His followers.

One of the old prophets wrote, "A merry heart is a good medicine." Making a friend merry with a hearty laugh is often the best thing we can do for him. A well-known clergyman of wide experience says: "The truth is, seriously, the success of a church is the result of the smiles of its members, the beaming faces of its ushers, the joyousness of its people and the gladsome air of everything. Good humor and a mirthful, joyous, happy manner tell far more, as practical religious forces, than we have been accustomed to believe."

Whatever tends to destroy good humor should be regarded as a crime against humanity. In Germany, where there is so much outspoken dissatisfaction with the arbitrary acts of the rulers, they have very stringent laws against *lèse-majesté*; that is, anything said or done that can be interpreted as injurious to their sovereign. The crime of ill-humor, the crime that slaughters good cheer, that strangles joy, that murders mirth, is *lèse humanité*, and everyone guilty of it should be made so heartily ashamed of his evil ways that he will, on conviction, forever forswear the past evil of his frowns and ill-nature. Those who persist in this wretched crime against humanity, and will not repent, sooner or later receive the natural penalty—the punishment suits the crime. They are left to themselves. They become misanthropic. The disposition of the heart soon tells on the face, and the chronic frown or snarl becomes a fixed expression.

Henry Van Dyke, in his great-hearted way, says: "It is the part of wisdom to spend little time on the things that vex and anger you, and much of your time upon the things that bring you quietness and confidence and good cheer."



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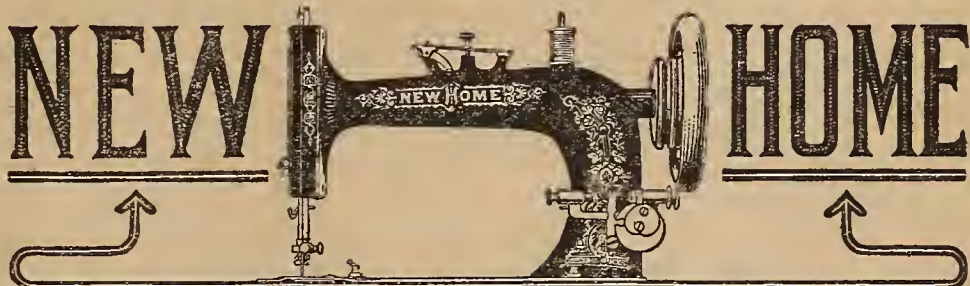
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An Infant's Irish Crochet Cap

By Evaline Holbrook

FOR dress-up wear for the baby during the late summer and fall months there is nothing prettier than a cap of Irish crochet. Thin and cool of itself, it may be made quite warm enough for cold weather if it is lined with padded silk.

In the pattern illustrated two simple motifs are combined to produce a cap that is extremely lovely and not at all difficult to make. No. 60 crochet-cotton and a fine steel crochet-hook are used, and the work is begun at the center of the crown with seven roses, worked as follows: Chain five, and join in a ring. Chain five, one double crochet in the first stitch of the ring, *chain two, one double crochet in the next stitch, and repeat from * until five double crochets are made. Chain two, catch in the third stitch of the starting chain of the round.

Second Round—One single crochet and five double crochets in each space of first round.

Third Round—One slip stitch in each double crochet of first round, four chain between, carried behind the petals.

Fourth Round—One single crochet and eleven double crochets in each space of third round. Join, and fasten off. Select one rose as the center, and join the others to it, joining half of two adjacent petals of the center rose to half of two adjacent petals on one of the other roses. Then join each rose to the adjacent roses on two half-petals—half of the petals partly joined to the center rose, and half of the petals next to them. The outer edge of the medallion will be formed of two whole petals and two half-petals of each rose.

Work around the medallion with the picot filling, as follows: Catch the thread in the stitch between two roses. Chain seven, catch in the fifth chain from the needle for a picot, chain two, catch in the sixth chain after half-petal of rose, chain seven and catch for a picot, chain eight and catch for a picot, chain two, catch in the center of petal. Make a loop with two picots as before, and catch in the end of same petal; make two loops on

the next petal, and on the half-petal make a loop with one picot, like the first loop of the round. Crochet four loops in this way on each rose, and make four rounds more of picot loops, catching in the center of each large loop of preceding round. Treat each two small loops of the first round as one large loop, catching down in the stitch between the small loops. There will be thirty loops in the round.

Sixth Round—Make one loop with two picots as usual. Chain eight, catch in the center of the next loop, turn, eight single crochets over the eight-chain. Turn, chain three, one double crochet in first single crochet, * chain one, one double crochet in next single crochet, and repeat from * until seven double crochets are made. Chain three, catch in final single crochet. Make a loop with two picots as usual, a shell, a loop, and so on till there are fifteen shells in the round.

Seventh Round—Put three double crochets in each space in each shell or preceding round.

Eighth Round—Make one single crochet in the space between shells. *Chain eight, one single crochet in the eighth stitch of shell, chain eight, one single crochet in sixteenth stitch of shell, chain eight, one single crochet in space between shells. Repeat from * all around.

Ninth Round—In each chain loop of eighth round make a shell of one single crochet, nine double crochets, one single crochet. Make four rounds of picot loops, catching the loops of the first round in the centers of scallops of ninth round.

Temporarily lay the work aside, prepare fifteen roses for the next round, working as instructed for the roses of the center crown. To every third loop of the round last made catch one of the roses, doing so in the center of the final petal of the rose. Resume work on the round, crocheting as follows: Catch in the center of the first loop of the round, chain eight, catch in the center of the next loop, turn, eight single crochets in the loop, turn, chain three, one double crochet in each single crochet. Catch in the center of the adjacent rose-petal, turn, one single crochet in each double

crochet, turn, chain three, three double crochets in each single crochet. Work two single crochets in the center of the next petal of rose, turn, *chain six, one single crochet in the sixth stitch along preceding row of shell, and repeat from * to the end, when four loops will have

been made. Turn, and in each loop work one single crochet, seven double crochets and one single crochet. Make three loops with two picots each, catching in the center of each petal around the rose. Then make another loop with two picots, and catch in the loop of preceding round to which the rose was caught. Repeat from the beginning of the round to the end, and catch the end of the third and fifth rows of each shell to the center of the picot loops on the preceding rose. Hereafter the work is done in rows, for the front of the hood.

First Row—Work in the usual picot loops, catching in the center of each scallop over shells and in each of the picot loops between the shells, until row has been worked over fourteen shells and thirteen roses. On this row work five rows more of picot loops, narrowing one loop at end of each row.

Seventh Row—Make two loops as usual along the row. *Chain eight, catch in the center of next loop, turn, nine single crochets in the loop, turn, chain two, one double crochet in each single crochet excepting the last, chain two, one single crochet in final single crochet. Chain seven and catch for a picot, chain two, catch in the center of next loop of preceding row, make a loop with two picots as usual, then make a loop with one picot, catching it in the center of next loop of preceding row. Repeat from * to end.

Eighth Row—Make one single crochet in each double crochet of each shell, working one chain between the single crochets. Between the shells make a loop with one picot, catching in the center of the loop with two picots in preceding row, make another loop with one picot, and work the shell as instructed. Then make three rows more on the shells, following the directions given for the shells of the crown. After the final row

is done make six rows of picot loops.

Prepare nine roses for the next row, catching the final two petals to every fourth and fifth loop along row last made. Now work the eighteenth row as follows: Work in picot loops until the center of the first loop to which rose is fastened is reached. Turn, work picot loops over the loops just made, turn, again work picot loops to the rose and around the rose, catching in the center of each petal, until the loop to which the rose is fastened has been caught into. Work in this way across the row, catching the second and third short rows between the roses to the rose preceding them. When the row is finished work four rows of picot loops, carrying the final two all around the hood. Now work the pointed edge as follows: Make one double crochet in center of each loop of preceding round, and between double crochets chain enough to keep work flat.

Second Round—Fill the first space with single crochet. Chain five and catch for a picot, and do this until three and one-half spaces have been filled. Turn, chain eight, catch in the center of space last worked into, and work a loop in the same way over each of the other spaces. Turn, in the first loop work two single crochets, picot, seven single crochets; in the next loop work one single crochet, picot, seven single crochets, and in the next loop work four single crochets. Turn, chain eight, catch in the center of loop last filled, chain eight, catch in the center of next loop. Turn, in the loop next to needle work two single crochets, picot, seven single crochets, and in the next loop four single crochets. Turn, chain ten, catch in the center of loop last filled, turn, in the new loop work four single crochets, picot, two single crochets, picot, two single crochets, picot, four single crochets, and in each of the incompleting loops three single crochets, picot, two single crochets. Fill the partly filled space of preceding row, make a picot after it, and repeat from the beginning to the end of the round. There join and fasten off.



Side view of Irish crochet cap

For the fall, there is nothing prettier than a cap of Irish crochet. Thin and cool in itself, it may be made quite warm enough for cold weather if it is lined with padded silk.



Detail of crown, showing medallion



Detail of side, showing shell

What Shall We do with Our Summer Visitors?—By Alice M. Ashton

HUNDREDS of women dwelling in charming but inexpensive cottages by sea or mountainside and on busy farms have grown to look forward with dread to the summer exodus from the city. There is no question about it, summer visiting carries with it a license never dreamed of by the winter visitor. And every year the cry of protest goes up from perplexed hostesses: "If only some one would find a remedy! If only some one would mark a definite boundary between hospitality and imposition!"

The hostess in the home where servants are unknown or incompetent is the one who suffers. The little cottage often represents unbelievable denials and economies endured in order to have a little nook in a dearly loved spot where the family may rest from worrying cares. How can we, cozily established in such a home, deny the warm-hearted invitation to those who possess no such refuge? And what are we going to do when our guest placidly ignores the carefully specified "week" of the invitation?

Blame the guest? But it is vacation, and the world consists only of mornings like those of creation, noons that drift in lazy, droning hours, and sunsets of surpassing peace and beauty. The visitor forgets the tired little woman who toils in the stuffy kitchen by day and figures over distracting housekeeping bills by night. One woman who had anticipated

preserving a quantity of fruit during a vacation at an old farmhouse found her expenses so increased by guests that her own family had to do without the much talked of delicacies. Too frequently an overstrained hospitality results in bills that have to be paid by unreasonable self-denial, and even in serious illness for the overtaxed hostess.

Hospitality is a beautiful thing, and there is none too much of it, at best. But there is a virtue above generosity, and that is justice. Every woman should consider it a duty to be just to herself and to her family.

A struggling little artist who was heroically endeavoring to earn a living and give her invalid husband a chance to regain health rented a tiny cottage on a beautiful lake, and moved in with an inexpensive and incompetent little maid to do their light housekeeping. But friends came, and found the place delightful. The mistress had to abandon her work to augment the unskilled efforts of the maid, and autumn found her nervous and discouraged. After a difficult winter she went back to the cottage, but she did not hire the maid; instead, she "lightened" the simple housekeeping to even a greater extent.

When the guests arrived she explained cheerfully that, as there was no maid and she could not spare much time from her work, she knew they would not object to helping with the housekeeping.

Having supplied the larder with a reasonable amount of "raw material," she resolutely shut herself up to her painting. Before this emergency the guests disappeared as mist before the sun!

A farmer's wife whose home seemed the gathering-place for a number of relatives and friends every summer felt that she could not endure the added burden another season. Instead of hiring the cheap "girl" upon whom she usually depended, she sent the family laundry to a neighbor woman, and undertook the work alone. When the guests arrived they were given the choice of sending out their laundry at their own expense or of doing it themselves; hitherto it had "gone in with the rest," and too many country hostesses know to their sorrow what that means.

Since there was no maid, they had to care for their own rooms and look after their children. When they asked for ice-cream or some special country cookery in which they delighted, the hostess always answered pleasantly: "To be sure, I will make it right away, if you will do—" whatever happened to need attention at the moment. This was vastly different from the care-free existence they had heretofore experienced on the farm, and resulted in some of them returning to the city. The sincere ones—and there are always dear and sincere friends among the summer throng—were only too glad to assist with the burden,

and both they and the little housemother spent a really delightful time together.

A busy country woman had entertained a city cousin and her entire family for many summers. At last she found herself able to accept an invitation for a week in the city. Everything possible was done for her comfort and pleasure, and she had really a delightful visit. But when the week had expired she for some reason wished to remain a day or two longer. To her amazement she perceived that she had overstayed her welcome!

When school had closed the following spring the city cousin wrote asking if it would be convenient for little Laura to come on ahead of the others, as she seemed very much used up by the last term's work. Once the country cousin would have received her regardless of inconvenience. Now, however, she wrote kindly and sincerely that she could not possibly undertake the care of another child with all that it involved, but that she should be very glad indeed if they could all spend the last week of August with her. And this proved the most comfortable summer the little country woman had spent in years.

This does not mean a stinting of real hospitality, or the cultivation of selfishness or unkindness; but it does mean that, in the majority of instances, an honest, common-sense stand will solve the problem of the summer visitor.

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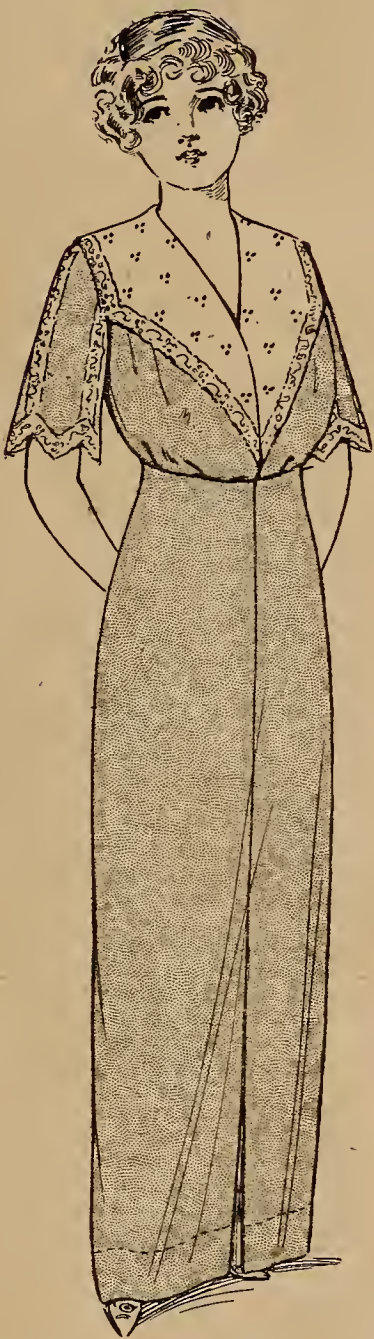
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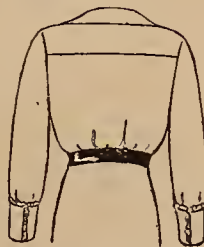
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SEE
"THE FAT LADY" CIRCUS "WILD MAN OF BORNEO"



How Mandy Saw the Circus

By Flora Charlotte Finley

THERE were flaming posters on all the board fences in Pottstown, and in front of each fence was an enthusiastic crowd of small boys, pointing out to one another the manifold wonders advertised to be seen only in "The Mammoth Three-Ring Circus and Hippodrome—The Greatest Show on Earth."

In a cabin a little on the outskirts of the town lived the Judson family, consisting of "Pa and Ma Judson," as they were familiarly known, and two children, Mandy and Bud. Mandy, a big overgrown girl of fifteen, and Bud, who, as he expressed it, was "goin' on thirteen," were among the most ardent admirers of the show-bills.

"I'm goin'," declared Bud, as he and Mandy tore themselves away from the last fascinating fence between their house and town, two days before the circus.

"How you goin' to?" inquired Mandy, digging her bare toes into the sand as she walked.

"Don't know—I guess I kin earn my way in—water the elephants or somethin'."

"Oh, Bud; take me!" pleaded Mandy. "You know I ain't ever seen a circus yet, on the inside, I mean."

"Can't," said Bud briefly. "Boys kin earn their way in, but girls can't, and I ain't got no money, nor Pop ain't, fer I axed him."

"I jist can't gin it up!" she said to herself. "Seems as if I must see 'em."

It was pretty hard not to cry that evening when Bud triumphantly showed two bright ten-cent pieces which he had earned. I'll sure earn the other five cents to-morrow, 'n mebbe more, so 's I kin git into one of the side-shows. My eye! But I'd like to see that there fat woman! It says she can't get through any door in a house, but she just stands on the grounds where she's to be seen, an' they build the tent around her."

Pottstown was early astir, and the town soon wore a gay appearance. Bud departed almost before daylight with his breakfast in his pockets, and despair settled down upon Mandy until she remembered the parade. That, at least, she could see from start to finish. As soon as the dishes were done she slipped through the gate and sped away down the road toward town.

Men were busy putting up the great tent, while the side-show tents already dotted the green field, and there was an appetizing smell of coffee and sausages. Mandy crept into the grounds in the shadow of a huge wagon and settled herself on a pile of boards behind another wagon, whence she could watch without being seen. The wagon behind which she sat contained some monkeys, and one of these climbed up and pressed his little wrinkled face against the bars of the ventilator near the top of the cage. After gazing intently at Mandy for a few moments, he gravely thrust one little arm through the bars and offered his paw. Mandy reached up and shook the little brown hand. Just then a terrific roar near by made her lose her balance on her pile of boards, and she tottered over on to the ground, where she stood undecided which way to flee.

"Goodness gracious! That must have been a lion," she said to herself. "I hope he ain't loose!"

Soon there began to be preparations for the street parade. One by one the canvas covers were drawn off the gilded wagons, and enraptured Mandy saw the chariots of her dreams. When the largest wagon of all was uncovered, the one all looking-glasses with the world on top of it and a sort of throne on top of that, she caught her breath with delight. She left her hiding-place behind the friendly monkey's cage and stood beside this wonderful wagon. A man was harnessing six cream-white horses to it, with scarlet plumes on their heads and glittering bells on their harness, and a man with a note-book in his hand stood beside him.

"Hurry up now! Look alive, man! Where's Melia, it's time to start the pa-

rade, and this wagon comes next in line. Sampson, tell Melia to hurry herself up here."

"Melia's sick this mornin', sir," stated Sampson. "Says she can't ride, nohow."

"What shall we do? No Goddess of Liberty! This wagon will have to be left out of the parade, then. Wait," he cried suddenly, swooping down upon the astonished Mandy. "Will you ride on this wagon in the parade? I'll pay you and give you a ticket to the show if you will."

Mandy's breath was so taken away that she could only stare. He shook her lightly by the arm.

"Hurry up now. Will you do it?"

"Oh, yes," gasped Mandy.

"Here, Sampson, take her to the dressing tent, and tell them to put Melia's togs on her."

Mandy was hurried off to the little tent, where she was dressed in a flowing red, white and blue robe, not over-clean, her hair was unbraided and a heavy crown which smelled brassy was tied on her head.

"Now hold up your dress and hurry,"

was the command, and Mandy stumbled out of the tent toward the wagon, where a man swung her up to the top in a trice. "Now sit up straight and hold on tight," he said. "Drive on, John."

She steadied herself with one hand, while she adjusted her gorgeous robe with the other and then leaned back on her throne and gave herself up to the

with crashing of bands and cheers from the people. She found her throne a very uncomfortable place, as the sun came out hot and bright. The dust, too, rose in stifling clouds, and the branches of the trees slapped her in the face and pulled out strands of her hair as she passed beneath them. She was tired but happy. She had earned her ticket, and she would see the wonders inside of the tent. At last the parade returned to the grounds, and Mandy dropped from her high perch, so cramped she could scarcely stand, into the arms held up to help her down.

"Here we are!" said the man with a note-book, who always said that before he said anything else. "Much obliged, little girl. Now you go into that tent and see the show," and he thrust a ticket and a bright twenty-five-cent piece into Mandy's hand and vanished in the crowd.

That night when Bud was telling his experience, Mandy waited until he had finished, and then she told the astonished family how she had seen the circus.

A Cousin Sally Letter

DEAR COUSINS—No children in all the world are more surrounded by opportunities than American boys and girls. Perhaps some of you have not thought of your life in this way, or have believed that other ways of life were richer. But it is not so.

Why, you can even have colleges brought to you instead of going to them.

The entire Department of Agriculture at Washington, D. C., is at your service, and your state experiment station is only waiting to learn that you want special training for the profession of farming, if you're a boy; or domestic science, bee-keeping or poultry-raising, if you're a girl. If you are really anxious for this free education all you have to do is to make up your mind as to what you want to be, then write to the Secretary of Agriculture, Department of Agriculture, Washington, D. C., or to your state experiment station and ask for bulletins to teach you these sciences, and—settle down to study and work. For study and work must be combined if you want to win success.

If you are willing to pay the price, which I am sure you, as an ambitious girl or boy, are anxious to do, pretty soon you will find your air-castle growing into a reality. I want to think of my boys and girls as being ambitious; I want them to dream, but still more do I want them to persist like the great English orator, Richard Brinsley Sheridan, who persisted in his aim to enter the English Parliament until he achieved that, for he had set his heart upon becoming a famous speaker. Some of his first speeches were called failures; you see he had to learn the art.

After one such speech, at which the hearers laughed, he sank down into his seat saying, "It is in me, and it shall come out"—which meant pluck.

He had the pluck which aims high and will not be discouraged, and so instead of quitting he kept on until he gained the fame he was willing to pay the price to gain.

Grit combined with earnest effort works wonders for anyone in whatever work they love best.

The farm boy, and should be as determined to make a success of his profession as though he were working for the presidency, for earning the sincere respect of yourself and those who know you is a task worthy the effort of any boy or man. It pays in every way.

Faithfully, COUSIN SALLY.

Letters from the Cousins

DEAR COUSIN SALLY—We have lovely woods on our farm, and there is a creek which runs through the pasture. We call our home Green Wood Farm. My dog's name is Nip. One day he acted funny, running from one room to another, making us think he was sick. So Mama gave him some medicine. The

next morning he seemed no better. Come to find out, he had a few burs in his hair. Wasn't that a good joke on us? Nip was all right as soon as Papa got the burs out. Your loving little friend,

GWENDOLYN SPINK,
Watertown, New York.

DEAR COUSIN SALLY—I am ten years old and was promoted to the sixth grade for next year. My school was out March 21st. I write with my left hand, but try to do as well with it as if I used my right hand. I love books and have read "Little Women," "The Eight Cousins," "Rose in Bloom," "Mildred Keith" and a number of others.

Our Sunday-school boys and girls have a society called "B. G. Society," motto, Be Good. All take some part in it. I speak a piece next Sunday. We send our collection money to orphans' homes.

Your cousin, MERLE GETTINGER,
Homewood, Kansas.

DEAR COUSIN SALLY—I live on a farm of 250 acres. I am sixteen years old, am in the eighth grade and expect to get through school this year. I have a splendid collie for a pet. Your cousin,

NORTON WEDGE,
Harpersville, New York.

DEAR COUSIN SALLY—Our summer school has been going on. I asked Mama about being a partner, and she said I wouldn't have time to take care of chickens now, but after school was out I could set some hens for myself. Mama said it would be nice for me to have part in the chicken-raising.

Your loving cousin,
LENA MILLER, Humphreys, Missouri.

DEAR COUSIN SALLY—Because I love to do things for my baby brother I have been working buttonholes in his clothes. I like the secret of our club. I love music and took lessons all last summer. I like to go to Sunday-school and church. We live in the country. It is nice all the time, but nicest in the summer. I am twelve years old. Your cousin,

ELIZA H. ALLEN,
Rummerfield, Pennsylvania.

DEAR COUSIN SALLY—I joined the Cousin Sally Club last summer. I help Mother with the dishes. I cook some too. I like that, for Mother lets me make cookies and cake sometimes. I like to skate, and I don't have far to go, for we live in sight of the pond.

Your loving cousin,
VIOLA E. FORRESTER,
Foxboro, Massachusetts.

DEAR COUSIN SALLY—I am a little girl nine years old. I live near Orrville, Ohio. I have two pet cats, Tabby and Whitey, and a pet dog named Sport. Sport is a very bright dog. He plays hide and seek with me, sits up and begs, and barks when he wants a drink. He and I are great friends. With love,

FLORENCE LOUISE RAUCK,
Orrville, Ohio.

DEAR COUSIN SALLY—I am a little Michigan boy who tries to be a help to his parents. I go half a mile after the cows every night for my father. I helped him drive some cattle he had sold five miles to market. I am ten years old. I think all boys should help their parents, don't you?

Your cousin,
JOHN YORK, Portland, Michigan.

DEAR COUSIN SALLY—I love our club, and I sincerely promise to be a loyal member. I am a great lover of flowers and birds. I live within two miles of the De Sota Falls, which are upon Look-out Mountain. Near the falls are rock houses in which the Indians used to stay.

Your true cousin, LILLY MANNING,
Valley Head, Alabama.

DEAR COUSIN SALLY—I have been away on a nice visit. I help Mama wash and iron, wash dishes, dust, sweep, make beds and sew some by hand, and by machine a little. I am making a quilt and lack just a few blocks of having it done.

Your cousin,
LULA WELKER, Bessville, Missouri.



She found her throne an uncomfortable position

delight and wonder of her position. Soon there was a crash of music from the band, the gates were opened wide, and the gorgeous street parade of the Mammoth Circus and Hippodrome was on its way.

"My," chuckled Mandy to herself. "If the folks could only see me now, they wouldn't know 'twas me, I bet!"

To her intense amusement, Bud sat on the topmost post of the fence as the procession passed through the gate and actually gazed with awe into the very face of the Goddess of Liberty and didn't recognize her. She would have waved him a salute if she had dared, but the throne was very unsteady, and it behooved her to hold on as tightly as possible, and then a crown requires a stiff neck to keep it in proper position, so she rolled on past the unconscious Bud in all her splendor, and on down the familiar street, stared at by the admiring crowd and actually passing by her own father and mother, who were as unconscious of her presence as Bud had been. On and on through the town they went,



IN FRONTENAC CAVE

[CONTINUED FROM PAGE 14]

We were all by this time pretty hungry, and Dauphin offered to lead us to another place where fish might be taken, and where there was a fish-spear which the band had used for a long time, and which he had used since he had lived alone. I mentioned that I was surprised we had not found the way to this place, when Dauphin said:

"You don't find that there place 'thout you fall into it and break your neck. It goes straight down like a chimney, and then you go through another rat-hole and come out in the river itself and walk with the current, with your head down so's you don't pound out your brains on the roof, and your head up so's you don't get drowned, and then you come out and go this way and that till you come to it."

He led the way again, and it was much as he had said. The fish-spear was a good three-pronged one, and after we had got two or three fish and he had carefully put the spear where we had found it so that Liverpool might not know it had been touched, we went back, listening a long time before we went up the chimney, for fear we might meet some of the gang coming down. We went to our fire, which was not yet quite out, and had a good meal.

After supper the Captain, who had been very thoughtful ever since seeing the dome to which Dauphin had taken us, began to pace the floor by the fire with his head bowed. I soon noticed that he had his pipe in his teeth. When Dauphin saw it he got up, drew a black pouch out of his pocket and said:

"Cap'n, you ain't got no tobacker, I know. Take some o' mine, Cap'n; you're welcome, I say."

Captain Archway stopped, wheeled around and said:

"Have you got tobacco, Gil?"

"Yes, I have, Cap'n, but no pipe." The Captain took the pouch, and Dauphin added: "You like tobacker same's I like whisky, Cap'n."

The Captain stopped in filling his pipe, and I thought would hand the pouch back, but he didn't, only saying more gently than he had spoken to him before, "Yes, and it's no credit to either of us, Dauphin. Why didn't you make a pipe for yourself?"

"It was too much for me, Cap'n. I didn't have no knife. I didn't have nothing when they threw me down, 'cept some matches and a caudle in my pocket."

"Make him a pipe, Jud," said the Captain to me, as he lit his own, and I noticed his hand trembled, he was that excited, as he put on the coal.

I took my knife and whittled a bowl out of a half-rotted knot readily enough, but I was at a loss for a stem. "Get a stalactite," said the Captain between puffs, seeing the fix I was in. This I did, finding a little one that was hollow like a piece of macaroni; and soon they were both smoking away as comfortable as you please.

The pipe seemed to revive the Captain's spirits wonderfully, and when he had done he said:

"Jud, we're on the right road at last, and we'll be out of this in two days—that I promise. Dauphin, you go and bring me ten or a dozen feet of our rope."

Dauphin set off, and I found myself catching the enthusiasm of the Captain.

"Yes," I said, "things look better. Dauphin will be a great help to us, especially if we get up in the other part of the cave where the men are."

"Aye, Judson, I don't wonder at your saying that," he returned, "at your age. If you were as old as I am and knew men as well as I believe I do, you would think twice before you said it. Dauphin may help us, but it's not much dependence I shall put on him. He talks strong enough against Liverpool now, but it's all because he hates him, and hate is a poor foundation to build on in such a case as this. He hates Liverpool because he is afraid of him and has been driven out of the band. But don't you see how easy it would be for him to get Liverpool's favor again by betraying us? I don't say he would do it, but we can't safely trust him."

This I had not thought of, but I saw that the Captain was right.

"But we must get up into the other part of the cave," went on the Captain, "because I don't doubt he is right about there being no place to get out in this part. My plan is to make a pole of these small sticks, binding them together with strands of the rope, long enough to reach up to the mouth of that tunnel and

he set to work that moment, and stopped no more than to eat hurriedly and sleep a few hours for what must have been two or three days. Thus it was he worked: First he took a dozen of the small sticks, each three or four feet long, and spliced them together with strands of the rope, making a slender pole full thirty feet long. Then he took other sticks of all lengths from two to four feet and gradually overlaid the first pole, letting no two joints come together, and binding and winding every splice with the rope strands. As much as he could he twisted and wove the sticks together, but this was not much because they were so dry and brittle; so mostly they lay parallel, like the stems of a bouquet of flowers, all wound and banded with the rope strands. When the pole was at last done it was three or four inches through and very like a cable of twigs.

While work on the pole was going on Dauphin and I helped by gathering sticks and picking out the best ones, though the Captain rejected about ten thousand that we thought would do well enough. At first when we slept we went up the rope to the Star Chamber, where I had so roughly disturbed Gil Dauphin's slumber by falling down over him. This we did because Dauphin did not think it safe to sleep where Liverpool might so easily come at us; but soon we had used so much of the rope that it was not long enough to reach, and as we hated to spare the time to go up the Gopher-Hole, we came to lying down and sleeping by our fire. And no ill came of it, either.

When the pole was almost done the Captain thought it best that we should visit Sink-Hole Dome to see if it might be that anyone had come down searching for us, in which case we should not have to risk the passage of the upper cave after all. While he finished the pole, Dauphin and I went on this errand; but we met with no reward. We were obliged to go and come by way of the Gopher-Hole, so did not go through the Trap-Door, nor see the Star Chamber. When we came near to our first bedroom I heard the throbbing, now much louder and filling all the neighborhood. It was as if a dull thump was struck on all the walls, ceilings and floors at once. Dauphin fell into a great state of terror on hearing it, declaring it to be nothing less than the Arch Fiend himself beating up from below to get into Frontenac Cave and catch him and his former mates. But when we had got out of the hearing of it he again became cheerful enough, after his way, and set in to curse Liverpool and then his own ill luck in breaking with the gang before the division of the plunder from the bank robbery.

"That's the way," he cried; "there's never no show for an honest man in this here world. The others seen him taking more'n his share, and what do they say? They says nothing! Old Gil Dauphin pipes up for honesty and fair play or blood, and what does he get? He gets blood, and his own blood, brought by throwing of him alive down a pit a hundred and fifty feet deep, with his neck broke and the bats bunting at him three days while he lays there waiting for his neck to get right; and not a drop of liquor to drink!"

But whatever Dauphin's luck had been we soon had some bad luck of our own; and a very ill kind of bad luck it was too. When we got back to Fish Camp we found the Captain standing proudly beside his pole.

"It's all done," he cried, "and there'll never be a better time to try it than this. Here's a plenty of torch-sticks ready, and fish enough to last till we can get out, I guess. Lay hold there, both of you, and we'll carry it over."

It was a half-hour's travel to the place, which we had come to call Dauphin's Pit; but the time did not seem long to me, I was that excited. We went down the Gun-Barrel almost at a trot, but still as mice; though it mattered not, and we might as well have gone with a brass band. For when we turned the sharp corner just this side of the pit we came smack upon two men, Liverpool and Joe Rusk, with two more above at the mouth of the tunnel and one coming down the rope. The two men on the ground clapped their hands on their revolvers, and we dropped our pole and ran back, better scared than ever before, as was right enough, with those fellows shooting and coming behind; and known, as they were, to be good shots too.

[CONTINUED IN THE NEXT ISSUE]

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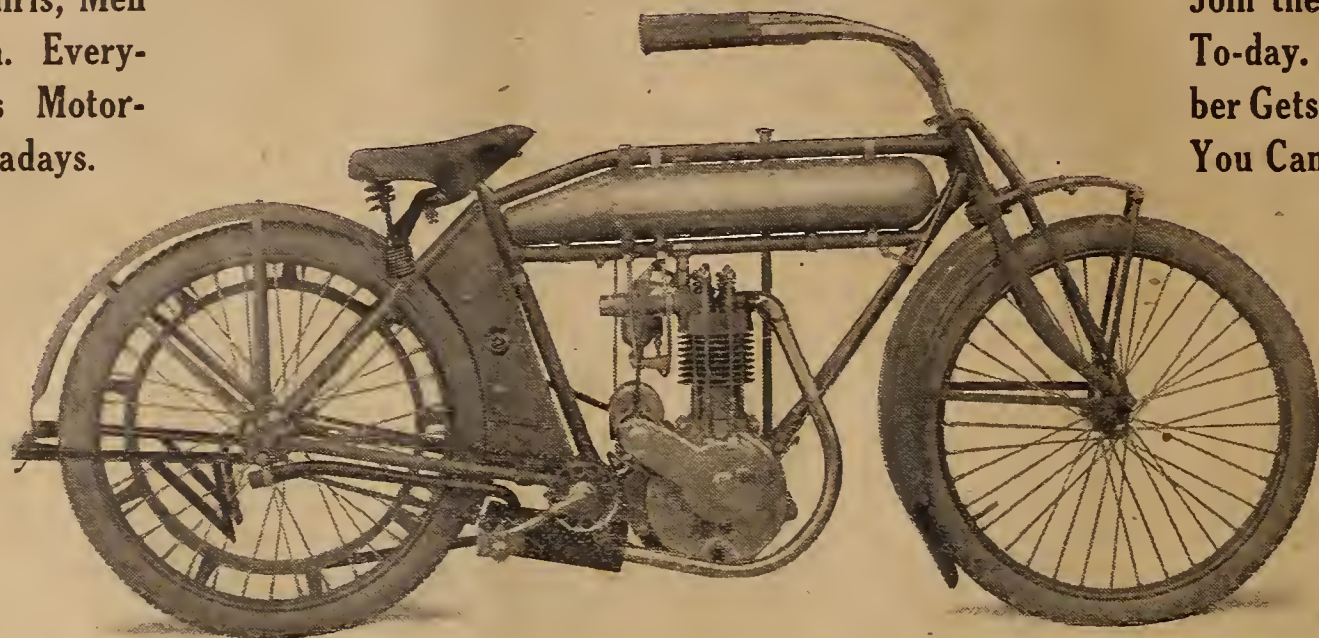
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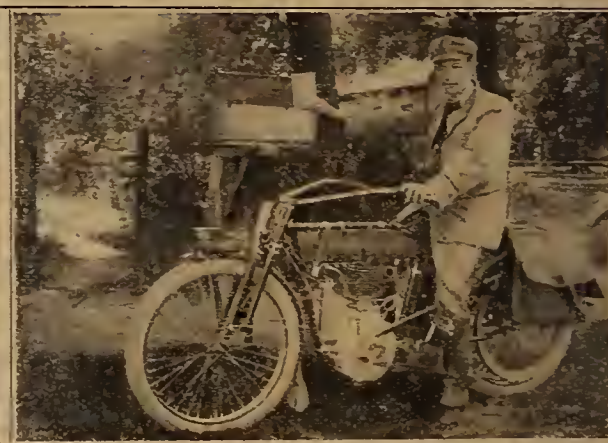
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ESTABLISHED 1877

SATURDAY, AUGUST 16, 1913



Guilty or Not Guilty?

THE POINTS OF INTEREST IN THE COMING NUMBER

WITH THE EDITOR

ADVERTISEMENTS IN FARM AND FIRESIDE ARE GUARANTEED

Special Articles

Committees of various sorts, sent out by various organizations with the idea of learning why it is that so many European farmers are able to get money easily while the American farmer is obliged to pay a high rate of interest, have been darting back and forth over Europe for some time past. Many individuals are there now. What they will find out remains to be seen, but FARM AND FIRESIDE in the next issue will present the conditions right up to the minute as they are known. American farmers may be able to add to their information along these financial lines.

Farm Notes

Are you taking advantage of the various kinks suggested in FARM AND FIRESIDE? In this department for the next issue we will suggest some knots which may be used to make the work easier. Every farmer should work hard in order to work easily; we have taken the first burden from you in presenting these rope suggestions.

Crops and Soils

Boys have been winning prizes in various contests so frequently that even contests have perhaps become monotonous to us; but how a boy can raise 133 bushels of corn on an acre, the real facts in the matter, are always of interest. This account will appear August 30th.

Poultry

Some time ago the newspapers published an account of a wonderful hen that lived so long and produced so many eggs. You have read the story as the newspapers gave it, but the owner of this hen will give us the real story in FARM AND FIRESIDE. The hen was a wonderful hen, but as we have read this account we credit the owner with some qualities worth imitating.

Live Stock and Dairy

The questions and answers which have been given in our Live-Stock Department have proven so acceptable to our readers that we are going to try to get more and more of these into future issues. These questions and answers are merely a part of the work done by our Service Bureau which is available to any reader of the paper. When writing to FARM AND FIRESIDE, however, be sure to make your questions perfectly plain; otherwise the answer may be incomplete to you.

Fireless-Cooker Canning

There will be an article on the new method of canning which almost does away with fuel and with labor. Think of finishing your canning while you are sleeping at night! You need not be a sleep-walker to do this, if you read FARM AND FIRESIDE for August 30th.

Cousin Sally Congress

Cousins from all over our country are going to have an important congress which will be held on the children's page. Cousin Sally's face will beam its friendly encouragement upon them as they tell her and one another about their work and their play, their ambitions and their difficulties. Nothing is better than friendship, and it is a joy to The National Farm Paper to introduce to one another so many fine boys and girls living in all parts of our great country. Their interests are diversified by circumstances, but united by patriotism and by loyalty to the high principles of the Cousin Sally Club.

Crochet Alphabet

Evelyn Holbrook seems to have refuted Solomon's discouraging remark, that "There is nothing new under the sun," by giving directions for the marking of linen by a crocheted alphabet. This is something which will give distinction to a guest-room.

Fashions

Miss Gould will show us many simple and handsome models of school clothes for boys and girls.

Look Out for the Common Cow

There is an organization called the American Grade Dairy Cattle Breeders' Association, the secretary of which has said something—or is reported to have said something. This is his remark: "I am confident that some old farmer is going to spring up from some backwoods and show us a common old cow that will excel these ten thousand dollar pedigreed and pampered beauties."

Well, when he does produce this common old cow he will be justified in springing up to a great height and knocking his heels together several times. For he will be the recipient of the greatest piece of luck any man ever had.

Of course he may do it. Far be it from me to say that anything is impossible. Once a Swedish citizen was on trial before a Swedish justice of the peace for the crime of mayhem. The particular offense charged being that he had bit off an Irishman's nose. The nose was bitten off in a fight between Mr. Oleson and Mr. O'Brien. That was true and undisputed. The question was, who bit it off.

Justice Swenson, after taking the case under advisement, gave his decision in favor of Mr. Oleson. "But," cried the prosecuting attorney, "your Honor, this man's nose is off! Nobody could have bitten it off but Oleson. I am astounded at your Honor's decision."

"Vell," said the justice, "de defendant bane entitled to de benefit of every doubt. Wit God all tings bane possible—mebbe he bite off his own nose!"

All things being possible, maybe the old farmer will one of these days spring up with the scrub cow which will beat the ten-thousand-dollar beauties. But it will be only when somebody bites off his own nose.

What is the difference anyhow between a pure-bred animal and a scrub? It is a difference in ancestors, that is all. No animal can get anything from any source except its ancestors. All its qualities must be found somewhere in its line of breeding. There may be such things as "sports" which are accidental combinations of qualities which seem outside the line of breeding. Justin Morgan, the great stallion from whom the Morgan horse started, was such an animal. But we can't say that, because we don't know what was in his pedigree, there was nothing but scrubs in it.

Put fifty pennies in a hat and throw them until they all fall heads or tails, and you'll be an awfully old man before you get through. After a few billion throws, though, they would fall that way, according to the mathematical doctrine of probabilities. You would then be entitled to spring up along with the old farmer from the backwoods with the prize scrub cow. With God even these things are possible—but they offer small justification for the "confidence" of the Secretary of the Grade Dairy Cattle Breeders' Association.

How Pennies Resemble Heredity

But if you had a hatful of double-headed pennies, you could throw them all heads all the time. And even if there were in the hat two or three ordinary pennies, you could throw all heads often. The pennies you throw in breeding cattle, chickens and all other live stock are the qualities of the ancestors of the stock. The biologists call them "genetic units." All the genetic units in the calf must be in the bull and the cow. There are thousands of these genetic units. They are the pennies you throw from the live-stock hat when you breed your animals.

A pure-bred animal is a hatful of double-headed pennies—with a few ordinary ones mixed in. A scrub animal is a hatful of ordinary pennies—with a few double-headed ones mixed in. The longer the line of good ancestors from which the pure-bred is descended, the fewer ordinary pennies will there be in the hat. And the more good beasts there happen to be in the ancestry of the scrub, the more of the double-headed pennies will there be.

Breeding, then, is a system, continued over many years, of loading the hat with double-headed pennies. That is why the oldest breeds in all animals have their characters most firmly fixed. No horse is so strongly bred as the Arabian, because the Arab-horse hat has had all the common pennies weeded out by centuries of picking out and throwing away. All the genetic units are good ones.

That is why pure blood is so prepotent. Fifty per cent. of the blood of a first cross of a pure-bred and a scrub comes from one line of ancestors, and fifty from the other. The scrub blood has its good and its bad pennies in the hat. The pure blood is almost all double-headed pennies. The pure blood throws all its influences one way. The scrub blood is neutral, divided up, higgledy-piggledy. The massed forces of the pure blood overcome by their force in one direction the disorganized tendencies of the scrub blood. It is the impact of trained troops on a mob.

Scrub breeding is mob breeding. Pure-bred breeding is the marching of trained troops of genetic units. Scrub breeding is accidental. Pure breeding is systematic breeding. Pure breeding uses double-headed pennies, and marked cards. When the man comes along who can beat that game by accident, he may well spring up and crow. But he hasn't sprung up yet.

Put fifty pennies in a hat and throw them until they all fall heads or tails, and you'll be an awfully old man before you get through. After a few billion throws, though, they would fall that way.

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Robert L. Linn

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BI-WEEKLY

Better Babies Again

IF WE glance through magazines and papers at the present time our eyes continually fall upon Better Babies contests; if we search the shelves of libraries the number of volumes devoted to child-welfare is invigorating. But now there is a new topic elbowing its way into thought and literature which, in serving the child, goes behind the child; one which reaches great pre-natal causes. It is called eugenics, meaning the development and improvement of the race. It reminds our young men that if later they are to become the fathers of wholesome babies they must live purely and sanely at a season when wild oats were once condoned. It teaches girls that if they want to become mothers of sane and happy children a careless romanticism will not suffice in the selection of a husband. That love in the narrower sense—love of each other—is not enough; that in making the great choice not only or chiefly is the happiness of husband and wife to be considered, but rather the inheritance which will fall to the children of that marriage. That pruriency of thought which was once called modesty and which forbade the consideration before marriage of the future family is being purged in the sunshine of reverence for God's laws. There is still another factor in the health of babies, the special care which the mother should receive while bearing them. Unless protected and given opportunities for rest and diversion during these periods she will not give birth to vigorous children.

It seems as if this movement for Better Babies should receive a powerful impetus from farming people, who have but to call up as proof of the doctrine their treatment of seed and of live stock. Let our future mothers have convenient houses for their work, and many labor-saving devices, so that strength and time remain for systematic exercise in the open air, and for that just balance of work and vacation without which the body cannot be vigorous enough, nor the mind sufficiently alert and cheerful to nourish adequately the new organism. Give them a horse and buggy, and good roads to drive over, and a little pin-money of whose spending they need render no account. When all these things are done there will be better babies on the farm.

Parcel Post! It's the theme of the day. Postmaster General Burleson is increasing weights and reducing costs to make the postal system better serve the people everywhere.

Cheaper Buying the Mate to Better Marketing

A LOT of worthy movements are on foot. Take "better marketing," for example. If the price of potatoes could be raised two cents a bushel as the result of the general interest and the federal investigation in better marketing, the farmers would receive many thousand dollars more for their potatoes this year. But please notice the word "if." FARM AND FIRESIDE is optimistic in its belief that all the good movements are going to do the farmer a lot of good some day, but when it comes to paying this month's grocery-bill or this year's interest on borrowed money, the different investigations don't seem to help very much.

Right along with better marketing goes something we haven't heard mentioned, and that is "cheaper buying." Cheaper buying is something that we can put into effect right away. It is something that can be studied individually and will be of individual benefit.

How many farmers or how many people in any vocation have any system of classified knowledge on the subject of buying? We are safe in guessing anywhere between one and five per cent. As a rule we buy too hastily. Take two women buying

groceries. One will give an order without asking prices, and lay down the sum specified by the grocer. The other will make inquiries as to relative values of different articles on that particular day. If she can get a pound of bacon for three cents a pound less than usual because it is the last piece, she takes it and has a breakfast of bacon and eggs instead of pork-chops as she intended. She buys carefully and intelligently, and saves about twenty per cent.

Well-managed municipalities and state offices require sealed bids to be furnished for contracts and supplies. Large business houses buy largely in the same manner, or at least are careful that they are buying on a strictly competitive market. In brief, they buy with a full knowledge of the prices and quality of goods.

Individuals buy chiefly in two ways, by necessity for articles that are needed at once or very soon, or through some special inducement by which they are led to believe that a certain bargain will not be repeated or that market values will advance. Probably ninety-five per cent. or more of all individual purchases are on a non-competitive basis, especially when the amount involved is less than a dollar. Now if you want to buy a broom the value of your time may prevent you from comparing values and prices at more than one place, but one must train himself to know values.

A row of catalogues from seed-houses, lumber-dealers, nurseries, implement-dealers and wholesale grocers will be a distinct addition to your collection of bulletins, text-books and lists of commission houses. Find also what your local dealers carry in stock, and what the prices are. Frequently you can save a neat sum by buying materials and making certain necessities yourself.

A farmer of the writer's acquaintance saved \$45 on a four-horse power gasoline-engine of excellent quality and that is giving perfect satisfaction merely by not jumping at the first worm on the hook.

The first step in cheaper buying is taken when you put yourself in a position where you are not forced to buy because of the urgency of the moment. Subsequent steps are taken every time you know where you can get a desired article of quality at the lowest price.



Fisherman's Luck

By Mattie Lee Hausgen

MY FATHER has a splendid reel,
And books of lovely flies!
His wading-boots, too, cost a deal,
And goggles for his eyes!

I have a pole, twine, bent pin, worms.
My muddy legs are sights!
I don't know any fishing terms,
But I get all the bites!

Farm Specialties and Hobbies

THE fable of the woman who put all of her eggs into one basket and broke them will always be worth telling. In that fable there is a warning for the specialty farmers and the man who rides a new hobby. FARM AND FIRESIDE believes in a dominant source of income. In some localities it may be dairying, in another it may be selling baled alfalfa-hay, and in still another it may be gardening. But experience based on a long period of years should determine the dominant crop. And in addition there should be other crops to be called upon to furnish an income in case the dominant crop is not successful.

Sometimes a few acres planted to a new specialty will yield astonishing returns the first year, and the temptation to drop the old reliable crops and go in for the novelty is strong. It is the temptation that leads the gambler on to his ruin.

If you go into the specialty on a large scale, you will need more land, more implements, a greater investment and, above all, a bigger market outlet. If you are financially independent you can afford to run the risk of losing, but the few men of moderate means who have gambled on a new specialty, who have won and shouted out their success, are numerically insignificant compared with those who have failed and kept quiet about it from humiliation.

Putting all your land into one crop is as risky as the woman putting all her eggs into one basket. Methods that are radically new and crops that are new and untried should be tried on a small scale for several years before plunging deep.

A German scientist has discovered that one-year-old twigs of vines when finely ground and fed to horses, steers and cows were about equal in food value to straw as a feed.

Buy Lightning-Rods

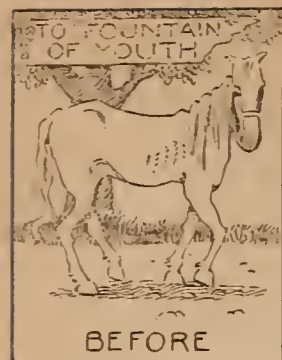
THE lightning-rod has suffered from bad associations. It has been ruined by the lightning-rod pedler. Every property-owner, when the lightning-rod is mentioned, at once thinks of the smooth-talking fellow who asks as a privilege to be allowed to "rod the buildings as an advertisement," and asks the pleased recipient of the gift to sign a statement that the rods were put on by his consent—or some other paper.

Then four hundred dollars' worth of the stuff erected when the folks are away, and a promissory note at the bank!

Such rods are not likely to be well put up. Rascals never do efficient work save in rascality.

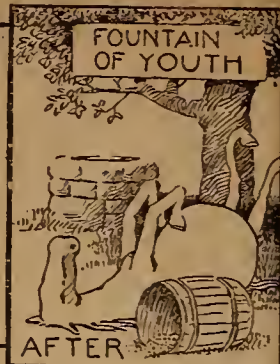
But, according to the fire marshal of Wisconsin, lightning-rods are not only good things, but almost as necessary as insurance—perhaps more necessary. Thirty Ohio mutual fire-insurance companies paid out for lightning losses in 1912 on rodded buildings \$25.51, and on buildings not rodded \$29,998.05. The statement ought to show how many risks there were of each sort, but unfortunately doesn't. In Wisconsin in the same year there were only three fires from lightning in buildings provided with rods, and 226 in buildings not rodded. In each case where a rodded building was fired by lightning, the rodding was defective or supposedly so.

More fires are caused by lightning than any one other cause except defective flues, and no kind of fires may be so easily prevented. The remedy is the lightning-rod. The man who rods his buildings should study the matter. His rods should reach far enough above the peaks of his buildings to draw the lightning. There should be enough of them. They should be large enough to carry off the heaviest discharge. And they should reach permanent moisture in the earth. And they should not be put up by smooth-talking strangers.



Veterinarians—Good and Bad

The Veterinary Profession Needs Weeding Out. What Are We Going to Do About It?



For Better Veterinary Service

By Dr. C. W. McCampbell

Secretary, Kansas Live-Stock Registry Board

THE services rendered by practising veterinarians is a matter of great importance to the live-stock interests of the country, particularly the service rendered in attempting to control and eradicate contagious and infectious diseases. If the veterinarian renders competent service he is a public benefactor, but if he renders incompetent service he may become a public menace. The latter can be prevented.

From various sources comes the complaint that the service rendered by the average practising veterinarian is not satisfactory. Two parties, the practitioner and the patron, must be considered in seeking the cause for this complaint. I believe I am in a position to see and to appreciate the position of both, and it seems that there are two principal reasons why the service rendered by the average veterinarian is not more satisfactory. The first is a lack of appreciation of competent veterinary service by the general public, and this creates a field for quacks and incompetent graduate veterinarians; second, failure upon the part of many veterinarians to make the interests of the live-stock producers their own interests.

I am thoroughly convinced that the lack of appreciation of competent veterinary service is the all-important reason for the present condition of affairs. During the past winter it was my privilege to hear this question discussed by the committee on live stock of a certain legislature. These men were supposed to represent the sentiment of the general public and the best interests of the live-stock industry of that State. The chairman and the majority of this committee boast of the fact that they are progressive stockmen. At this particular session the chairman expressed the opinion that the non-graduate was more efficient than the graduate veterinarian because he had secured his knowledge through the school of practical experience, and that it was all a matter of experience rather than one of education. This seemed to be the sentiment of the whole committee.

The Quack Will Cause Only Trouble

This same committee was very indignant when it was suggested that a bill be passed prohibiting incompetent veterinarians from practising in the State. Later it recommended for passage a bill which puts the competent graduate and the quack upon practically the same basis. There is a very urgent need for more rigid laws to regulate the practice of veterinary medicine in every State in the Union.

The control of infectious diseases depends largely upon the closest observation of the minutest details and scientific technique, which can be mastered only through diligent study and application in the classroom and the laboratory. Certain lines of serum therapy, when properly handled, have proven to be of inestimable value to our live-stock interests. Yet we see failures on every hand, and why? Because incompetent men are so often allowed to do this work, and because too many owners of stock undertake to dictate to the veterinarian when and how the work shall be done. Yet they have not the slightest understanding of the very principles upon which successful treatment depends.

Such conditions do not offer an attractive field for the man who has the temperament, the time and the money to fit himself so that he may render competent service as a veterinarian, hence the field is becoming filled with incompetent men. But a course of instruction does not insure success.

I am in close touch with over two hundred graduate practising veterinarians, and the most successful of the number is a man who located where two other graduates had failed. From the very start he studied the problems of the farmers of that community and made their interests his own interests; he was always fair and honest with his patrons and was a useful citizen of that community. To-day the people of that community glory in his success. He has become their counselor as well as their veterinarian. Hence, the personality of the veterinarian and his attitude toward his patrons have a great deal to do with the satisfaction of the service rendered.



Control of Live-Stock Epidemics

By D. S. Burch

Associate Editor, Farm and Fireside

LIKE many other situations affecting the farmer, the veterinary situation has been drifting. It has been drifting for the most part without captain or crew; nobody, in fact, has given it much real attention. But we do know that a lot of men with veterinary titles attached to their names are driving around the country doctoring animals and collecting fees.

Many of them are selling medicines and drugs represented to cure or relieve diseased conditions. The principal point of inquiry just now is to ascertain when a farmer or liveryman or village deacon or anyone else who has had experience in handling and trading horses ceases to become a layman in the eyes of the medical profession and becomes a full-fledged veterinarian.

The matter is at once found to be one of state control, with the emphasis on the word "state," and the word "control" almost silent. Let us take a specific example. Wisconsin is generally conceded to be fully up to the average State in legislative affairs and somewhat in the lead in its agricultural work. Some weeks ago I had occasion to discuss the veterinary situation in Wisconsin with Dr. O. H. Eliason, State Veterinarian.

Wisconsin has approximately three hundred veterinarians, about one-half of whom are so-called "licensed" men and the others are "graduate" veterinarians. The difference between the two classes is, briefly, this: From time to time up to 1909, the Wisconsin State Legislature passed laws providing for the licensing in the veterinary profession of all men who could secure two hundred and fifty names to a statement that the applicant for the license had been for ten years previous to date of application making his living by practising veterinary medicine. The applicants for licenses were not required to pass any examinations, they were not required to have any credentials of study of veterinary science, but merely the endorsement of two hundred and fifty men.

Recognize the Legitimate Veterinarian

The graduate veterinarians are men who have graduated from institutions where veterinary science is taught, and have been examined and passed by a board of examiners appointed by the governor. Both classes of veterinarians are now practising in Wisconsin and have equal privileges.

Wisconsin is now recognizing that the best veterinary service is possible only when every practitioner is required to be examined by the board of examiners, and sentiment is demanding that all veterinarians be graduates of institutions where they have had opportunity to learn their subjects and become competent. Still it will be years before the field is freed of the men whose only endorsement for their fitness is a list of two hundred and fifty names of personal friends.

In handling outbreaks of serious diseases such as hog-cholera, Dr. Eliason has sent out a skilled representative from his office to instruct the local veterinarians in the treatment and the proper use of the protective serum. Excellent results have been secured by that system.

Right here appears one of the biggest clouds in the veterinary horizon. Various colleges of agriculture recognizing the public interest in the control of animal diseases are, with the best of intentions no doubt, undertaking to distribute serums, tuberculin and kindred products. Reduced to lowest terms, this service is a great advertising boom for the colleges, but is bad for the live stock and the farmer. The latter is erroneously made to believe that he can handle his own live-stock diseases as well as can a veterinarian.

One of the most deplorable conditions of to-day is the attitude of educational and experimental institutions in grasping at state offices and attempting to appropriate for themselves legal and legislative functions.

What Canada Has Done

Canada has been more level-headed in the control of animal diseases than any one State of the United States. Here is an extract from action of the Canadian Council of Ottawa:

Whereas it is deemed advisable and in the public interest that the importation, manufacture and sale of hog-cholera serum and virus be prohibited in the Dominion of Canada, therefore . . . the Governor-General and Council . . . are pleased to order as follows:

The use of hog-cholera serum or virus being considered a source of danger, the importation, manufacture, sale or use of such serum or virus is prohibited.

This is not a reflection on the efficiency of the serum and its ability to control and prevent disease, but rather a safeguard against the unskilful handling of the virus.

The loss from hogs dying under Canadian conditions is considered less than the loss following the unskilful use of the serum and the spread of the disease by careless veterinarians going from herd to herd.

The inspectors of the government are allowed to value ordinary grade hogs at fifteen dollars and pure-bred hogs at fifty dollars, and the owner receives two thirds of the value as payment or compensation.

In dealing with an outbreak, not only diseased, but also all contact hogs are destroyed. These are slaughtered under veterinary inspection, and the owner is permitted to sell those which are found to be healthy for food.

The stringent methods of the Canadian government may be severely criticized: In this country they might be considered unconstitutional and autocratic, but they nevertheless bring excellent results.

Among the methods for raising the standard of the veterinary profession in the United States may be enumerated:

A rigid examination of all applicants by a competent board of veterinary examiners.

A re-examination every five years.

Cancellation of licenses for malpractice or inefficiency.

Absolute state control over all veterinarians and over the manufacture and distribution of remedies, serums and the stamping out of contagious diseases.

Quarantine a Minus Quantity

By B. F. W. Thorpe

Associate Editor, Farm and Fireside

FARMERS are now giving much more critical attention than in the past to the causes that contribute to the spread of infectious diseases among their farm animals. This fact is constantly being brought out by letters received by FARM AND FIRESIDE. These letters describe the reckless carelessness much too commonly found among veterinarians as well as practitioners of the "hoss" doctor school while making professional visits or investigating to determine whether infectious diseases exist.

A letter from a subscriber in the near corn-belt region graphically describes how a so-called veterinarian passed from farm to farm, in and through farm buildings, hotel stables, blacksmith shops and public conveyances, directly from infected hog-lots and premises where hog-cholera was constantly causing sickness and death of swine. In the locality mentioned by him seldom was there even a pretense made to disinfect the clothing or hands of the veterinarian or his helpers before leaving the premises where hog-cholera existed.

Another letter from an indignant farmer in the neighborhood above referred to was given to FARM AND FIRESIDE's veterinary expert, Dr. A. S. Alexander, as a text for a sermon. Doctor Alexander handles the matter without gloves in the following article.



Tom, Dick and Harry, Veterinarians

By A. S. Alexander

APPALLING is the lack of care shown by farmers and veterinarians in dealing with contagious diseases and terrible the penalty paid. How careful and anxious is every man, woman and child in a district when smallpox breaks out; how stringent are the quarantine laws and how perfect the observance of such laws, local and state. Such exactly should be the feeling and practice toward an outbreak of cholera, glanders, anthrax or foot-and-mouth disease: the only difference being that animal and not human lives are involved.

When contagious foot-and-mouth disease breaks out in America, as it has on a few occasions, Uncle Sam instantly takes hold, kills and utterly consumes with fire all diseased and exposed animals, perfectly establishes and enforces quarantine regulations and perfectly cleanses, disinfects and whitewashes all contaminated buildings. The same actions are in force abroad in like outbreaks of this fell disease.

There can be not the slightest question that the present methods of handling such a disease as cholera of the hog is lax, unscientific, dangerous, disastrous. Every Tom, Dick and Harry may make and sell and apply any serum he sees fit, and the temptation has been to introduce and use worthless serums alleged to have protective powers. It is high time that all manufacture and sale of antitoxins, tuberculin, serums, vaccines, bacterins, and such like biological products and their use, should come under state and government supervision and control. When this is done such agents for the protection of animals will actually possess the protective powers claimed for them, and they will be used invariably by men qualified to give them intelligent application. Then deaths will not be caused by virulent serums or vaccines which should contain no virus; then no bungling will occur in diagnosis and application of protective measures; then local, state and federal health officers and sanitarians will work in harmony and in union and so wield a tremendously effective influence against disease. There is no subject more deserving of consideration by state and federal legislative bodies.

All occurrences such as our correspondent recounts must be made impossible by local and state vigilance, enforcement of sane and necessary laws and application of penalties made and provided. More care should be taken to cleanse, disinfect and whitewash shipping-chutes; railroad pens, yards and cars; market pens and stables; show-yard unloading platforms, pens and buildings. Every farmer should make it his invariable practice to quarantine each new-bought beast long enough to make sure that it is sound and healthy. All auction sales of stock should be under the control and supervision of state sanitary officials. At present they are one of the chief sources of the spread of tuberculosis, contagious abortion, contagious mammitis (garget) and other diseases afflicting horses, cattle, sheep and swine.

No veterinarian should be employed by anyone to handle dangerous diseases unless he has graduated from a regular veterinary college, and all veterinarians should be most careful that they do not unwittingly or through culpable carelessness carry contagious disease from farm to farm. Lastly, it is a wise and profitable policy for every farmer to keep away from farms and other places where an outbreak of contagious disease has occurred and to prevent people or dogs from coming from such places onto the home farm. Do the sympathizing and advising by telephone, and abandon the old-time dangerous practice of discussing the matter in the pens or on the fence.

Regard contagious diseases of animals as if they were smallpox of man, and such diseases soon will become less common, spread less and kill fewer animals.

Let More American Farms Grow Capons

A Sane and a Safe Poultry Business for Many Localities—Have You Thought About It?

By Alexis L. Clark

JUST recently I heard an argument on the relative profits of egg production and capon-growing. It was something like this: To secure an income of \$2,000 a year approximately two thousand laying hens must be kept. After deducting cost of labor, feed, interest on investment, annual repairs on property, etc., and replacing a third to a half of the layers, a profit of over one dollar per hen could hardly be expected. Against this, to secure the same annual income, only one hundred hens need be kept if all the eggs produced during March, April, May and June are set and capons made the prime object. During these four months, which are the natural laying months, the hens should lay at least a fifty-per-cent. yield, or sixty eggs each. If half of these hatch, and two thirds of those hatched are raised, there should be ten cockerels to caponize and ten pullets to sell as soft roasters in the fall. This gentleman, who, by the way, is at the present time an extensive poultry-raiser and is located in a capon-growing district, claimed that the pullets sold should cover all expenses of themselves and cockerels up to that time, so that the price received for the capons should be clear profit. Figuring this way, he showed that these one thousand capons, at \$3 each, would give a profit of \$3,000 a year, the laying flock paying for their own keep by eggs produced during the other eight months. Allowing, however, an overestimation of a thousand dollars, we see that the income should still be two thousand dollars a year.

Raising Poultry Off the Farm is Risky

Personally, I am sure that such figuring proves but little. We must always allow for great shrinkage in any branch of the poultry business. I would say that the one hundred hens would produce about forty eggs apiece during the same months. All good capon breeds are also good setters, and the production during these months snuffers. The forty eggs should produce twenty-five chickens, and twenty should be raised. Of these the thirteen pullets and the two scrub cockerels would be sold as roasters at the age of six months. They should then weigh five to six pounds each and bring from a dollar to a dollar and a half apiece. Half of that should be ample to pay for the cost, leaving fifty to seventy-five cents each toward paying for the cost of the capons. On the general farm even the largest capons should not cost over a dollar and a quarter for food and labor, and should be limited to seventy-five cents. These capons will not all develop into ten-pound birds. About five would go to that weight or over, and the other five would average eight pounds. The five large ones might bring from two dollars and fifty cents to three dollars apiece, while the five smaller ones would bring about two dollars each. So we would secure about \$2,250 for the one thousand capons from a flock of one hundred hens. No one can figure out just what the cost would be on any special farm or under any certain conditions, but the figures certainly look promising, especially if we remember that pullets would pay a large part of the cost of the capons, besides their own. That looks like profits.

If the failures in chicken-raising have taught anything, it is that poultry at its best off the farm is a risky proposition. We hear much of the great egg-farms in New Jersey; a little acquaintance with these farms shows that almost without exception they belong in one of two classes. They are either just being organized and built up (the owner is still full of enthusiasm and looks upon and talks about only the bright side), or else they have some other source of income. It may be the owner has business interests which allow him to carry on the egg-farm, or perhaps a specialty is made of day-old chicks, which of late years has been a very profitable side-line. Very often exhibition stock is kept, and the high prices received for hatching eggs and breeding stock goes a long way toward making both ends meet, or, as is becoming by far the more common condition, the egg-farm is carried on as an important side-line to other farm work.

Poultry-Raising on the Farm Neglected

Poultry-raising on the farm in the past has been dreadfully neglected, and yet always considered a necessity. Poultry-raising in the future is also going to be considered a necessity on the farm, but it is going to receive just as much attention or more than any other line of farm work.

All of the recent investigations in poultry-breeding, poultry diseases, raising chickens and other lines have shown that successful poultry-keeping depends more upon the natural inherited vigor which only farm conditions can give than upon all other factors combined.

Hens will lay just as well confined in good open houses as they will if given access to acres of green pastures. To be sure, they will cost more for food and maintenance. Winter broilers that sell for fifty cents a pound or more can be raised in brooder houses, and a great number can be raised on a small area. Capon-growing calls for entirely different conditions. Capons need the same kind of environment and care as breeding stock: plenty of range and green food to insure a large strong framework which will later take on thick layers of tender flesh. Then again, of course they are enormous feeders, and only where a large proportion

of their food can be raised on the farm and where they can harvest much of it themselves is it possible to raise them cheaply enough so that a profit can be secured. It has been proved that it is absolutely impossible to raise chickens where most or all of their food must be purchased, and sell them at market prices as broilers and spring chickens during the summer at a profit. They won't pay for their feed, to say nothing of the labor and thought expended on them. These are the chickens which should more frequently be turned into capons. The cockerels from the early-hatched chickens will usually bring enough to pay for themselves and more, but later, as the season advances and the price for broilers drops, there is no profit in them.

Where Capons May Prove Profitable

The dairy farm, the general farm, the fruit-farm, are all adapted to capon-raising, and a flock of from fifty to a hundred or two hundred will prove to be one of the best money crops grown if a good breed is selected.

Most cities in the East having a population of 25,000 or over should use all the capons several farms might raise. Often they will not pay quite as much as New York or the larger cities, but on the other hand they are not quite so particular as to quality, etc. The demand in recent years has been for extra large birds. Capons weighing ten pounds apiece and over are usually worth, at wholesale, thirty to thirty-four cents per pound during the season of greatest demand. A yellow skin and clean yellow shanks are favored by discriminating markets. The points to be aimed for in their relative importance might be placed like this: first, the general clean, well-picked appearance; then, size, plumpness and color of skin.

The breeds and crosses which are popular in South Jersey where the famous Philadelphia capons are all grown are Black Langshan, Light Brahma and Partridge Cochin for pure breeds, but the great majority of growers are continually crossing in blood from other breeds. The Barred and White Plymouth Rocks are



THE Langshan cockerel on the left and the Langshan capon on the right are the same age, but the former weighs only 5½ pounds while the capon weighs 7½ pounds. The Light Brahma hen represents a typical capon breed. White Rocks, too, are in demand

The cockerels are caponized when about three months old, in July, August and September. Such capons are at their prime when nine months old, and are ready when the prices are at their highest point in January, February and March. Many of the growers do the caponizing themselves. It needs only to be seen to be learned. In most communities where capons are grown to any extent there are men who have become expert in the operation. The usual charge is from three to five cents apiece. The loss by death is less than one per cent, when the art is once conquered. Quite often one testicle may be broken in the operation, and if a minute particle remains within the bird that bird develops into a slip. He may become then as an ordinary male, or only partly so, a sort of half-way male and half capon. Even if in operating an artery is severed and the bird bleeds to death it is just as good for table purposes as if killed in any other way. After caponizing the birds are put out and fed soft food for a couple of days. If any of them develop wind-puffs they should be pricked. The operation does not seem to give the young chicks much annoyance, as I have often seen them, while on the table and during the operation, reach out and eat up grain or wads of cotton or anything that is within their reach. To insure the best results in caponizing, the birds should be starved for two whole days previously. This empties the intestines and allows the testicles to be seen readily. A bright, sunny day is best, and the birds should be placed so that the direct sunlight can enter the incision and show up the organs to the best advantage. A very bright artificial light can be used to advantage, and with such aid caponizing can be done at any time and in any place.

What the Market Asks For

Corn and wheat or corn alone is a very snitable cheap feed and answers all requirements if the capons have a good range. Old orchards or just ordinary farm meadows and fields will furnish them with all other necessary nutrients. A little quicker growth can be secured by the use of ground feeds wet with skim-milk, and in dairy sections this should be the practice. This method is especially profitable for a couple of weeks before killing. Either crate fattening or pen fattening

is profitable for capons, and most range-grown birds will take on a good gain by such forced feeding for ten days to two weeks. Longer than that will usually result in a setback, as their systems refuse to be gorged and take care of the food under such conditions. Many farmers refuse to bother with killing and picking their capons, and sell them alive. Killing by bleeding and piercing the brain from inside the mouth is the only way now for market poultry. If properly stuck the feathers come out very easily. In picking capons it is customary to leave on those parts of the plumage which are characteristic. For instance, the neck-hackle grows long and peculiar in capons, and so is left on when picking, likewise the tail and sickle feathers, which show at a glance whether the bird be a cock or a capon. Then the primaries and coverts of the wing are left on, and a ruffle of feathers about the hocks. Capons are usually packed in barrels for shipment, with plenty of ice, even in winter.

With the prices on all meat products going higher each year, there is little need to fear that poultry will not bring as high or higher prices in the future.

We cannot all, nor do we all want to, raise special crops, but we should be quick to recognize a demand, and if, as in this case, without any extra outlay of cash or very much extra attention we can grow on our present area another crop which is almost sure to pay a handsome profit, then let's more of us try our hand this year at a small flock of capons. Like any of the other branches of chicken-raising, there are no secrets to it. There is no particular system which can secure a remarkable income. It needs simply a knowledge of the requirements, and, like anything else, can only be learned by trying. In return it offers a fair return on the money and thought expended, and allows another crop to be marketed from the farm without loss in any way to the crops usually grown.

The Value in Heavy Breeds

With the growing popularity of Leghorns, let us not forget that there are some advantages that the heavier breeds possess, entirely lacking in breeds like the Leghorns. The possibilities in capon-growing is one, and there is no reason why a flock of most any of the American varieties should not give us just as large an egg yield as the Leghorns, and instead of having for market the little broilers which are so hard to pick we will have ten-pound capons that will be easy to pick and bring as much per pound as most of the smaller chickens do.

EDITOR'S NOTE—There is plenty of evidence to prove that the American breeds as ordinarily bred will not produce an annual egg yield equal to the standard-bred Leghorns. There is, however, nothing in the way of developing strains among our American breeds that will equal the Leghorns as egg-producers and at the same time furnish roaster and capon young stock.

THE HEADWORK SHOP

New and Original Ideas That Have Been Worked Out on the Farm

A Cheap Hand Scoop

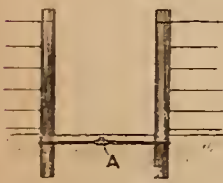


OFTEN in handling ground feeds and grain a small scoop that can be handled with one hand is desired. Then, too, one of a definitely known capacity is often very serviceable in mixing feeding rations or in estimating the weight of small amounts of feed.

To provide such a scoop, take an ordinary gallon syrup-pail as is supplied by the general market, and remove the bail and top rim by placing it top side down on a hot stove for a few minutes. As soon as the solder is melted, a light tap will remove it. Take a piece of soft-wood board an inch thick and about three inches wide and seven inches long, and cut in it a small hole for the fingers. This is then attached to the bucket to serve as a handle. At its top part it is attached by a broad-headed nail being driven into it from the inside of the bucket through a hole in the tin. The lower part is held in place by a narrow strip of tin which surrounds the bucket with its two ends securely nailed to the handle.

The corners and sharp edges on the handle should be trimmed down so that they do not hurt the hand. P. C. GROSE.

Braceless Gate-Posts.



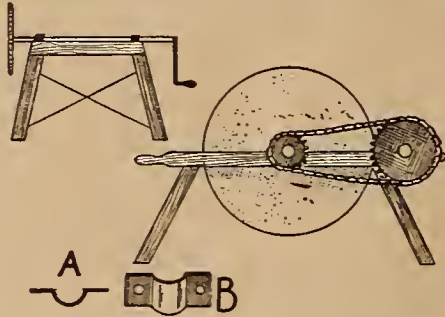
WHEN putting up fencing, especially around gardens and lawns, it sometimes is desirable to omit wood or other above-ground braces for the sake of doing a neat job, yet the fencing must be tight and kept so. The sketch illustrates a method highly satisfactory, even when used on large gates if gate-posts are set in deep and a few stones pounded in firmly around the bottoms. Dig a shallow trench between the posts and connect them with two or more strands of galvanized wire, and splice the ends. Slip

the strands into the trench, twist (A) with a short stick till you draw posts together firmly against the soil, then cover up the wire. The "pull" of the fence cannot lop them over, because they are pulling against each other. In setting any kind of posts always tamp the soil very firm the first few inches in bottom of hole. That is the secret of firm posts. J. J. KADLETZ.

I TOOK two sprocket wheels, one smaller than the other, off of an old binder. I put the smaller wheel on the shaft of the grindstone where I took the crank off.

Chain Propelled Grindstone

Then I put the larger wheel at one end of the frame. To make boxes for the shaft of the larger wheel I took two pieces of sheet iron and bent them (A) and drilled holes in each side (B). I then took the crank and placed it on the end of the shaft of the large wheel. A chain from the binder was placed over both wheels. This device is very handy for grinding mowing-machine knives, as the person turning is out of the way. J. GRAY WARRINGTON.



TAKE an old ax or a similarly shaped piece of steel that has one sharp end. Have two holes bored in the opposite end, as in the illustration.

Vertical Ax for Cutting Roots

IN DISTRICTS where bridges are few and the old-time foot-log is out of date, bridges are now constructed of woven-wire fencing stretched across the stream like a narrow lane about thirty inches wide. Two-by-four crosspieces are laid every few feet on the large bottom wire and are stapled so they cannot slip. The floor is laid on these. The ends of the bridge are fastened to trees when convenient, but if posts have to be used they must be well braced. A guy-wire or truss-wire runs from the upper corners of the ends to the bottom of the center. If this is drawn tight the bridge will really bow up in the center. This bridge is safe for children or old people who could not traverse a log. OMER R. ABRAHAM.

DO NOT ever paint a ladder to preserve it, but instead keep it in the dry when not in use, and never use it in the wet unless unavoidable. I once used a fine extension ladder and bragged about it being so light. Several years later I had occasion to use it again and was astonished to find it most burdensomely heavy. It had been painted since I had first used it, and I suppose the added weight of the paint made it seem heavy. I once had a painted ladder break under me; it seemed solid, but was rotten under the paint.

Don't Paint Your Ladder

MY best ladder, a twenty-eight-foot extension, is about ten years old, but as good as new, for it has never been rained on. Being perfectly dry, it is light, and knowing its good order I feel safe on it in almost any position. PAUL R. STRAIN.

BRIDGING of fence wire

Bridging of Fence Wire

THE first-prize contribution in the Headwork Shop in this issue is, "Braceless Gate-Posts," by J. J. Kadletz.

Pull Up the Windmill Tower

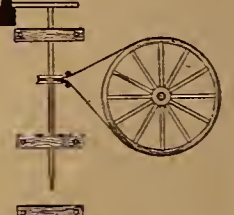


MY TWO brothers and myself raised a fifty-foot windmill tower by using a wagon-wheel as a windlass, as illustrated. The rope for the tower was wound around the hub of one of the back wheels, and the spokes were used as levers.

This device can also be used for stretching fence wire or hoisting heavy weights or machinery in barns and sleds. The wagon must be chained securely to strong stakes driven into the ground or be held by some other method. R. M. STERN.

As Good as a Five-Dollar Drill

TO MAKE a drill something which is essential on every farm, take a wheel about eighteen inches in diameter, and wide enough to run a belt on, and bolt same to the side of your workshop, as shown in sketch. Take two two-by-fours about eight inches long, and bore a five-eighths inch hole in the center of each, so that a half-inch gas-pipe will work in them freely. Bolt these two-by-fours to the side of the building about twelve inches from the big wheel. Attach a four-inch pulley to the half-inch pipe or rod so as to run a belt from the large wheel to this, and fasten an old brace ratchet to the bottom of the gas-pipe to hold the drill in place. Put a weight on a lever, at the top of the drill rod, to force the drill through the iron. C. K. TURNER.



Headwork Winner

The first-prize contribution in the Headwork Shop in this issue is, "Braceless Gate-Posts," by J. J. Kadletz.

The Fork vs. the Knee

How Stack Thrashing May be Prepared For—A Talk From Experience

By G. W. Starrett

THE general complaint of farmers is that they are unable to procure sufficient help to do their thrashing, from the shock, as they did in former years, when the neighborhood farmers changed work. The increased cost in wages when they do get a complete working force of five or six teams and wagons, and twenty or more men, will cause them to return to the old method of securing their grain in stacks and ricks and thrashing at their own convenience.

I will assume that the stack is properly built, and ask the readers of FARM AND FIRESIDE if there is not a better way to stack grain than to don a cast-off pair of breeches, reinforced by leather knee-pads, and wallow over the stack on the knees? In short, I would have them consider the advantage of stacking grain with a four-tined, D-banded fork.

Where Practice Makes Perfect

My father was the only man to my knowledge in our community who built large numbers of grain stacks and ricks in this way. He was uniformly successful in saving the grain in good condition, while many of the knee stackers lost much grain, sometimes building good looking stacks that spoiled to the middle. Let me offer an explanation. On the outside, the stacker crowded the sheaves in tightly and held them down under his knees. He made a nice solid surface, but on the inside courses he let up on his work. When the stack settled the outside, being more solid than the inside, does not settle as much, therefore it takes water instead of throwing it off. Since sheaves must be handled singly to build a good stack, I know of no more rapid way to handle them than with a fork. The four-tined fork holds the sheaf steady. When the right hand grasps the D, the handle cannot turn in your hand, and you have the benefit of the wrist movement in controlling and placing the sheaf, which you could not have done using the long, straight handle. Besides, the long handle is in the way of the helper and piteber. It is well to have a fork with handle eight or ten feet long to reach the sheaves up to the stacker when topping a stack. An extension ladder is also needed to reach the top of the stack without tipping it to one side

in finishing. You will hear men talk of stacking "with the sun" or "against the sun." There is no difference in the result; it is in the men. The man who works with his left hand forward on the handle of an ax or fork will stack "with the sun," if he uses his right hand forward he will stack "against the sun." Most men work with the left hand forward, therefore I will "stack with the sun."

Pitchers and Stackers Must Work Together

The position of the stacker is standing with his left foot on the last sheaf laid—just outside the band, his right foot to the rear. The helper, or pitcher, must pitch the sheaf so that it lies obliquely with the butt before the stacker, and the top near his right leg. The stacker can, without changing his position, thrust the four-tined fork into it and bring it around to its place and set his left foot upon it before withdrawing the fork. With trained pitchers the sheaves go into place like clockwork. But pitchers must not be permitted to pile the sheaves on top of one another. They must change position as the stacker advances and deliver his sheaves properly.

The standing position of the stacker enables him to take in the outlines of the stack and keep it in better shape than the man on his knees. The inside courses receive the same care and tramping as the outside courses. Fill up holes and low places. Keep a well-rounded and solid middle above the bulge. Do not try to make too much bulge; it only makes more space to cover up, and you are liable to have slips to prop up or to take up and relay.

You have noticed that when the sheaves have stood in the shock several days they have a long and a short side. Below the bulge turn the long side up. Above the bulge turn the short side up. This helps shape the top. The bulge should be about

one third the height of the stack. In filling the middle of a rick, when the tops of the last two courses lap on each other, place the sheaves lengthwise like a ridgepole. Keep this ridgepole idea in mind when topping out. To raise the middle give the sheaves more lap; that is, let the butts of the sheaves cover the bands of the last course more or less, as you wish to raise or depress the middle.

In topping it is best to lay the last two or three courses by hand. For these outside courses it is best to break the sheaves (as you would in capping shocks) and lap them on the straight sheaves in the middle. You will gain time by saving the cap-sheaves from the last load or two for this purpose. Should you wish to protect the top of the rick further, cover with green swale-grass. It will pay to take the ladder and a light band rake and give the stacks a light raking while the dew is on. It turns the straws downward and helps carry off storm-water.

Give this method of fork stacking a fair trial.

If you have a complete idea of how stacks should be built to make them storm-proof, you will find the sheaves can be placed as well with the fork as they can by the knee system.

Don't swell up, for somewhere, sometime, you'll find a bigger toad than yourself.

Essential Crop Foods

By Chesla Sherlock

FEW farmers realize the actual value of the fertility of which they are continually robbing their soil. An acre of wheat deprives the soil of forty-five pounds of nitrogen, twenty-three pounds of phosphoric acid and thirty pounds of potash. On the market, nitrogen is worth seventeen cents per pound, phosphoric acid seven

cents per pound, and potash four cents per pound. Therefore, the actual money value of the nitrogen removed from the soil by an acre of wheat is \$7.65; of phosphoric acid, \$1.61, and of potash, \$1.20, making a total loss of \$10.46 per acre per year. If the farmer raises twenty acres of wheat per year for twenty-five years the loss will be \$5,230.

Each acre of oats consumes fifty pounds of nitrogen, twenty pounds of phosphoric acid and forty pounds of potash. Therefore, the market value of the elements consumed is \$8.50 worth of nitrogen, \$1.40 worth of phosphoric acid and \$1.40 worth of potash, making a total of \$11.30 worth of fertility per acre that is lost through the crop.

Do You Lose or Win?

In the same way an acre of corn will take from the soil \$18.50 worth of fertility, provided both the grain and fodder are removed. If you have fifty acres in corn, \$925 worth of fertility is removed each year. In twenty years you will have taken out \$18,500 worth of the elements necessary to produce a good crop. In twenty years 50 acres of tobacco will remove \$18,000 worth of the soil's plant-food; in the same time fifty acres of cotton will consume about \$10,000 worth, and barley will use over \$10,000 worth.

Should you raise fifty acres of wheat, fifty acres of oats and fifty acres of corn for twenty years on your farm, the money value of the elements removed from the soil will be over \$40,000. Is it any wonder, then, that the farms begin to wear out, when you fail to return those elements to the soil which are necessary to produce a crop?

Of course there are other elements in the soil besides nitrogen, phosphoric acid and potash that are necessary to produce good crops, but the farmer does not have very much control over them. These elements, among which are carbon, oxygen and hydrogen, are all taken from the air. Iron, magnesia and sulphur are present in the soil in sufficient quantities so that the farmer need not be concerned about them. Lime is considered essential, but there are few of our Iowa soils that require it.

There are enough cranks to turn the world upside down, if they didn't all turn differently

Crops and Soils

The Harvest

(As the Harvest-Hand Sees It)
By Berton Braley

IT'S ALL right for poets to talk about
The "beautiful harvest of grain,"
But when you get out and you shock about
Ten million square miles it's a strain!
Perhaps there's romance to be met in it,
That's something I wouldn't deny;
But I've found only headache and sweat
in it.
And Gee! hut a fellow gets dry!

The hinder goes clacking in front of you,
The sun's beating down on your neck,
And the boss is demanding this stunt of
you:

"Keep up with the binder, by heck!"
You shock through the ages of history,
For thousands of years do you shock;



Yet you find, by some magic or mystery,
You've worked just two hours by the
clock!

You eat, but the food isn't filling you;
You drink, hut the water ain't wet;
Your hack and your shoulders are killing
you.

You swim in an ocean of sweat;
The glamour the poets may give to it
Ain't seen by this mortal, for one;
I harvest because I am driv' to it.
And you het I am glad when it's done!

Interesting Crop Figures

By W. F. Wilcox

I HAVE not been able, even after much
correspondence, to locate record yields of
grains in this country, though some of
our seed-catalogues advertise grains sup-
posed to make 300 bushels to the acre. But
these are misrepresentations. The Mont-
ana Agricultural Experiment Station has
had some large yields of grains; oats, 115
hushels per acre, of 40 pounds to the
bushel, on a nine-acre tract; spring wheat,
61 bushels; barley, 67½. The director
stated that the past year he had reports of
wheat yielding as high as 70 hushels per
acre in the State. Montana is the great
grain State of the country, its average
wheat yield being 28.9, the highest of any
State; oats, 41, being surpassed by Wash-
ington alone with 43.4; barley, 35.2 sur-
passed by Washington with 37.9; rye, 23.2,
the highest of any State, and potatoes, 157,
the highest.

If our farmers can make anything with
an average wheat yield of 13 hushels, what
might they not make with double that, the
same as some of our foreign countries? To
plow, harrow, seed, tend, harvest and
thrash an acre incurs an expense whether
the yield be 13 or 26 hushels. Then there
are taxes and the various expenses to be
met whether the yield is 13 or 26 hushels.
From wheat we turn to oats. While our
yield per acre is 29 hushels, that of Ger-
many is over 50; Austria's is practically
the same as ours; Hungary's is very little
better; France comes with 31.6 Winchester
bushels, and the United Kingdom with 44.
Our barley yield of 25.8 hushels is not so
bad in comparison with the foreign nations,
for Russia's is 14.3; Germany's, 35.3; Aus-
tria's, 26.3; Hungary's, 23.4; France's,
23.6; United Kingdom's, 35.

Our Potato Yield is Low

Rye finds the United States with an
average yield of 16 bushels; Russia, 11.5;
Germany, 25.6; Austria, 19; Hungary,
17.6; France, 17; Ireland, 37.5.

In potatoes the United States takes the
lowest average of any country. If our irri-
gation States' record average of 119
bushels were maintained throughout the
country, it would not be so had, and then it
would be low in comparison with the
foreign countries. But our average drops
down to 84 bushels, while Russia has 100;
Germany, 200; Austria, 151; Hungary,
118.7; France, 133.8; United Kingdom,
193.8. Big yields of potatoes are very
common in some of those old countries.

Little Jerry Moore of South Carolina
can give the American farmer pointers on
corn-growing. This land produced 228¾
bushels on an acre which netted him
\$130.70. Somewhat different from \$9.35,
the average farm value per acre of corn.

The possibilities of an acre! Who has
ever discovered just what an acre of soil
will produce? There seems to be a large
field for the American farmers to work in
before they realize the maximum. One
thing is sure, we must cut down our big
farms and ranches; divide them into
smaller tracts. It is a common saying in
this irrigation country that a man can
make more money in the cultivation of
ten acres than he can from twenty acres,
and more from twenty acres than he can
from thirty acres. And it has been
demonstrated time and again.

Rotate and Investigate

In the Dakotas and that grain section
sometimes a dozen or more sections are
farmed by one party. They begin in the
spring and plow and sow wheat as long as
they can, and when it gets late, they simply
drill in the seed in the stubble on the rest
of the ground without plowing, and it is no
wonder that we have such a low average of
wheat. Slipshod methods are to blame.
Plow deep. That's the secret. Our scien-
tific farmers of the arid West have learned
this. Not long ago I read of a man some-
where in this arid region who had grown
wheat on one tract for fifteen or twenty
years and each year with an advanced
yield; the secret was deep plowing;
he kept plowing deeper and deeper.
It is not so much manure and fertilizer,
though these will help. Yet that big
yield of potatoes in Wyoming was on
soil that had never been fertilized in any
way. Rotation of crops. That's the thing.
Rotate, study, investigate. Sow alfalfa,
let it thrive for a few years, sending its
roots down twenty, thirty, forty, fifty
feet—no one knows how far they will go.
Then break it up. It requires hard work,
but note the results. Better than all the
fertilizer you could pile onto the land.

In the Sau Luis Valley, in Colorado, they
grow section after section of field-peas for
the fattening of sheep and hogs. These,
alternating with potatoes and wheat, main-
tain the fertility.

The better the corn grows, the greater
delight the farmer takes in pulling its ears.

Granaries While You Wait

By Frederick G. Logsdon



It's easily carried

THE canvas
granary, which
is designed to
eliminate the use
of jute bags now
used in handling
grain in many
Western States, is
a circular canvas
granary with an
opening in the top
through which the
grain is introduced
directly from the
wagon elevator or
the separator, and
with a small open-
ing in the bottom
through which the
grain is emptied
into tight wagon-
beds for trans-
portation to mar-
ket.

In order to support the canvas before
the grain is put into it, pieces of one-hy-
two common lumher, together with ordi-
nary clothes-line for guy ropes, are used.

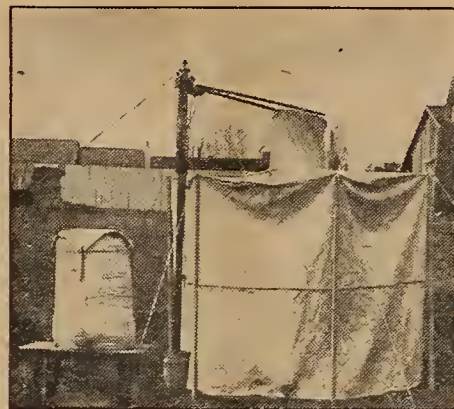
The granaries are made in sizes having
a capacity of from 100 to 1,500 hushels.



Drawing grain out of a ten-bushel granary

The base on which the granary rests must
be high enough above the ground so that
the grain may be drawn off into the wagon
by gravity, and must be built according
to the capacity of the granary to be sup-
ported. Ordinary saw-horses with two-hy-
four or two-by-six sills across them will
support the granary of 100 hushels ca-

capacity. I know that this device will save the
farmer from three and one-half cents to
five cents per hushel, the expense of pro-
viding jute bags; that it will eliminate the
services of two men in the thrashing, and



Common lumber and clothes-line support
the empty canvas

that it will encourage the handling of grain
in bulk. This practically solves the ques-
tion of handling the grain in bulk in the
Western States.

To keep cabbages in fine shape until early
spring, we securely wrap each head in
paper, or put in paper sacks. We often
keep them thus until April. Place in a
dry place in the cellar.

Two thirds of the nitrogen of the solid
manure may be easily lost in from four to
six months by heating and leaching.
Throwing the manure out the barn-door
isn't saving it.

Mole or Seal

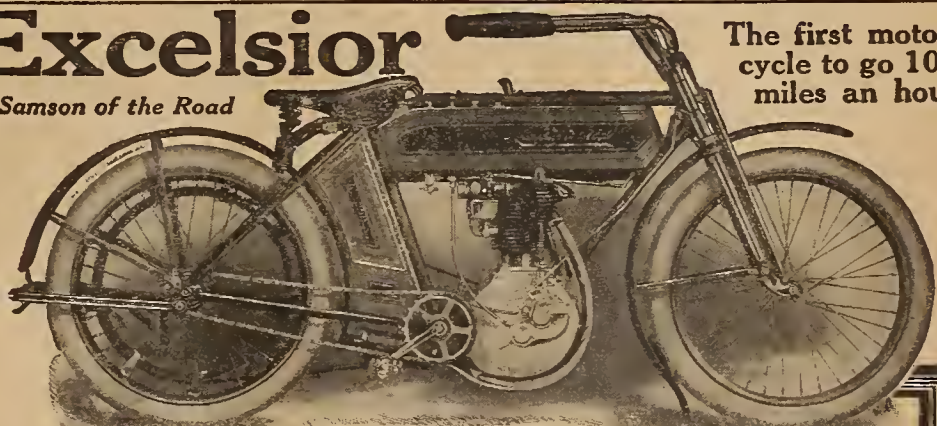
By Harry N. Holmes

NOW that sealing is so restricted, there
will be very few genuine sealskins on
the market, hut plenty of so-called seal-
skins. Many of these imitations, hand-
some and durable too, will be moleskins.
Already Holland does a heavy trade in
these diminutive pelts, exporting them to
the value of several hundred thousand dol-
lars a year. Hunters get ten to fifteen
cents for each skin, and they are fast ex-
terminating the animal. Farmers consider
moles a pest because of their disastrous
burrowing under plants, but scientists now
credit moles with more good than harm
because of the vermin they destroy.

Excelsior

-Samson of the Road

The first motor-
cycle to go 100
miles an hour



Only \$150 for this Excelsior Auto-Cycle

Never before has a motorcycle of Excelsior quality been sold for
anything like this price. Only a few of these specially priced machines are left.
They are newly built and full Excelsior quality in every way.
Differ from our models costing almost twice as much in a few
minor points. They were made for orders received late last
season but held over because of non-arrival of certain materials.

Write quick for folder

describing these bargain Excelsiors. The control of motor is
centered in the handle bars. The single cylinder motor is the
most powerful of its type ever put in a motorcycle. Same stock
design as used in Excelsior record-breakers—see panel at right.
Has the free engine clutch, same as in all Excelsior motor-
cycles. Entire frame construction re-inforced. Write for spe-
cial folder—get the facts—then get busy if you want a motor-
cycle with a famous name and wonderful speed for only \$150.

Excelsior Motor Mfg. & Supply Co.

Department C

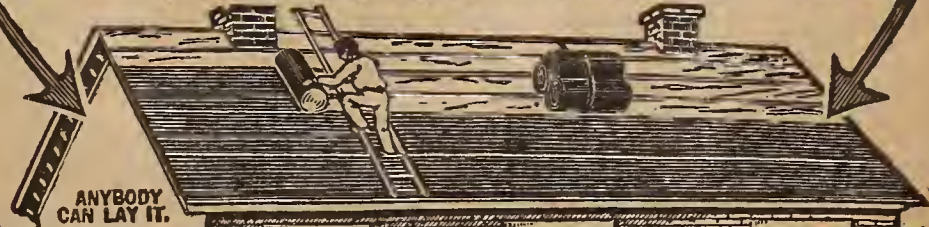
Chicago, Illinois

EXCELSIOR World's Records

1 mile.....	36 sec. flat
2 miles.....	1.12 4-5
3 miles.....	1.50 3-5
4 miles.....	2.29 4-5
5 miles.....	3.07 3-5
10 miles.....	6.18
30 miles.....	20.18 1-5
50 miles.....	33.55 1-5
75 miles.....	50.55 2-5
100 miles.....	68.01 4-5

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Wholesale and Retail Profit Saved! FREIGHT PAID!



ANYBODY
CAN LAY IT.

RUBBER ROOFING

1-Ply, 35 lb. 108 sq. ft., \$1.10 per roll.
2-Ply, 45 lb. 108 sq. ft., \$1.30 per roll.
3-Ply, 55 lb. 108 sq. ft., \$1.50 per roll.

Warranted For 15 Years. Terms Cash. These Special Prices Only
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FREIGHT PAID to any station east of Rocky Mountains except Tex., Okla., Colo., N.D., S.D., Wyo., Mont.,
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FIRST-CLASS IN EVERY RESPECT. NO SECONDS, REMNANTS OR MILL ENDS.

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Dept. 396, 200 5th Avenue, New York City.

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Complete Outfit Now Ready for You

THIS is an unrivaled opportunity for every ener-
getic boy who is interested in the great Ameri-
can game of baseball. You can win this complete
outfit with equipment for a whole team without
spending one cent of your money. The outfit
consists of the following articles:

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2. One heavily padded catcher's glove
3. One finger glove suitable for fielders or basemen
4. One catcher's mask, made of heavily woven wire
5. One Junior League baseball
6. One cap—Big League pattern
7. One fancy belt

Surely you want this great seven-piece outfit.
Then send me your name and address right away,
and I will tell you how you can win it. A letter
or post-card will do. Remember, every article in
this outfit is backed by the guarantee of one of the
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is an unusual offer. You should send me your
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Farm and Fireside, Springfield, Ohio

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Inserted between outer casing and inner tube. Ready
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\$3.50; 4 1/2 and 5 x 34, 35, 36"—\$4.00, \$4.50. Write for booklet.
John L. G. Dykes Co. Dept. 19 Chicago

Kerosene Engine

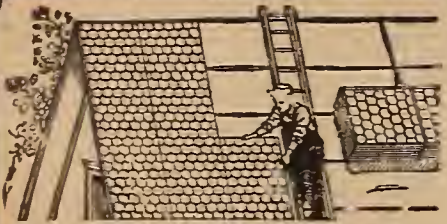
The SANDOW Stationary Engine runs on kero-
sene or gasoline. Starts without cranking—
throttle governed—hopper cooled—speed con-
trolled while running—no cams—no valves
—no gears—no sprockets—only three mov-
ing parts—portable—light weight—great
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In this 20th Century AGE OF STEEL, wood shingles are fast disappearing. They cost too much; they rot out too quickly; too much trouble to put on; too apt to catch fire. That's why 100,000 men have come to put these beautiful Edwards STEEL Shingles on their buildings.

Edwards Steel Shingles never burn nor rot. Come in big clusters of 100 or more, which makes them ten times as easy to put on as wood shingles. Each Edwards STEEL Shingle is dipped in molten zinc AFTER it is cut. No raw or exposed edges. No chance for rust ever to get a foothold. And the patented Edwards Interlocking Device, which allows for expansion and contraction, gives PERMANENTLY water-tight joints.

Edwards STEEL Shingles



Get Prices As to prices, these STEEL Shingles are far below wood. For we sell direct from factory to user and pay the freight ourselves. Just get our latest Steel Shingle Books and Prepaid Factory Prices. Then compare. Then see if you can afford common wood shingles when you can buy genuine Edwards STEEL Shingles at these prices. Give dimensions of your roof if possible, so we can quote price on entire job. Send postal today and our Catalog 858 and Prices will reach you by return mail.

The Edwards Manufacturing Company
808-858 Lock Street, Cincinnati, Ohio
Largest Makers of Sheet Metal Products in the World.

Farm Lands

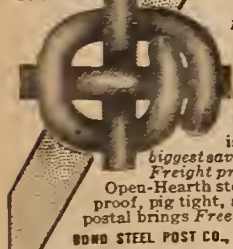
that will pay you big dividends in a short time can be bought at reasonable prices now. Irrigated and Non-Irrigated Lands suitable for General Farming, Fruit Raising, Potato Raising, Dairying, Stock Raising, etc. Close to markets. Located in good communities near the lines of the Union Pacific Railroad. Write to me and I will send you complete authentic information regarding these lands.

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Colonization and Industrial Agent, Union Pacific Railroad Co., Room 208, Union Pacific Building

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of intelligence and reliability in your locality to act as our subscription representative. Substantial remuneration to the right party. Careful training. Permanent business. Good opportunity for promotion.

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Save \$50 to \$300

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WILLIAM GALLOWAY COMPANY,
395 Galloway Station, Waterloo, Iowa

Farm Notes

The Rural Carrier's Plight

By William J. Burtcher

ONE little parcel at the very first stop! Carrier examines it and goes on at a trot.

Wonders how such a law came to be pulled through! Here's a lot of butter—his bundles now are two.

This job's not as easy as it used to be—Gets a box of eggs, and his parcels number three.

Three little parcels—he hopes there'll be no more! Is handed a dressed chicken—now there are four.

Four little parcels—just watch the business thrive. Here comes a roll of clothing—and that makes five.

His troubles are a plenty, but his blessings come to nine. Another pound of butter! That makes him six.

Six little parcels—he'll likely get in late. Here are two at once—the number totals eight.

Eight little parcels—he surely will resign! Gets a can of sauer kraut—that gives him nine.

Nine little parcels—what'll he do for room? Here's a farmer's wife sending back a broom.

Parcel post is with us—hardly can seem true.

But how about the carrier? Has that occurred to you?

Better Than a Bell

By V. S. Leland



TO MAKE a handy signal, take three-by-six plank as long as you want the mast. Shape as shown, and saw down twenty inches for the arms to fit into. Make arms, as shown, out of heavy galvanized or sheet iron, sixteen inches long. A lightning-rod brace makes a good brace for the pole. Paint arms a bright color, and this can be plainly seen a mile off under average conditions. This saves many steps, by bringing the men out of the field, when a bell is of no service, on account of wind.

Buying a "Pig in a Poke"

By John Daniel

IT IS a matter of common knowledge that farmers are not inclined to accept the offer of the experiment stations to test seeds and fertilizers for them in order to protect them from poor goods. This is largely due to the idea that it is expensive, and partly to the common belief that every man should be able to protect himself from getting "stuck."

But our experience during the past year has proven to us that we cannot afford to do without the help of our stations, especially the chemical and seed-testing laboratories.

Our neighbors for some years past have depended largely on unleached Canada hard-wood ashes as the principal fertilizer to be used when seeding down. But our belief had been that the goods were not what they were claimed to be and were not worth the money asked for them. We therefore have never used them, and an analysis of these ashes made by the station during the past year has amply sustained us.

Our Suspicions Were Upheld

One of our neighbors furnished us with a sample of his supply, and for comparison a sample of dry ashes taken from his kitchen-stove where he had burned oak wood. The latter was considered to be a fair type of genuine unleached hard-wood ashes.

Both samples were sent to the station and were analyzed, and the chemist's results are both interesting and instructive. They are as follows:

	Home-burned	Canadian
Moisture	83	2.28
Phosphoric Acid	4.99	.79
Potassium Oxide	13.99	2.40
Calcium Oxide	33.60	13.64

It is assumed that both samples, if pure, would analyze somewhat the same, as the

Canada ashes were said to be unleached hard wood. The actual difference proved one or all of several things—the ashes were leached or adulterated, or made from an inferior soft wood.

But there was no redress for the buyers, for the concern selling them positively refused to give any guarantee as to quality or purity.

Based on the then current prices for the plant-food contained in the ashes, the home-made were worth nearly twenty dollars per ton, while the Canada sample showed a value of about five dollars. As a matter of actual practice, the first were wasted, while the second cost thirteen dollars per ton at our siding, with the cost of carting extra.

Now would it not have been profitable for those desiring ashes to have obtained samples of the goods from the dealers and had them analyzed? From the analysis they could easily have calculated values and compared them with actual cost before buying.

One example from our own operations will show the same benefit from testing. We had occasion to buy about five tons of tankage, and obtained fair samples of seven per cent. goods from two firms, both lots offered at the same price.

Upon analysis, one sample showed 6.75 per cent. nitrogen, while the other showed 7.79 per cent.

The difference looks rather small at first, but in five tons the second lot would furnish 115 pounds more of nitrogen than the first, and at no greater cost per ton. The value of this 115 pounds of nitrogen was worth many times the cost of having the analysis made. Both firms were of equally good standing, and without the analysis we would have been as likely to buy the poorer goods as the better.

Save Money by Getting Your Money's Worth

Samples of grass and clover seed obtained from a number of seed-houses were tested for us and showed a wide range of purity and germination. By using the figures obtained in this way we were again able to save money, for the best seeds were by no means the highest in price, although it is admitted that this may not be a general rule. We were also able to save on the amount of seed used per acre, as we needed to make no allowance for unknown quality, knowing, as we did, what percentage we might reasonably expect to germinate.

This work is done free of charge in my State (Massachusetts), though in some States a nominal charge is made to prevent the laboratory being swamped by samples sent in merely to satisfy some idle curiosity.

If farmers would but avail themselves of the opportunity they would save themselves considerable disappointment, and even serious financial loss from buying blindly.

"Let Go" for Fun

By Pearle W. McCowan

WHAT are you doing with your days? Are you getting up morning after morning at four-thirty or earlier and working steadily on from then until eight-thirty or nine in the evening, and then dropping heavily into your bed, too tired to even think?

Do you find time for reading only your farm paper, and that on Sundays, with perhaps just a smattering of the dailies? Are you too busy to take time for an excursion, a picnic, a farmers' club or a ball-game; in short, for recreation of any sort?

If this is so stop a moment and look around you. Who are the prosperous persons in your neighborhood? Remember, prosperous does not necessarily mean the persons who are hoarding up wealth. Webster defines prosperity as success, and success is not measured alone by money. There is a vast difference between making a living and making a life.

Honestly now, aren't those people who quit field work by five o'clock or earlier, and who plan to get their chores out of the way by seven, getting along just as well financially as you? And, besides, they have their evenings for rest and recreation, for reading and visiting, and for learning to know and enjoy the members of their own family and neighborhood better.

It's very true that the summer is the farmer's busy season, and few can find time to get away during its strenuous length for more than a day or two at a time. But think about it now. Don't the man who runs off on an excursion once or twice during the summer, or packs his family up and goes to a near-by lake or river for a good day's fishing, harvest just as many and as good beans at the end of the season as you who were too busy for that sort of thing?

Would you be any poorer in dollars and cents at the end of the season if you squandered a day each month and an hour or two each day in simply enjoying yourself and your family? Would you?

Well, granted that you have tried the plan, and that you were poorer—a little,—

did you not after all get an honest equivalent for the money and time that you called lost? Did you not go back to your work with a fresher spirit and renewed courage? Didn't your farm look good to you when you had come back after a day's outing, though perhaps but a few hours earlier you had been groaning about its everlasting drudgery?

Truly it is not all of life to live. The successful man, in the truest sense of the word, is he who knows not only how to work, but how to "let go" once in a while.

Holds the Bag

By Alvin Unverrich



NO BOTTOM

THIS labor-saving device for holding bags when the bags are being filled is very convenient. The drawing suggests the entire scheme. A bottomless pail is used, nails being so bent in the bot-

tom that the bag can be fastened over them after the pail has been placed in the frame built for it. The lumber I use is one-by-four stuff; the lengths vary with the conditions under which the bag-holder is expected to work.

To Clean Machinery

By Edmund Dietz

IN OILING machinery it often happens that dirt gets into the oil-holes in a solid mass so that the oil cannot reach the journals. Especially is this true of disk harrows, disk drills, etc. Heretofore I have had to take the machine apart and punch the dirt out, but now I take a piece of baling-wire and wrap it around a thin wire nail, corkscrew fashion, leaving a stem and handle with which to manipulate it. In cleaning out the oil-hole insert the corkscrew in the stopped-up hole, give it a few turns, and out comes the offending dirt. Then by inserting the cleaner for a moment in a little bottle of coal-oil carried for that purpose and striking it against a solid body, that, too, will be cleaned and ready for use again.

The Chipping Sparrow

By H. W. Weisgerber

WE DIDN'T have any cats; neither had our next-door neighbors. And that accounts for this little story. There was a driveway between our house and the one on our left, and here on the hard, weedless clay mother "Chippie" used to bring her brood of five or six birdies morning after morning. What could they find on such barren ground? Well, such locations are the best places in which to find dandelion seeds. They pick up a seed, break off the pappus, then swallow it. From here, too, they would get onto the lawn and then into the garden, where they would pick up small bugs and worms, as well as various weed-seeds. I used to stand and watch them, and often they would come within a few feet of where I stood, and I could hear their "bird-talk" of low, sweet notes that they always uttered, until something would frighten them, when with a note of alarm from the mother, they would all fly to the



nearest bush or tree for safety. Then when quiet had been restored they would fly earthward again and go to feeding.

The cat is its worst enemy. Then, too, many of them are taken for English sparrows and are shot by thoughtless men and boys who think that they are aiding nature by killing the English sparrow, and in so doing they kill nearly as many of our useful, native sparrows, because they have not learned to distinguish between an English, a song, chipping, vesper or any of our numerous other useful species of sparrows.

"Chippy" builds the well-known horse-hair-lined nest in the vines on our porches or in the grape-arbor. Besides this almost universal habit, they can be easily identified as being one of the smallest of our doorway sparrows. They are a dirty white underneath and on the breast, and have a light-colored chestnut crown.

Poultry-Raising

The Get-Rich-Quick Hen

By Henry W. Hull

A YEAR ago last fall a friend sent my mother a note saying he had left a hen for her in a certain place he was leaving. We were in a mountain four miles from where he left this hen. The hen was there three days without food or water in a sack. She was meant to be killed and eaten. We were at a gold-mine and had no chickens. Mother had been sick. We thought the chicken would do her good.

Mother, knowing what the hen had been through, thought to keep her a while to get her over her sufferings and to fatten her up a little.

Madam Hen went to laying and laid from five to six eggs per week in October, and all winter at about five and one-half eggs per week. Eggs were at the sixty-cent mark most of the winter. Eggs average here about forty cents the year around.

Now I have the habit of analyzing things with the following in view: Is the investment good or bad, and at what figure would a money expert capitalize this kind of an investment? Would it not go this way?

Cost of plant (the hen).....\$0.75
Cost of feed and care per hen... 1.00
Cost of buildings per hen..... .50

Depreciation of hen about eleven per cent., as after laying three years she will still bring fifty cents. Good markets for all she could ordinarily produce at above prices. We must charge ten per cent. for depreciation of buildings and upkeep, so, per year, it would be something like this:

Depreciation of hen.....\$0.0833
Cost of feed and care..... 1.00
Depreciation of building per hen 0.05
Interest on investment at 7% on total investment of \$2.25 per hen1575
Total per year.....\$1.2908

Please remember that this would be about the way the promoter would handle it, but we will not follow the wild-catters.

Conservatively, we would get 216, or eighteen dozen eggs per hen per year, for we will have experts in all departments. We can, by handling nothing but strictly fresh eggs, get fifty or fifty-five cents per dozen here in the mountains, but we will be conservative and call it forty cents per dozen. Remember, your hen begins to yield revenue when purchased, unless she is raised, and we can easily make a profit on raising her at the seventy-five cents, the cost allowed.

We have not charged ourselves cost of marketing because it is very small, and we have the fertilizer that will pay us enough to fully repay all marketing costs and leave a margin for profit. Thus our income:

18 dozen eggs per hen, at 40c.\$7.20
Total cost per hen..... 1.2908
Profit per hen.....\$5.9092

Investors will be satisfied with a twenty-per-cent.-investment possibility, so we will water our stock accordingly.

Now, as our profit is about 470 per cent., we will add about 450 per cent. of water to our stock, or charge the dear public \$5.90 or thereabouts for each hen, for you know that if we promise them 470 per cent. they will think our statements are too good to be true and won't buy our stock, and I am afraid that even twenty per cent. will be too much, as they all know that a twenty-per-cent. investment is unsafe.

I have been through the mill. I have floated hundreds of schemes. I can truthfully say that the above is conservative as compared with a large part of stock investments. To actually capitalize a 220-egg hen at three dollars or four dollars is really commonplace business, speaking with present-day business methods in mind.

No Mites Here

By Mrs. Frank Swanson



BY MAKING roosts similar to the illustration you can easily rid your hen-house of mites, as it is impossible for the mites to go from the hens and roosts into the walls. The roosts are short enough so they do not touch either end of the house. They are nailed together to make them firm, and are hung from hooks with strong, stiff wire. They can easily be taken out, cleaned and whitewashed. Usually, after a few thorough cleanings, you are rid of the pests.

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Young Downy Travelers

By A. E. Vandervort

A GREAT many people are surprised to hear that chicks can be safely sent by express from two hundred to one thousand or more miles and reach their destination alive and in good condition before they are fairly dried off. But such is the case, and to-day the shipping of day-old chicks has become a leading branch of the poultry business. Thousands and thousands of the little chaps are shipped all over the world at most all times of the year.

Some people do not know that a chick, which escapes from the shell in which it has been a prisoner for three weeks, will stand a lot of abuse and live, provided you are not too harsh with it. Nature has provided a supply of nourishment for the little fellow in the form of the yolk of the egg from which it is hatched. As the chick comes from the shell with the undigested yolk yet in its body, it furnishes all the food that the chick needs for the first forty-eight hours of its life. When the little chicks are packed away for several hours during shipment they continue to gain strength and are much better off than if they were exposed to the sudden changes of running in and out from the hover of the brooder. And these are the reasons why so many are safely sent and reach their destination in good condition.

Ship Them in Baskets

After the chicks are hatched and nicely dried off, they are ready for shipment. I have found baskets to be excellent for shipping the little fellows in small lots of from twelve to fifty. These baskets should be strong and low, about four inches is the proper height. I line the basket well with burlap, and cut clover and chaff is placed in the bottom. The chicks are then put in and a cover of hurlap sewed over the top of the basket. A label, LIVE CHICKS, is sewed on in a conspicuous place, and they are ready for shipment. I like baskets best, for they are light and easily handled.

If you prefer to ship in boxes make them of light material and four inches high, and they should be lined the way mentioned for the baskets. If any great number are to be shipped, the chicks can be placed in boxes containing several decks. Don't feed the chicks anything for the journey, as it is injurious to them.

The shipping of day-old chicks has come to stay. Buying young chicks will save you a lot of trouble and money too. Don't expect to have your chicks shipped the day after you order them.

A Leading Woman's Magazine

The Woman's World is without doubt the best magazine ever printed for the money; in fact, is superior to many magazines selling for more than this. It is not only attractive in appearance, but its columns are full of the choicest literature that money can buy. The contents of the Woman's World are selected with a view to entertaining and educating its readers. It is a big value at a low price. Every farmer in the country should take this opportunity of obtaining the Woman's World without cost in connection with FARM AND FIRESIDE.

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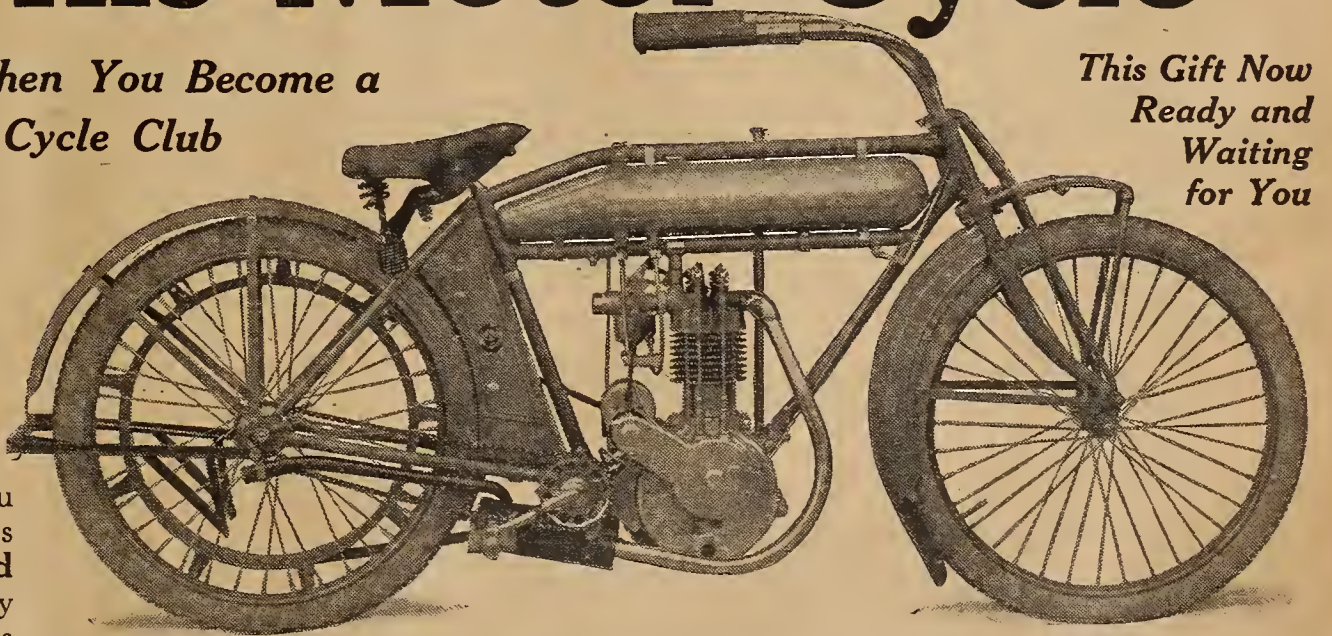
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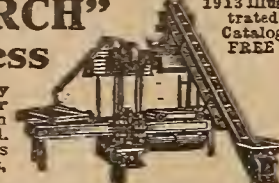
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Garden and Orchard

Tomatoes from Cuttings

By H. F. Grinstead

WHERE one wishes to grow tomatoes in a hothouse or in pots for home use, it is more satisfactory to make cuttings from mature plants late in August than to grow plants from seed. Tomato-slips are very easily rooted. Cut from vigorous stalks in pieces four inches long, and plant these in a bed of good soil. When the roots are an inch long remove the plants from the bed to four-inch pots. Whether for the window-sill or the more ample greenhouse, the plants should remain in these small pots till buds have developed, when they may be transplanted to the bench or into larger pots. Cuttings handled in this way will make stockier plants, and will mature fruit much quicker than plants grown from seed. Cuttings may be secured from tomato-plants at any time during the growing season, or until the vines are killed by frost.

Orchard Dentistry

By H. F. Grinstead

WHETHER it is a shade or fruit tree, a little judicious treatment of a cavity will often save the tree for many years of usefulness. Whether it be a branch or the main trunk, the treatment will be the same. First, all decayed or apparently decaying or diseased wood should be removed with a sharp chisel or knife until perfectly sound heart-wood is exposed. Immediately wash the wound with a solution of copper sulphate, in the proportion of one pound of sulphate to five gallons of water.

As soon as this has been done, fill the cavity with a thin mortar made by mixing one part of cement with three parts of clean sand. When it has become stiff but not hard, face it on the outside with thin cement, using a trowel to smooth the cement over all parts that have become injured. If a cavity or split should occur near a fork of the tree, it would be an additional safeguard to put a long bolt through both branches so as to hold them together. When the cement hardens in a cavity, the trunk will be perfectly solid, and decay will be arrested.

The San José Scale Itself

By Anna B. Comstock

IF WE consider the San José scale from its own standpoint we shall be obliged to concede that it is a great success, despite the vast army of fruit-growers who are always battling with it. In fact, it would be far easier for the fruit-growers to subdue an incursion of elephants than to conquer this tiny foe. And for this reason it may prove a matter of interest to observe somewhat more closely the tactics of this minute enemy of the fruit-trees.

We will begin our study with the young scale insects just pushed out into the world from their mother's tent. They are tiny, orange-yellow creatures, each provided with a pair of antennae, two perfectly good eyes, a mouth in the form of a long sucking-tube and with three pairs of very active and efficient legs, on which each scampers around on the bark of the tree.

Settling for life, in the case of the young scale-bugs, consists in finding an unoccupied place where it can thrust its sucking-tube down through the bark and into the living cells of the tree, whence it can draw the juices for its food. It is no easy matter to push this tiny, thread-like tube through the tough bark of the tree, and the process often requires so much time that we should admire the patience of this little creature and its perseverance in the effort, for it always keeps on pushing until finally the mouth-tube is in up to the hilt. Then, in utter satisfaction, the little creature folds its antennae and legs beneath its body, which soon contracts and assumes a circular form.

Just How They Look and Act

But it is a soft and delicate body and unless protected would soon be injured; so straightway the insect begins the making of its tent, and surely no other tent was ever so wonderfully woven. All over the tiny body are pores through which waxy threads are pushed out, threads finer than a spider's silk, and which soon cover the insect in a downy, white coverlet. After a little the waxy threads melt together and form a tent with a raised pole at the center, as if there were a tent-pole holding it up; but through a connection with the insect's body this tent stays well in place without pole or pegs to hold it.

Up to this period the males and females are just alike; but, after feeding beneath their tents, they are obliged to grow, insect fashion, which consists in shedding their skeleton skins, so as to give room for the expansion of their bodies. When this first skin comes off the two sexes have quite a different appearance. Both lose their legs and antennae, for these organs are now quite useless, since the insects are settled for life, and, in fact, would be in the way. The male retains his eyes. They are large and purple, and the general form of his body is elongate. The female is a dumpy creature, and she loses her eyes as well as her legs and antennae; her body is simply a circular sac, and all that she has left of her organs is her mouth, which now seems to be situated pretty nearly in the center of the lower surface of her body, and this thread-like tubular mouth (m) of hers is three times as long as the diameter of her body. It is a tube with four threads running the length of it, and these threads are diabolical little prods that push out into the plant-tissue to set loose the juices which are sucked up into the insect's body through the tube.



The female is a dumpy creature

When she is about twenty days old she again sheds her skin, which splits conveniently around the edge of her body, the upper half forming a lining to her tent, and the lower half a very thin mattress on which she rests.

When the male is about twenty days old he changes form and becomes a true pupa; and now by some mysterious means he has recovered his legs and antennae and has wing-pads on his back. In less than a week the pupa-skin is shed, and Mr. Scale-Bug backs out of his tent, stretches his legs and his wings and looks about him.

Never was there a wooer who has less use for eyes to view the charms of his mate than this insect, for he never gets a glimpse of her in her tent. He marries "un-sight, unseen."

However, he does not have to confront the possibility of an unhappy marriage, for he promptly dies during his honeymoon. Looked at through the microscope he is an elegant little fellow with two large wings, and just behind them on each side is a little hook which fits into a socket on the hind edge of the wing, and thus helps him to manage his flight. And on his back is a shield, beautiful as that worn by any knight in battle array.

Now we are prepared to understand the tactics of the scale-bug army. The female is really the warrior, and she fights for new territory by producing great numbers of young that push out from under her tent and scatter over the tree. She is a very lazy scale-bug indeed if she does not send out at least four hundred youngsters to forage on the tree, and since half of these are likely to be females they, in turn, will produce other scale-bugs in equal ratio.

And now we can see why the horticulturists might better fight elephants than these little rascally scale-bug mothers, which let loose on his trees billions of other little rascals to suck up the sap which the tree needs and thus ruin the fruit.

GARDENING

BY T. GREINER

What About Endive?

A READER asks about endive. It is a good salad plant. It will bear up under the disadvantages of heat and drought better than lettuce. It is popular among people of foreign birth or parentage, but not much grown or used by pedigreed Americans. It is well worth trying by every home gardener. Seed may be sown as late as August or plants (often purchasable in our city markets or from professional gardeners) set as late as September. Should be grown quickly to be nice and tender. Make the soil rich. Muck is especially suitable, but any good garden land will do. Lettuce is now so much grown on muck lands, and under irrigation, and found in our markets in greatest abundance almost at any time, even in the hottest summer and fall weather, that the demand for endive in our markets is likely to remain limited; but the average home gardener cannot always rely on having good lettuce at those unfavorable times, and a bed of endive will therefore help him out. The plants can stand a foot apart each way or even slightly more crowded, but should be kept well cultivated or hoed. No use planting it on poor soil that is deficient in humus or naturally dry and exposed.

The Plant is Relished

The plant has a somewhat bitter taste, but the flavor becomes pleasant when the leaves or hearts are blanched. When the plant has become well developed, it may be blanched by tying the outer leaves over the heart with bast, or by placing a big flower-pot over it, or by setting a board, say ten inches wide, up on edge from each side of the row, in the shape of an inverted V, in somewhat the same way as for celery, except that we leave no opening on top, and try to exclude all light from the plants. In any of these ways we can blanch the plants nicely in three or four weeks, so that the inner leaves have a beautiful whitish or creamy color, are crisp and brittle and of pleasant flavor. The plants may also be blanched by hilling or earthing up, like celery.

If endive is to be grown and stored for winter use (and it may be had until almost mid-winter) sow the seed of Green Curled in August, or set the plants early in September, and take the full-grown but not blanched plants up with a chunk of earth adhering to the roots, and store them in a root-cellar as you would celery. If kept dark they will soon blanch, and must then be used. Possibly the young endive-leaves may do for greens. I have never tried them that way. But endive is good even in other ways. Why not plant some?

Water for the Garden

A dry spell at some time during the summer is the rule rather than the exception with us. Our garden crops are almost every year reduced considerably by lack of water during the growing season, sometimes giving us only one half, one third or even one quarter of the yield we could easily secure by using water freely and judiciously. Irrigation is the pressing problem for the gardener. Water insures the big crops of lettuce, celery, beets, onions and other vegetables. Where water under a good pressure is available for the garden, as from city or village waterworks, or from a private plant, the problem is of easy solution. At Guelph, on the grounds of the Ontario Agricultural College, the other day, I saw lines of common galvanized pipe, one-inch and three-quarter-inch size, laid a few feet above the surface of ground across the four-acre garden. The supply-pipe is laid underground through the center of the patch, across the direction of the overground pipes, and the water, under a pressure of sixty pounds, can be turned into the pipes to the right and left. The uzzles, on the Skinner system, are placed four feet apart in the pipes, and throw the water in tiny streams that finally spread, rain-like, over a strip twenty-five feet wide to one side and, after turning to the other side, from each pipe line. The station horticulturist tells me that they apply the water in this way on all garden crops, with very satisfactory results.

This method of irrigation seems to me far ahead of any other that I have ever seen. There are other methods that may be used to advantage under certain conditions, such as conducting water in ditches or furrows between rows of vegetables, or distribute the water by seepage from home-made hose (made from strips of canvas or duck), or from lines of common tile laid just under the plow line. Most of these systems are rather clumsy and not to be compared with the Skinner or some similar system, even such as using common lawn-sprinklers. More, however, will be said about these other systems later.

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The Midsummer Market Outlook

Are Prices Stationary?

By J. Pickering Ross
THE general feeling in the sheep-market appears to have settled down into a "state of beatitude," or, in more secular phrase, expert opinion tends to the belief that we may look for fewer sensational jumps up and down in prices, and that they will remain much as at present for some time to come. These may be taken as about as follows: Top lambs, \$8.25 to \$8.75; bulk, \$7.25 to \$8; yearlings (finished), \$6 to \$7; feeders, \$5 to \$5.75; choice wethers, \$4.50 to \$5.50; good ewes, \$4.25 to \$5. Feeders of all kinds have been scarce, but are likely soon to come in more plentifully from the West. The great run of southern lambs is about over; natives are coming in slowly, and western shipments are not expected to be excessive. Eastern demand is good, prices in Buffalo ranging higher than in western markets.

The wool-market has been quiet during the past month, but there has been no falling off in accepted prices. Growers nearly everywhere have been standing out for two to three cents' raise, while dealers seem to be unable to see their way to paying it. This condition is caused somewhat by the fact that manufacturers, uncertain as to how the tariff will be settled, are buying only to fill immediate needs. London and other foreign markets are active, but with a slight advantage to buyers.

Reasons have already been given in these columns for the belief that the removal of the tariff from dressed meats would not necessarily affect the sheep-market as disastrously as has been feared. As regards wool, the panic which developed among sheepmen when, under the Cleveland administration, wool was admitted free, causing many to part with their flocks at ruinous prices, owed much of its existence to the fact that millions of sheep were raised for their wool only. Now that the popularity of mutton and lamb has directed attention to the raising of the "mutton-and-wool" (Down) breeds, the reasons for anything approaching to a panic are done away with. We can, if we will take the trouble, raise as good sheep of those breeds as can be found anywhere, for there are among us men who have invested fortunes in importing the best specimens of them, and whose flocks are ready to furnish rams and ewes of the highest types at prices which put them within the reach of anyone. The demand for this class of wool both here and abroad is getting away beyond the supply, and we ought to be able to meet any amount of competition that may be forthcoming. These tariff changes are bound to produce a certain amount of disturbance, but how great it may be allowed to become and how long to last will be largely dependent on the spirit with which our farmers and sheepmen are prepared to meet it.

Produce Cheap Beef!

By W. S. A. Smith
TO ANYONE accustomed to stock-yards it seems strange to see the paucity of stock cattle and see so many idle men among the dealers. Cattle are now being freely contracted in the range country by feeders, and this greatly shortens the supply at market points. There is every indication that high as fat cattle are the really good ones will sell higher yet. As a matter of fact, considering the price of stockers and feeders, real good cattle are not too high. No one interested in producing beef can help but wonder at the price the common cattle are bringing. They really are making more money for the feeders than the good cattle. The question naturally comes to one, "What are common cattle?" It is surprising if you buy a car of so-called good cattle how many tail-ends you find at the end of your feeding period, and it is equally a surprise if you buy common cattle how many decent cattle you get when fed out. In other words, you paid for good cattle and never got them.
 If you are contemplating buying cattle this fall to feed, even if the enterprise is not a new one for you, it will be greatly to your advantage to pay some good commission firm the regular commission for buying a good class of so-called common cattle. There is nothing so deceptive to a young feeder as color. I have seen many a short load of good Angus cattle filled out with a few dehorned black Holsteins. You can imagine how they differ in looks and quality in ninety to one hundred days' feed. The profit to the dealer was made in the few poor cattle, and the loss to the feeder was made on the same cattle. If the common cattle were bought at common prices no great harm is done, but it is the few tail-enders in a load bought at one dollar per hundredweight more than they are worth that plays havoc with profit. It's the difference between buying and selling price that

determines the profit. I saw, this last week, a car-load of stags sell for \$8.30. It set me thinking. We have a number of successful feeders who handle nothing but good cattle, but we have as many or more who are equally successful with plain or common cattle. It is seldom you find a man who feeds both. This is an age of specialists.

The public is demanding cheaper meat, and the only way they can get it is by eating poorer meat, and that's what they are going to do. I have never enjoyed feeding common cattle, but every time I think of the price of good feeders that load of stags at \$8.30 keeps popping in front of me, and I can't live on enjoyment.

Better shut your eyes to color; buy the common feeders at common prices. It's beef that's wanted. The man who can produce it the cheapest will be the winner.

Where Parcel Post Serves

By Mrs. James Lampham
WE WERE among the army of people eagerly watching for parcel post, so when one of the Cleveland dailies offered us a free advertisement we placed this one:

Apple butter and mincemeat—the kind Mother used to make. Also orders for canned fruit and jellies.

We were besieged with orders. We packed and sent samples of each at one dollar per gallon. We were all sold out before the orders ceased to come. We also had orders for hampers of fresh garden produce to be sent weekly, as soon as it was ready.

The present parcel-post law will need remodeling as to rates and pounds, but we hope for great results. We have had no complaints so far. This will get the producer and consumer in direct communication, which is a step in the right direction. There are thousands of bushels of apples, quantities of tomatoes and all garden truck within thirty miles of Cleveland that are practically wasted because there is no market. We feel that many things may be marketed under the present parcel post.

Standard Barrels for Apples

FOLLOWING is a summary of some of the principal points in a new federal law defining standard barrels, which went into effect July 1, 1913:

"The standard barrel for apples shall be of the following dimensions: Length of staves, 28½ inches; diameter of head, 17½ inches; distance between heads, 26 inches; circumference of bulge, 64 inches outside measurement; representing as near as possible 7,056 cubic inches.

"The standard grade for apples packed in barrels and shipped in interstate or foreign commerce shall be as follows: apples of one variety, which are well-grown specimens, hand-picked of good color for the variety, normal shape, practically free from insects and fungous injuries, bruises and other defects, or apples of one variety which are not more than ten per cent. below the foregoing specifications shall be 'standard grade, minimum size 2½ inches' if the minimum size of the apple is 2½ inches in transverse diameter; 'standard grade, minimum size 2¼ inches' if the minimum size of the apple is 2¼ inches in transverse diameter, or 'standard grade, minimum size 2 inches' if the minimum size of the apple is 2 inches in transverse diameter.

"All barrels packed with apples shall be deemed to be below standard if the barrel bears any statement, design or device indicating that the barrel is a standard barrel of apples, unless the barrel shall be plainly marked on end and side with words or figures showing the fractional relation which the actual capacity of the barrel bears to the capacity described by the first section. The marking must be in plain block letters not less than one inch tall. Barrels packed with apples shall be deemed to be misbranded:

"If the barrel bears any statement, design or device indicating that the apples contained are 'standard grade,' and the apples when packed do not conform to requirements. Second: if the barrel bears any statement, design or device indicating that the apples contained therein are 'standard grade,' and the barrels fail to bear also a

statement of the variety, the name of the locality where grown and the name of the packer or person under whose authority the apples were packed and the barrel marked. The penalty for the violation of this law is \$1 and costs for each barrel sold or offered for sale."

Michigan Land Values

By A. J. Rogers, Jr.
AN ILLINOIS reader says he understands that there are some fifty thousand acres open for settlement in the Michigan fruit belt. It is to be sold cheap in ten to forty acre tracts.

Michigan is for sale! I take it you mean the southern part of the Southern Peninsula and in the fruit belt, which includes the counties along Lake Michigan, extending eastward to Grand Rapids. In general, this is the very best for general farming and fruit culture. The country is well settled and many farms, which are now neglected, may be bought very cheaply. These, I think, are a very good investment. There is little swamp land, and no rocks are to be found in this section. Few stumps are to be seen, the climate is delightful, and the water very good, but hard in some places.

Just a word: Don't believe all that some real-estate dealers may say. In Michigan, as elsewhere, there is poor land that must be looked out for.

Persimmons—a Profitable Crop

By M. Coverdell
THE persimmon (*Diospyros Virginiana*) is a native fruit of the United States, the name of the tree being handed down from the Virginia Indians' language. It is said to be a natural growth from New York southward. But more accurately it may be said that it is never found, as a natural product, north of latitude forty degrees.

The persimmon belongs to the plum family of fruits, it being very harsh and astringent even after ripening. With the first frosts, however, it becomes mellow and of the most luscious and palatable savor, being a natural laxative of the highest nutritive value. Opossums, coons and in fact all animals are very fond of persimmons and grow rolling fat on them. Hence the significance of the phrase "Possums and Persimmons."

While the persimmon has been budded, grafted, etc., and greatly improved in limited sections, it has not been given the attention it would seem to merit. With proper management, it probably could be carried much farther north than the area it now occupies. The same might be said of the paw-paw, which is a sort of sister fruit to the persimmon, being a little larger, shaped like a bean and also of a very luscious and nutritious consistency.

Persimmons are used in a variety of ways for table use. They are also in demand as a commercial product, selling for one dollar per bushel. They should not be plucked till after the first heavy frosts, and if they will hang on the tree till a hard freeze, they will be of finer flavor. In drying and curing them (which is done the same as with other fruits) care must be taken that they do not lie in heaps, as they are apt to mold. They also require a very cool, dry place in storage.

Hog Prices Remain High

By L. K. Brown
THE hog-market is pursuing the course that has been expected. Receipts have been inclined to get smaller and prices advance accordingly. Quality has deteriorated somewhat, but the average weight has remained about the same. Heavy packing hogs are discriminated against, while the light shipping weights under two hundred pounds command the highest price. The market has gained a top-heavy appearance when the price has advanced to a high figure, thus making it doubtful if it will advance much farther. However, clearances have been accomplished early in the day, and the market has been healthy.

Since the advance in live-hog prices the provisions-market in pork products, especially in lard, has received considerable attention. Provisions prices have followed in a general way the live-hog prices, but are on a more sensitive and fluctuating basis. Lard stocks have increased rapidly, but no declines are expected, as the future demand will consume it all. Vegetable oils have advanced, thus helping to maintain lard prices. Foreign demand is strong in this product and fair in pork.

The outlook for the next few weeks is a satisfactory one to the farmer. Prices will be maintained because the fresh demand has remained good, and the eastern shippers are taking a larger portion of the supply than previously, and receipts are not expected to increase any until winter.

Northwest Apple Grades

THE necessity for bringing the producer and the consumer more closely together has been talked over and written about from every angle. It is recognized, however, that the demands of the consumer must be found in what the producer sends to the market, if the most profit and the least waste is to follow. Last March the Northwestern Fruit Exchange in convention at Portland, Oregon, adopted the following

apple-grading rules as an expression of what the market demands. A number of organizations of the Northwest interested in the apple crop have ratified these rules. Whether they meet with the approval of all or not, is not so important at this time. Minor differences in such a classification can be easily arranged. The interesting standpoint is: marketing is being placed on a basis that can be understood.

GRADES	Minimum Size	Color Requirement	General Condition	Physical Perfection	Packing Standard
No. 1 GRADE					
LIMITED TO VARIETIES LISTED					
Solid Red Varieties					
Arkansas Black.....	150	75% good natural color.	Must be of natural color shape and condition characteristic of variety. Apples heavily coated with dirt must be cleaned.	Must be sound, smooth, well formed, free from all insect pests, disease, blemishes, injuries, worms, decay, holes, stings, scale, scab, sun-scald, dry rot, decay, fungus, water core, spray-burns, limb-rub, skin-punctures, skin broken at stem.	Each apple must be lined with paper. Pack must be standard count as per list at bottom.
McIntosh Red.....	150				
Spitzenberg.....	150				
Winesap.....	163				
Partially Red Varieties					
Delicious.....	138	50% good red color.	Must be of natural color shape and condition characteristic of variety. Apples heavily coated with dirt must be cleaned.	Must be sound, smooth, well formed, free from all insect pests, disease, blemishes, injuries, worms, decay, holes, stings, scale, scab, sun-scald, dry rot, decay, fungus, water core, spray-burns, limb-rub, skin-punctures, skin broken at stem.	Each apple must be lined with paper. Pack must be standard count as per list at bottom.
Gravensteins.....	150				
Jonathan.....	150				
Rome Beauty.....	138				
Stayman Winesap.....	138				
Blushed Varieties					
Red-Cheek Pippin.....	150	Distinctly colored cheek.	Must be of natural color shape and condition characteristic of variety. Apples heavily coated with dirt must be cleaned.	Must be sound, smooth, well formed, free from all insect pests, disease, blemishes, injuries, worms, decay, holes, stings, scale, scab, sun-scald, dry rot, decay, fungus, water core, spray-burns, limb-rub, skin-punctures, skin broken at stem.	Each apple must be lined with paper. Pack must be standard count as per list at bottom.
Winter Banana.....	138				
Yellow Varieties					
Grimes' Golden.....	150	Good natural color.	Must be of natural color shape and condition characteristic of variety. Apples heavily coated with dirt must be cleaned.	Must be sound, smooth, well formed, free from all insect pests, disease, blemishes, injuries, worms, decay, holes, stings, scale, scab, sun-scald, dry rot, decay, fungus, water core, spray-burns, limb-rub, skin-punctures, skin broken at stem.	Each apple must be lined with paper. Pack must be standard count as per list at bottom.
Ortle.....	150				
White Winter Pearmain.....	150				
Yellow Newtown.....	163				
No. 2 GRADE					
INCLUDES ALL VARIETIES					
Solid Red Varieties.....	None smaller than size 175, except as below.	1-3 good natural color.	Apples with slight deviation from proper form may be included, but not when clearly misshapen. Apples heavily coated with dirt must be cleaned.	Same as for No. 1 grade, except that apples with slight limb-rub, slight russeting or small healed stings will be admitted, but no apple shall show more than one of these defects.	Same as for No. 1 Grade.
Partially Red Varieties.....		1-5 good red color.			
Blushed Varieties.....		None.			
Yellow Varieties.....		None.			
EXCEPTIONS					
			Yellow Newtowns may be as small as size 200.		
			Jonathan, Spitzenberg and Winesap will be admitted in sizes 188 and 200, if up to color requirements for No. 1 Grade.		
			Rome Beauty, if 125 or larger, will be admitted when 10 % red.		
No. 3 GRADE					
	None smaller than size 150. No exceptions.	No requirements in regard to color.	No requirements except that fruit must not be clearly immature.	Must be free from all insect pests, disease, worms or serious injuries. Skin-puncture or broken skin not permitted.	Pack according to trade requirements, without wrapping.

All grades must be rigidly observed. Apples not admissible to grades specified must be withheld from market. Designate sizes by count; do not show tiers. The only recognized counts for Northwest standard apple-packs are as follows: 41, 45, 48, 56, 64, 72, 80, 88, 96, 100, 104, 113, 125, 138, 150, 163, 175, 188, 200.

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Live Stock and Dairy

The Profitable Hog

By Wm. Bolles

ONE of our farmers who has raised an average of 125 pigs yearly decided to try for six hundred by breeding one hundred gilts. The first litters came when the weather was cold and wet, and but fifty were saved. The second farrowing took place under more favorable conditions, yet but a hundred were raised. In this case forty sows were bred. In speaking about this experience, the breeder said: "It was mismanagement. I can handle forty sows with ease and raise most of the pigs, but with more they have to shift for themselves, and if conditions are against me I lose out. After this I will stick to forty head."

Although he has his hogs on an alfalfa-pasture and is a heavy grain-feeder from the time the pigs are farrowed until they are sold, yet he feels he has made good by feeding shorts as a slop, on the side. He thinks he has always made a profit at hog-feeding since he started in the early nineties, even though corn has, at times, cost around the sixty-cent mark.

A farmer living in the center of a farm reaching a mile and a quarter each way from the house and feed-lots has been enabled to raise his hogs with but little grain from the time they are farrowed until they are ready to fatten out. There is alfalfa from one end of the place to the other, and they generally have free range everywhere except through two months of the growing season for corn. The sows farrow where they please, and little attention is paid to them until those a year old are rounded up in the late summer ready for fattening. Most generally two months—often less—finds them finished and on the road to market. Neighbors feeding a heavy ration of grain from the time of farrowing until the pig is sold say his hogs look runty; but he beats everybody when it comes to making the greatest profit. In addition to marketing his hogs at a low cost, this farmer also has better "luck" in raising more pigs per sow bred than his neighbors who feed them heavily.

When Selecting a Draft-Horse

By John P. Ross

IN A PREVIOUS issue I suggested that the farmer taking up horse-breeding would do well to seek for a stallion of the breed he proposes to raise and whose services would be readily available. If he succeeds in finding one possessing to a reasonable extent the best points which characterize the breed, he will have in his mind a model which should greatly assist him in selecting mares. He should, therefore, as fully as possible, know what these best points are.

Soundness in both parents is the most important matter to be looked for, because most of the troubles which constitute unsoundness are hereditary. Relatively few are caused by accident. There are nearly thirty kinds of unsoundness besides some half dozen species of vice which, in the eye of the law, entitle the purchaser of a horse warranted "sound and free from vice" to return him.

As a little knowledge on so complicated a matter is a dangerous thing, it will be found safest and cheapest in the end for even a fairly expert horseman, before buying mares for breeding or using a stallion, to obtain the opinion of a competent and honest veterinary surgeon on this point of soundness.

Outside of it there is little to keep a man of ordinary intelligence and powers of observation from selecting for himself the mares he proposes to breed from when mated with the horse he has in view. Even as regards soundness there are many diseased conditions and malformations so plainly visible that the exercise of a very moderate amount of "horse-sense" is sufficient to detect them.

Examine the Eyes and Ears

The sire of heavy draft-horses should weigh from 1,800 to 2,200 pounds, and to justify so great a weight should, to appear well proportioned, stand at least sixteen and one-half hands (sixty-six inches) in height, unless of unusually solid build and of the long-and-low type.

The best word I can think of to express the idea of the impression he should convey at first sight is "majestic," an effect produced by the carriage of the head and neck, the bold, courageous, yet kindly, expression of the eye and the general look of the countenance indicative of good temper.

Everyone knows what a lot of information some horses can convey by merely wagging their ears. The possession of the above-named attributes almost surely implies a good appetite and sound digestive powers; and when there is added to all these the freedom, boldness and truth of action in moving, which are found only where due

proportion of parts is combined with a lively spirit, the seeker after a good horse may congratulate himself on having found one.

As the work of these horses, at maturity, is mostly the moving of heavy weights, not only should they themselves be weighty, but they must be possessed of great muscular power. The loins and back should be broad, the chest deep, the ribs close and deep, the hind quarters and limbs especially powerful and well muscled. The legs should be of good length down to the hocks and knees, and short below those joints. The shoulders need not be quite as sloping as is desirable in the lighter breeds, but it is a bad fault for them to err in the other direction and be too straight. There should be plenty of width between the forelegs and room for the heart to work in.

The Importance of Good Feet

No part of the horse's anatomy is more important than the feet. This is especially so with the draft-horse because his great weight and the strains incident to heavy hauling open up the way to many chances of injury to them. The structure of the



In moving heavy weights the heavy horse has the advantage

feet comprises some very delicate bones and nerves, and the outer covering which protects these should be strong, fairly sloping, free from shelliness and rough corrugations. There exists a strong prejudice against light-colored hoofs which experience has shown to be well grounded. The foot should be large in proportion to the size and weight of the animal.

Avoid a Horse with Flat Feet

Rubber tires and carriage-springs are man's substitutes for the horse's pasterns. They are intended to minimize the concussions caused by the impact of the wheels on hard and rough roads; and Nature has provided the elastic pastern to save the sinews of the horse's legs and the delicate mechanism of his feet, which without them would soon be hammered out of use.

In horses intended for fast work the long, springy and sloping pastern is desirable, as conducive to light and speedy action, but for the heavy draft breeds a medium in these respects must be looked for, as insuring greater strength.

The hocks, having much to endure in the distribution of the immense strength of the hind quarters, must be examined with much care. They are the seat of many of the most common and harmful



The possessor of this noble head is by name Vinay, by profession a Percheron stallion and in rank the champion at allion of France. The picture shows him to somewhat lack the hold, prominent, good-natured eye so marked in the Clyde and Shire breeds, and this gives him a rather sluggish and sulky look, but all this is probably a libel of the photograph, or he, otherwise, would never have attained his exalted position

diseased conditions, such as actual or threatened spavins, thoroughpins and curbs, which are generally inherited.

These, together with strains and enlargements of back sinews and of tendons, are among the diseased conditions quite possible of detection by keen observation and by handling. Their presence should at once preclude any idea of using an animal affected with any of them for breeding purposes. Soundness of wind and of eyesight are, of course, indispensable.

Where Veterinarians are Useful

By Dr. A. S. Alexander

IT IS always best to employ a graduate veterinarian in such ailments as "quittor," as treatment entails operating and requires skill and experience to make it successful. Ordinarily there is an enlargement on the coronet (hoof-head) and a hole in the lump, from which pus runs all of the time. This condition is, of course, accompanied by lameness. If home treatment is to be pursued clip the hair from the hoof-head, and wash the parts clean. With a curetting instrument scrape out the dead tissues from the sinus (pipe) that discharges pus. First enlarge the opening. After the operation inject a saturated solution of corrosive sublimate (secured from a reliable druggist), by means of a glass or hard rubber syringe; then poultice the hoof-head and quittor with hot flaxseed-meal for a week, changing the poultices night and morning. Wash off at the end of the week, and when the parts have dried perfectly inject the corrosive solution again, and blister the coronet with a mixture of one dram of biniodide of mercury and two ounces of cerate of cantharides. Rub the blister in for fifteen minutes, and tie the horse up short so that he will be unable to lie down or bite the part. Wash the blister off in forty-eight hours; then apply a little lard daily. Alternate these two treatments until discharge ceases. Then, if lameness continues, blister again.

The farmer who has learned that an abundance of clover or alfalfa pasture and a little mill-feed slop will put the hogs in prime condition for the fattening-pen has just about solved the problem of cheap pork production.

Bunches on the Knee

By David Buffum

"MY HORSE has bunches on his knees," writes a New Jersey reader in explaining the difficulty he is having with a valuable horse.

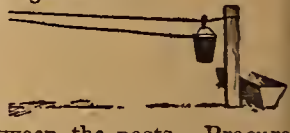
If the bunches are comparatively hard (that is, not filled with pus) treat them as follows. Procure at a drug store the following: tincture of aconite root, three ounces; spirits of camphor, three ounces; iodide of potash (in fine powder), four drams; mix.

Rub this well into the bunches with the hand twice a day, and continue for six or eight weeks. This treatment will always help indurated swellings, though it may or may not entirely remove them.

To Save Tired Shoulders

By Eugene Polk

SET a post near the house and another near the hog-pen. Stretch a strong wire between the posts. Procure a pulley and a snap, and hang the pail in the snap. This will save a tired back or aching shoulders. The pail can be pushed along by hand, or if there is enough slope will run down hill itself and will stop just in front of the lower post because of the sag in the wire.



Pigs act as a source through which the farmer can market many of the cheaper, coarser products of the farm at a good price.

Cut Deformed Hoof with Care

By A. S. Alexander

"OUR cow has a long toe or rather the hoof seems to have grown forward. She seems to walk on her heel, and the cords of her leg seem to be stiff. This causes her to step with a sort of jerk. She is a good cow and has a two-weeks-old calf by her side." So writes a Pennsylvania reader.

The condition described has likely been caused by an acute attack of founder, affecting one foot, or has resulted from a nail-prick or some such injury. If the hoof had been kept properly trimmed by rasping, or cutting with a wide chisel or with hoof-saw, the excessive growth of horn might have been controlled and lameness prevented. It may be too late to do much good now, but we would advise trying the following treatment:

Soak the foot in hot water for an hour or two; then put on a hot flaxseed-meal poultice, and renew the poultice when it becomes cold. Keep on the poultices until the horn of the hoof is cleansed and softened, then wash and dry thoroughly. The excessive horn may now be removed, to bring the hoof to nearly normal proportions; but in cutting it is best to be cautious and remove part by part, so that bleeding may not occur. If one were to cut away at once enough horn to make the hoof normal in shape damage might possibly be done by cutting into the quick.

After cutting keep the hoof well daubed with pine-tar to keep it soft and healthy. If cutting cannot be done successfully, as here suggested, there will be no other beneficial treatment possible.



The FARMERS' LOBBY.

Our Canal—An Overpowering Influence

By Judson C. Welliver

SOME time about January next a small ship will pass through the Panama Canal. Small, that is, for this twentieth century; big enough, however, to stow in its hold the whole fleet of caravels in which Columbus crossed the ocean on the occasion when he stubbed his toe on a continent that he didn't dream was in existence, thereby discovering it. It will be just a sort of try-out trip, and will not mark the formal opening of the big ditch. Indeed, by October 1st or thereabouts it will probably be possible to sail from ocean to ocean, though by that time the full permanent depth will not have been attained in the ditch.

But what is this canal going to do for us, and to us? is the question folks are now asking.

Taking up the political side, it seems to me that our old friend Manifest Destiny has pretty definitely decreed that the United States must take in the whole country as far south as the Isthmus. Not because I like to see it done or think it good for this nation. I don't. Looking at Mexico as it stands to-day, it's hard to understand how any American can contemplate with much satisfaction the responsibility of straightening out and running it. Looking to

WE ARE all familiar with the fact that the canal's the greatest engineering work ever accomplished, that it has the pyramids beaten four ways, that Suez isn't more than a roadside gully in comparison, and that the seven wonders of the world are all dead ones from this time on. But is it worth the money? Who will make the profits? How will it affect our relations to the rest of the world, commercially and politically?

Central America, there is assuredly little of temptation in the prospect of taking it under our national wing. Yet that is just what is ahead of us. Mr. Bryan has just negotiated, the Wilson administration backs, and this country is going to ratify, a treaty with Nicaragua under which the United States will in effect become the guardian of Nicaragua. In return for this we get assurance that no other nation will grab Nicaragua or secure the privilege of building a competing canal by the Nicaragua route. When a democratic administration goes that far it is complete proof that Manifest Destiny is on the job running things with a bigger horse-power than any political party can bring to bear in opposition.

We may like it or not, but it is coming. England didn't want to take Egypt; but England's government became owner of the controlling stock in the Suez Canal, and the canal was the great tollgate on the road to India; therefore Egypt must be quasi-British, at least. England doesn't fancy keeping a vast fleet always in the Mediterranean; but the Mediterranean guards the canal, and England must always be equal to any other power in the Mediterranean. So it is with the Caribbean; we may not yet quite realize it, but the Caribbean is our Road to India; it is our Mediterranean. We must and will be absolutely dominant there.

Therefore our foreign policy, especially as to Latin America, will be directed to assuring that no rival shall ever endanger our primacy at the canal or in its neighborhood. It may be generations before we will place Mexico in such a relationship as we have extended to Cuba, Santo Domingo, to Nicaragua; but whenever exigency demands we will go to the limit. That is settled.

The Canal Will Transform the Railroad

What does the canal mean to us commercially? Will it really make over the trade routes of the world? For my own part I have inclined to agree with those who on studying this question have concluded that the canal will have vastly more effect on our domestic trade routes than on foreign commerce. We will ship more goods between our Atlantic and Pacific coasts than we will ship to and from foreign countries.

Until a few years ago the transcontinental railroads opposed the development of water traffic between the Atlantic and Pacific in all possible ways. They controlled the old Panama Railway, and Pacific Mail Steamship Company; their affiliated financial interests largely dominated coastwise shipping on the Atlantic. They wanted the traffic for themselves, and succeeded in well-nigh stopping the use of the ocean highway from coast to coast, despite that it is naturally much the cheaper. But in the last few years their opposition has been much lessened. One reason is that national

public policy has instituted regulative measures that made it difficult for them to employ the old methods. Another doubtless is that the volume of the traffic has grown so immensely that the railroads could get all they could handle, without the necessity of fighting so bitterly against the water routes. How great has been this increase in ocean-going business is indicated by the fact that, in 1906, 560,000 tons went from coast to coast by water—around the Horn, through Magellan, or via the Tehuantepec or Panama routes—and in 1911 the tonnage was 1,104,000 tons. That is, the business had doubled, despite that the Panama Railway was capable of handling only a small part of the business offered to it, because it was almost to the limit of capacity in the construction of the canal.

The possibilities of traffic between the east and west coasts of this country, via the canal, cannot yet be suspected save by the expert and the prophet. The average American now living will see the population of this country almost double. Traffic increases in a greater ratio than population; in this country, a much greater ratio. Therefore, if the railroads don't get all of it, the water routes via the canal must get a tremendous business. Can they get and hold it? Manifestly they can and will. The railroads will not be permitted to strangle canal competition. They cannot possibly compete with it in cheapness, for water transportation is vastly the cheaper.

You might say that, if that be true, the business will all go to the canal and nothing be left for the railroads. Quite the contrary. The railroads will have less business across the continent, but they will haul a vast tonnage from interior points to the coast, there to be loaded on boats for the canal route. The railroads will ultimately become distributors and feeders for the trunk-line business of the canal.

The West is Independent

In this connection it is interesting to observe how largely the West has become independent of the East, and how largely the Middle West supplies the Far West with what it consumes. Just one illustration will suffice. In 1908 a detailed analysis of the origin of traffic received at Reno, Nevada, showed that seventy-five per cent. of it came from points no farther west than Chicago. The fact is—and it is something we don't realize as yet—that the Middle West is a great manufacturing country. Reno is typical of the inter-mountain West; it buys about all the manufactures it uses, and yet it finds about everything it needs without going east of Chicago.

At present the region from Chicago west—the whole central-valley country—is discriminated against in transportation rates. It has no water competition. But it is going to get that competition. The canal will provide it; and once it is provided, the great interior agricultural region will get better prices for what it sells, and will buy what it consumes at less prices. The Southern States are fast becoming great agricultural producers. They will develop a big traffic with the orient, the west coast of the three Americas, Australia and Polynesia, simply because they will suddenly find that they can ship to those markets by water routes that will be freed from domination by the rail routes.

Let me make this point plain. Load a car of freight at Boston or New York, and ask the rate on it to Omaha, and also the rate to San Francisco. You will very likely be told that the rate is the same to both places. That is, although Omaha is less than half-way across the continent, it costs as much to ship to it as to send the same goods clear across! Why? Because at Boston or New York the shipper has the

option of using the water route, of shipping via Tehuantepec or the Horn to San Francisco; but he has no such competitive route for shipping to Omaha or any other far interior point. So the traffic is charged all it will bear, and Omaha pays for fifteen hundred miles of transportation the same price that San Francisco pays for thirty-three hundred miles!

Not only that. Load a car at Boston for Spokane, and another for Seattle. Seattle is four hundred miles farther; yet the rate from Boston to Spokane will be higher than to Seattle. Again, why? Because Seattle is a coast point and has the option of shipping either by rail or by water. Spokane has no such option.

Almost invariably you will find that regions which pay the highest prices or get the smallest packages are those which have no water competition. The canal will equalize rates. It will make the big Middle West a fair chance, because it will compel a general readjustment of traffic conditions.

Our Home Trade is Most Important

Take the one item of lumber, which means so much to the Mid-Western farmers. Oregon fir for, say, Illinois must be hauled about two thousand miles by rail, under present conditions. When the canal is open it will be put in a boat and taken to New Orleans by water. Then it will go up the Mississippi, or a railroad paralleling the Mississippi, from six to nine hundred miles. The cost of that water-rail trip will be very much less than of the all-rail trip which is now necessary; consequently the farmer will get his lumber very much cheaper, because freight is the biggest item in cost of lumber hauled such distances.

Again, there is the indirect effect on the agricultural population of the great central valley. It was shown a moment ago that most of the freight coming to Reno originates on or west of the Chicago line. Yet that freight pays just as much to get to Reno as if it originated in New England. When the canal is opened and the general readjustment of rates has become effective the freight from Chicago common points to Reno will go at lower rates than the freight from New England.

It is very common for writers and lecturers to paint glowing pictures of the imperial development of our foreign commerce which will follow the opening of the canal. I hope they are right; but I decline to excite myself about all that. Our domestic commerce is so vastly more important to us than foreign commerce ever can be that foreign trade doesn't deserve to be considered.

Perhaps the canal will also greatly augment our foreign trade; but there is not much evidence of it thus far. It was recently stated in Washington that seven great steamship lines were building new vessels for the special purposes of the canal trade—and that every one of these lines was a European or Japanese concern! If any American company is building ships in anticipation of this business the fact has been advertised very little. Some time ago effort was made to finance an American-owned line of vessels, absolutely free of railroad ownership and domination, and it was finally set down as about impossible. That is why

there is a determined effort to induce the Government to build ships for this coast-to-coast business. It is realized that nobody will try to put government ships out of business by cutting rates or giving rebates. Nobody seems sure that privately owned ships

would have a fair deal. All that, however, would, after all, be temporary. The canal will emancipate transportation forces from any thralldom that may have been exercised in the past.

EDITOR'S NOTE—This canal affects every farmer in the United States. It may be so far away as to seem a part of "the other man's business" and not of ours. But it is ours, for our products must reach the consumer, and to reach the consumer they must be transported. The canal affects transportation. What would be carried if there were no farm products? When we think of this we see how closely the railroad, the canal, all forms of carriers, are linked to farm life and work.

THE canal is going to be such a great, big, overpowering fact in the national commercial life that it will compel recognition, a square deal and the emancipation of transportation forces from any thralldom that may have been exercised in the past. That will be the biggest service the canal will do the Nation. Freedom, after all, is worth more even than business or dividends.

IN FRONTENAC CAVE

As Told by One Who Was There, and Edited by Hayden Carruth

Author of "Track's End," "The Voyage of the Rattletrap," Etc.

Illustrated by Edward L. Chase

Synopsis of Preceding Chapters

Judson Pitcher, about eighteen years old, comes to Hawk's Landing, on the Mississippi River in Minnesota. Here he meets Captain Nathan Archway and his daughter Amy and his son Robert. Robert goes with Judson to the Lumberman's Bank, and while there it is attacked by the notorious gang of robbers led by Isaac Liverpool. Robert is shot and killed, and the gang escape to their hiding-place in Frontenac Cave. It is impossible to penetrate this cave by the only entrance known, since the robbers have closed it up. Captain Archway conceives a plan to get into it through a small sink-hole on the prairie a number of miles back from the Zumbro River. He and Judson go there in the night and lower themselves with a long rope. While they are exploring the upper part of the cave a thunder-shower comes up, and the flood carries the rope down the sink-hole and fills the small opening a hundred or more feet above with brush and soil. Before leaving the Captain's home at Hawk's Landing Judson finds, as he reluctantly admits, that he is very much interested in Amy Archway. When the Captain and Jud find there is no hope of getting out of the cave where they got in, they begin to search for another outlet, and keep it up for six days. By this time their food is gone and they are very weak. Since awakening on their first morning in the cave they have been greatly puzzled by a strange beating or throbbing sound which is especially noticeable in the Bedroom near Sink-Hole Dome. Finally by using their gun-barrel as a crowbar they move a loose stone at the bottom of a small tunnel and get down into the main part of the cave. Looking down a pit, they see a smoldering camp-fire, and the Captain starts back to get their rope, but through haste and weakness falls down another pit into a stream of water. Jud goes after the rope, and, with their only candle down to the last inch, lowers himself into the pit with the aid of the rope and finds the Captain alive and with some cooked fish which he has found by the fire. They eat it, and later get fish from another river which they cook over a fire made of small sticks evidently washed into the cave by freshets. Having no more candles they use sticks soaked in fish-oil. They continue to search for several days, but find no way out of the cave. On one of their exploring trips Jud stumbles over a man who is sleeping on the ground. He falls and his torch is extinguished. The man grapples with the Captain in the dark, and they try to throw each other over the edge of the pit; when Jud makes a light with his last match they find the man is Gil Dauphin, one of the Liverpool gang. He explains that he has been cast off by the gang and is at war with them, and he tells them that the only way to reach Liverpool's camp and the entrance to the cave beyond is by going up the pit down which he was thrown. They work many days in making a long pole out of dry twigs with which to climb up this pit. They carry the pole down a passage called the Gun-Barrel and suddenly meet the Liverpool gang, who begin firing at them with their revolvers.

Part V.

Our race for life and stay at the Robin's Nest; with a strict account of the Captain's making some proper shot and loading our gun; we manage to avoid those who would hunt us down till we reach Dauphin's Pit, where we are not so lucky.

OUR torch-sticks were well soaked with fish-oil and burned so freely that not one of them went out, though we ran like race-horses. Before the men could get around the corner and fire again we were clear of the Gun-Barrel, and though not one word was spoken we all made in the direction of the Pocket-Gopher Hole. There were a dozen ways of going, and we soon became separated, though it was my own fault that I did not keep with the Captain. I was, in fact, half scared to death, not being used to being shot at; and Dauphin, notwithstanding his rough life, had such a terror of Liverpool that I think he was no better off than I. As for Captain Archway, I believe him to have been too brave a man to have ever been truly frightened, but he well saw that there was nothing else to do except to run.

I think we all knew that part of the cave better than Liverpool, nor did he, of course, know for where we were headed; so very shortly he lost us, and I doubt not we were all soon running faster than there was any need. When I got to the Gopher-Hole I heard Dauphin going up it faster than any gopher ever went up his hole. Just then the Captain came in sight.

"Go on, Jud," he cried; "we're all right now;" so in I crawled, and he followed.

When half-way up the Captain stopped and moved a square stone a few inches, saying: "There, that closes up the hole and makes it look as if no one could get up; though if they know the place they will see what has been done and can easily move it. But if they don't know it they may never find the entrance at all."

At the top we found Dauphin waiting for us, but behind a pillar and ready to run again if it should prove to be the terrible Liverpool. I think he was a little ashamed of himself for running so fast, and he made haste to explain that if he had had any weapon he would have stood his ground against the whole gang.

"But, Cap'n what will you do now?" he asked, after the Captain had made him stop cursing Liverpool.

"We'll see," answered the Captain as calm as if at home eating his breakfast. "I think first we had best go down into your part of the cave. There are a few torch-sticks at the Star Chamber and a little wood and, if I am not mistaken, some bits of cold fish. Perhaps, too, we may there get some glimpse of the outlaws down the pits, and find what they are doing,

in order to know what we had best do ourselves."

This we accordingly did, going by a passage Dauphin showed us, which we named Dauphin's Door, and about which we knew no more than did he about the Trap-Door: which very well shows the mazes into which the cave was cut up, since we had all searched for days to find openings between the two parts. I here bethink me to say, too, that when we came upon the outlaws I had dropped the fish which I was carrying.

When we neared the pits we left our torches and crept up, very cautious, to both Rope Pit and Fire Pit, but saw nor heard nothing of the men. We hid what was left of the rope in a hole and carried the wood, torch-sticks and fish from the Star Chamber to a small room hard to come at, some distance away, which I named the Robin's Nest, since it was round and with hard mud sides just like the nest of that bird. After we had eaten a little of the cold fish the Captain ordered Dauphin and me to take some sleep while he stood watch. One torch we had to keep burning, since we had no matches, the few Dauphin had having become at last spoiled by the dampness, as we found on trying them.

Dauphin seemed to sleep well enough, but I woke a hundred times, the awful report of those pistols still ringing in my ears. Surely, I thought, no sound was ever so loud before, and they had echoed ten thousand times, and must, I still believe, have gone from one end to the other of the whole cave. Though, to be sure, I heard louder reports before I got out of the wretched place.

After some time, being again awake, I made the Captain lie down while I stood watch. For what I thought to be three or four hours I sat at the mouth of the little tunnel leading back and up to the Robin's Nest. If you have never sat alone in a cave, then you know not what silence is, nor will you ever know till you do. But you may well pray that you shall never know it long, for it, with the darkness, is so black and awful and presses upon your brain so hard that after a little you feel as if you should go mad; thus I felt that time standing watch. I may as well confess that one thing that helped me a great deal this time and many other times was my thinking about Amy Archway. I seemed to be thinking about her half the time, and all the time perhaps when I was alone, as I was when sitting there at the Robin's Nest. Once in what I thought to be fifteen minutes a drop of water fell somewhere into a pool, I judged, and it sounded like the report of a pistol would out on the earth where it is never dark, no, not on the thickest night, nor where there is no such thing as silence anywhere. For the stillness is such that the least noise sounds out tenfold and goes clattering along the tunnels as if it would never stop. The very bats, black imps of darkness that I say they are, make a faint flap with their wings when they turn in the air, though these wings, to which they have no right at all, seem made of the softest and thinnest india-rubber.

Indeed, I thought I had gone quite mad after some hours, when suddenly a frightful sound came to my ears, all mixed with echoes. I rushed back and awakened the Captain. He came out, and we waited till we heard it again.

"That sounds to me as if it might be somebody laughing," he whispered. "The outlaws may be stirring about. I think I'll creep over toward the pits, and I may get some sight of them."

He started, and in half an hour was back. "I was right," he said; "and though I got no look at them I saw the gleam of their torches down Fire Pit and heard their voices."

"Could you make out what they said?" I asked. "Very little, though once I thought I caught my own name; if so they recognized me; and I am sure I heard them speak of Dauphin. They are looking for us, but I don't think it will do them much good."

When at last Dauphin awoke (if a clear conscience makes sound sleep, then must this great rogue have felt innocent as a babe) we had what we called breakfast, being some six mouthfuls of fish apiece.

"We have," said the Captain, "fish enough to make three more meals like this, or maybe the last one may be a little lighter."

"Will the torches last as long?" I asked.

"I think longer by burning no more than one at a time," he answered.

"And what then, Cap'n—tell us what then?" said Dauphin.

"Then we'll see," returned the Captain, in no way excited. "I think we had best wait here a few hours and then make another trip to Sink-Hole Dome. It can do no harm, as I think there is little danger of those fellows finding their way up the Gopher-Hole."

This trip we accordingly made, but with no more to show for it than usual. We found the throbbing



stronger than ever and filling the whole cave so that you might hear it, or feel it, whichever it was, for half a mile, while in the Bedroom itself it was as if a giant was knocking on the wall with a stone hammer as big as a house. Still, we knew no more what it could be, and Dauphin was so terror-stricken that he vowed we should never get him in that part of the cave again.

Once back, we felt that it was time to sleep again, and the Captain and I stood watch as before, but with nothing happening. After breakfast in the morning Gil Dauphin fell to abusing Liverpool. By and by the Captain told him that he had talked enough on that subject, when he wound up by saying that he wished he only had a gun, and he would creep down and blow out the fellow's brains; whereupon I remarked, more as a joke than otherwise, that "we had a good gun for the purpose."

"You got a gun?" he exclaimed. "I never heard tell of it. Where is it?"

"At the Trap-Door," I answered, "but it isn't of any use, as we have no powder."

At this Dauphin clapped his hand in his pocket and brought out a small copper flask and said: "I've got powder in this here, and caps too. I carried it for my barkers"—meaning thereby his pistols—"but I ain't got any bullets."

The Captain here pried up his ears and took the flask. "Are you sure it is dry?" he asked.

"Yes, I am that, Cap'n. I sealed it up with melted candle-taller and the caps too. They took my barkers away before they threw me down the pit, but I had the flask in my pocket."

"Then I think we can load the gun," said the Captain. "We have only bird-shot, but we can make other, I doubt not, if we put our minds to it."

Dauphin and I set off after [CONTINUED ON PAGE 19]

SUNDAY READING

The First Day of the Week A Reminiscence

By Eveline Warner Brainerd

WE HAVE passed the point where we greatly discuss the observance of Sunday, and arrived at the stage where those who cling to the old ways feel conspicuous and those who have changed their habit are yet conscious of the change and call attention to it by somewhat pointless witticisms on their religious golf or what not. There are those on the one hand who watch with sad misgiving the present gala air that the day is taking on, while on the other are those who recall lugubriously what they consider the dull services, the stifling quiet and the stupid inactivities of the day as known to their youth. After some reflection on the people who keep to the religious character of the day, and we have had recently a conspicuous example in Mr. J. Pierpont Morgan, it can at least hardly be maintained that exhaustion from overwork is the cause of our change of habit. We believe in church-going or we do not. We like to go or we do not. That is the real equation, and without entering into the merits of these opposing companies I would like

some, now middle-aged, with hymns and Psalms and golden texts. To eat that meal on Thursday would have seemed sacrilegious. It belonged to the day along with best hair-ribbons and neckties, and new shoes. Where, by the way, have gone those Sunday clothes of a generation or more ago?

Going to Church Was a Habit

A pleasant scurry of the whole household after breakfast set the house to rights before the church-bell rang, and on the signal all were expected to be ready with gloves, handkerchiefs, collection money, quarterlies and Sunday-school books. No one stopped to consider whether it were hot or cold, whether the minister were interesting or not. It was Sunday, and one went to church precisely as one went on Monday to school or office, because one belonged there.

A soft stillness pervaded the old church such as never was felt elsewhere. One's playmates looked a bit strange, not quite like the children with whom one had played "duck on the rock" till night-fall Saturday. The elder folk wore a certain Sunday look, and added dignity and seriousness, along with their Sunday garments. We youngsters, sitting

stances, bring back that sense of peace and solemn orderliness which is an unutterable rest to the jaded man and woman weary from the week's work.

Sunday-school followed church if one were in the country. In the winter, in town, it preceded it. To this, too, we went, also without stopping to consider whether it entertained us or not.

Perhaps some kinsfolk came in for dinner, or some very dear household friend, but Sunday was not a day for ordinary guests. There had to be some reason for so intimate an invitation as to a Sunday meal, and the Sunday dinner was an institution. Roast beef or, in its season, turkey was the main offering, and the choicest of the early vegetables were brought for its service, and an especial dessert. How good everything tasted after the busy morning!

The Fairest Day of the Week

A quiet hour came after dinner, a book, not any recent novel or a Sunday paper, but something that at least was supposed to have a tested value. It must be excellent indeed to be worthy the fairest day of the week. When the day was declining came the walk with Father.

There was a short, early evening service in the country, and the minister came back to late supper with some other friend perhaps. We foraged the pantry ourselves, and brought forth huckleberries and bread and milk and gingerbread. The day closed early and happily with the tender grace of the family evening prayer. Surely there was nothing dull, nothing melancholy in such a day. It set one week off from another by a space of quietness. Its differences of dress and food emphasized its difference of intent, and here again for a little time each man's home became his fortress. No unbidden guest entered, no acquaintance felt at liberty to break in upon the family day. I cannot but think that there was somewhat of positive value in all of these little observances that in their total made directly for stability, self-control and reverence, three qualities which sometimes seem to-day especially lacking in our people.

PROCLAMATION

Of the Coming of Religion, Equality and Beauty

IN OUR new day, so soon upon us, for the first time in the history of democracy art and the church shall be hand in hand and equally at our service. Neither craftsmanship nor prayer shall be purely aristocratic any more, nor at war with each other. nor at war with the State. The priest, the statesman and the singer shall discern one another's work more perfectly and give thanks to God.

Even now our best churches are blossoming in beauty. Our best political life, whatever the howlers may say, is tending toward equality, beauty and holiness.

Political speech will cease to turn only upon the price of grain, considering the price of cross-roads fountains and people's palaces. Our religious life will no longer trouble itself with the squabbles of orthodoxy. It will give us the outdoor choral procession, the ceremony of dedicating the wheat-field or the new-built private house to God. That politician who would benefit the people will not consider all the world wrapped up in the defense or destruction of a tariff schedule. He will serve the public as did Pericles, with the world's greatest dramas. He will rebuild the local Acropolis. He will make his particular Athens rule by wisdom and philosophy, not trade alone. Our crowds shall be audiences, not hurrying mobs; dancers, not brawlers; observers, not restless curiosity-seekers. Our mobs shall become assemblies and our assemblies religious; devout in a subtle sense, equal in privilege and courtesy, delicate of spirit, a perfectly rounded democracy.

All this shall come through the services of three kinds of men in wise co-operation: the priests, the statesmen and the artists. Our priests shall be religious men like St. Francis, or John Wesley, or General Booth, or Cardinal Newman. They shall be many types, but supreme of their type.

Our statesmen shall find their exemplars and their inspiration in Washington, Jefferson and Lincoln, as all good Americans devoutly desire.

But even these cannot ripen the land without the work of men as versatile as William Morris or Leonardo. Our artists shall fuse the work of these other workers, and give expression to the whole cry and the whole weeping and rejoicing of the land. We shall have Shelleys with a heart for religion, Ruskins with a comprehension of equality.

Religion, equality and beauty! By these America shall come into a glory that shall justify the yearning of the sages for her perfection, and the prophecies of the poets, when she was born in the throes of Valley Forge.

This, by faith, and a study of the signs, we proclaim!

NICHOLAS VACHEL LINDSAY.



to set down as against the lugubrious memories aforementioned some childish recollections of the day as it once universally was in this country when the influence of the colonists was strong. First, it was a family day. That was its essence, and around its observance gathered forms peculiar to each household. From its beginning it was different from other days. It started with fresh garments and a regular and special breakfast. Popovers and fish-cakes are inextricably mingled in the minds of

as quietly as nature would allow in our places, knew little about the sermon. We probably made many secular plans during its length, but we learned to be quiet while our elders were occupied, and we learned a self-control that surely has had its part in shaping character. More than that, the stately hymns, the Psalms, the readings, became unconsciously a part of our being, as nothing learned in later life can be. Ever after the familiar words, wherever heard and under whatever circum-

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Scientific Canning of Fruits and Vegetables

By Mary Hamilton Talbott

IN CANNING fruits and vegetables the majority of us rely too much upon tradition and not enough upon science. "The secret of all canning lies in a clear understanding of what is meant by surgical cleanness," says one of our leading authorities on cooking. "When housewives understand that it is a germ (dirt) which produces fermentation in canned goods, they will be more careful to see that everything has been thoroughly sterilized. One germ of yeast on the lid, on the rubber or in the jar will spoil the entire contents."

Germs linger where we least suspect them, on the hands, on the table, on the dish-cloth. So the housewife who would be sure of success must discard "the way Mother did," and adopt the methods the scientists advise. And this is simpler than it sounds. Almost every housekeeper has a tin clothes-boiler, and this can easily be converted into a convenient sterilizing vat. The only things necessary are a tight-fitting cover and a false bottom. Have your tinsmith make a strong wire rack to fit the inside of the bottom. Ask him to bend down the heavy outside wire in four or five places to make feet to the rack. This will lift the rack an inch from the bottom and remove the danger of breakage. Have a handle in the center sufficiently high to grasp easily.

The boiler should be filled with water to about four inches above the rack. Adjust the rubbers (which should be new), lay on the tops, but do not fasten them, bring to the boiling-point, and boil the time varying with the fruit or vegetables in the jars. Small fruits and berries require about ten minutes; larger fruits, fifteen to twenty minutes. Very hard pears should be boiled until soft before putting in the jars. At the end of the time required lift out the jars, screw down the tops, stand the rack with the jars back in the boiler, add sufficient boiling water to cover the jars, and boil rapidly for fifteen minutes.

If it becomes necessary to lift the lids from the jars they must be thrown at

once into boiling water and kept there until needed. If you take a spoon or fork to lift them see that the bowl of the spoon or the tines of the fork are dipped into boiling water before they touch the lid. Never place a lid or rubber on the table and pick it up and put right on the jar. The table in all probability has some dust on it which carries spores of mold or yeast.

The housemother who has but few fruits or vegetables to put up may find the method of canning in the oven best suited to her needs. Put into the oven a dripping-pau containing about two inches of boiling water. After boiling the jars, fill while hot with material and hot juice, run the blade of a sterilized silver knife or fork around the inside of the jar to allow the air-bubbles to come to the top, set the jars in the pau of water, and cook in a moderate oven fifteen minutes for fruit, longer for vegetables. Remove, and fill to overflowing with hot syrup, and seal at once.

For acid fruits a pint of sugar is allowed to a pint of water, while for peaches, sweet plums, pears, cherries, raspberries and blackberries a pint of sugar to a quart of water is preferable. Strawberries should be canned in a syrup made of sugar and their own juices. In preserving berries or cherries only a gill of water to a pint of sugar and a pound of fruit should be used. Before beginning to pare the fruit—which should be done with a silver knife if possible, and if not, the steel one should be dipped in cold water after every few strokes to prevent discoloration of the fruit—have the syrup made, or if sugar is to be added to the fruit have it weighed or measured. Wash berries before stemming or hulling.

The quickest way to remove the peel from peaches, plums, beets, carrots or tomatoes is to place them in a wire basket or a thin cloth, lower into boiling water, allow to remain there from two to five minutes, then remove, and immerse in cold water. Use a sharp knife to cut the stem and core out first; the skins will then peel right off. If the pulp adheres you have not boiled long enough. The riper the fruit, the less time it requires for the skins to loosen.

All kinds of greens, such as beet-tops, dandelion, spinach and other greens common to our diet, should be preserved for the time they are not in season. Wash them carefully through several cold waters. Cut off the roots, and throw the leaves in a dry granite or porcelain kettle. Sprinkle over them a tablespoonful of salt to each peck of greens, cover the kettle, and place it over a very moderate heat until the leaves are wilted. Drain and fill the jars to within a quarter of an inch of the top, fill jar to overflowing with cold water, and proceed with hot-bath method, boiling first time an hour and a half, and the second time for thirty minutes.

Tomatoes can probably be prepared in a greater number of ways than any other vegetable. They form the basis

of most soups; they may be used in sauces. The combinations with onions, peppers, cabbage and spices, represented by ketchup, piccalilli, chowchow and pickles, are almost endless; they may be mixed with green cow-peas and canned for soup, or with okra and corn, or with okra alone, to be used in this way either as a vegetable or a soup. They make delicious chilli sauce.



"On Pleasure Bent, Though of a Frugal Mind"

Holiday Near the Back Porch

By Carolyn Curyea

WE HAD planned quite a different vacation, a delightful, carefree time among northern pines, beside restful waters, with a stop on the way home at the big city on the lake, for that rubbing up against new ideas needed to keep our country existence from becoming stagnation.

But—well—the best laid plans are apt to gang aglee when attacked by such a host of accidents as disturbed our proposed outing. First, there was the crop shortage of the past year, caused by the combined assault of the boll-weevil and the army-worm, followed by a bank-failure which swallowed up what little had been saved from the wreckage. Then came the unprecedentedly bad winter with its alternate freezing and thawing, during which all the little clover and alfalfa plants, which were to be an important factor in our fight against the boll-weevil another year, were pulled up by the roots and left to languish and die on top of the ground.

Then Came the Deluge

The cold, wet spring followed, rendering an oats crop out of the question. Then came the last, and greatest, disaster—literally, the deluge.

On the night of April 17th the great levee which guards the waters of the mighty Mississippi, and for the maintenance of which the residents of the protected counties pay an enormous tax, broke and let in the pent-up floods upon us. This occurred on Wednesday night. By Friday night our plantation was from three to six feet under water. When, after weary weeks of waiting for the water to subside, a period of inactivity very trying to the souls of those depending on the fruits of the soil for a livelihood, we at last crept back from the village whither we had taken refuge during the inundation, we found the labors of six years largely undone; our orchard, which had just begun to bear nicely, blighted, garden and strawberry-beds vanished, much of our poultry missing, the stock enfeebled from the long period of confinement and the season too far advanced to make a cotton crop.

Neither the husband nor I had the heart even to whisper the word vacation.

Yet never had we been so much in need of a respite from the struggle with adverse things. An occasional vacation is a good investment for anybody, but for the resident of the low-lying lauds of the southern half of the Mississippi Valley it is a necessity. I was determined that if we could not have the change of climate needed we should at least have some novelty introduced into our mode of living. In our back yard stand some cottonwoods, a willow and an elm or two that were not injured by the overflow. In the shade of these trees our homely back porch stretches its comfortable length. This porch and the surrounding shady spaces I decided to use as a camping ground.

Getting Ready for the Trip

The week before the one set aside for our outing I went over my house, putting everything in order as for an absence. I packed a trunk as for a journey. This trunk, our rain-coats and galoshes, a warm shawl and blankets for the occasional cool night were carried down and deposited on the back porch. Hither were also brought a wire cot, a hammock, a supply of porch-pillows and the apparatus necessary to protect us from the advances of the ubiquitous mosquito. The refrigerator was placed on the farther end of the porch and supplied with ice. On the morning of the day on which our vacation was to begin this receptacle was filled with eatables. We used paper napkins and lunch-cloths, and thin wooden trays (such as are used by grocers) for plates and dishes; we drank from tin cups and made coffee in a tin coffee-pot. A primitive construction of brick and mud served as a fireplace. When everything was in readiness I locked the house, hid the key under the time-honored flower-pot on the front doorstep and journeyed to the back porch.

The husband had not entered into the spirit of the undertaking with enthusiasm. Indeed, he seemed to look on the whole project as a mild bit of insanity born of the season's strain. He had gone into town on the afternoon of the day on which our vacation commenced and did not return until late. When he did come I had an excellent meal awaiting him under the cottonwoods, after which a pipe and a pillow in the ham-

mock were things not lightly to be rejected at the close of a stifling day. The smell of frying bacon and the aroma of coffee made in the open which greeted his nostrils when he awoke next morning completed the conquest. By night he was himself superintending the culinary operations and regaling me with accounts of wonderful accomplishments in the same line in days ago. A colored tenant attended to the work and brought us fresh milk night and morning. We slept and read and tramped and rode, and occasionally entertained visitors. We had a good book on birds, a botany and field manual and a magnifying glass. Thus we came to know more about the flora and fauna of our locality in the ten days of our outing than we had gleaned hitherto in six years of ordinary living.

You cannot imagine how pleasant and new the old monotonous round of household duties seemed when, at the end of ten days, I journeyed back to the front of the house, rescued the key from the flower-pot and entered my home. Paper-bag cookery had all the fascination of a new experiment again, after the primitive methods of the camp, and the flowers on the china looked as if they had been out in a spring shower, they were so fresh and gay! And how good one's own bed does feel when one has slept out of it for a few nights!

The husband proved his pleasure in our experiment by declaring that we ought to camp out like that every summer.

A Carriage Camp

By H. F. Grinstead

ONE of the most delightful vacations of my experience was a hundred-mile carriage ride with my wife and four children. Our entire baggage, including a day's feed for the team, bedding, provisions, a change of clothes and cooking-utensils, was less than three hundred pounds in weight. The provision-box was three feet long, and its other dimensions were eighteen inches each way. A shelf was made in the center from end to end, and one side was hinged to let down from the top so as to form a table. When closed the lid was held in place by a hasp, and when open was held horizontal by a leather strap with a snap

Green peas, corn and beets contain sugar, and, as yeast-spores grow quickly in saccharine solutions, these vegetables are more difficult to keep, hence they must be boiled longer. Peas and corn should be boiled three hours. String-beans should be parboiled fifteen minutes after being strung and washed in cold water, drained and packed in the jars, and then the process is the same as for greens. Asparagus, too, should be parboiled for fifteen minutes and proceeded with as are string-beans.

Jelly-making is no longer a tedious job with hit-and-miss success when made according to scientific rules. The old-time mother used too much sugar and boiled the fruit too long. Most jelly may be made with one-half as much sugar, but the juice must be boiled alone for twenty minutes, then half as much sugar added as there is juice. The sugar should be put into the juice hot. A short cut for the busy housewife in her jelly-making is to put the fruit right into the muslin jelly-bag, put it in a large kettle and cover with cold water. After boiling until the fruit is soft, this may be lifted out and hung up to drain overnight. As the fruit may be cooked while one is preparing supper and the rest done in the early morning, it may all be accomplished in the cooler parts of the day. Don't tie up any more jelly-glasses, but use clean and cheap paraffin instead. It has, besides its qualities of excluding the air and preserving the jelly from mold, the added virtue of extreme economy, for it can be remelted and used again the next year. It is possible occasionally to use old rubbers if they are first dipped in paraffin.

When there are no corks the proper size for the ketchup-bottles, it can be poured in the necks after they are filled. It may be necessary to do it a second time, as it shrinks very much while cooling. A small tin teapot, a five or ten cent one answers the purpose, is excellent to melt the paraffin in and pour from into the containers, and keeps the contents free from dust and dirt.

which fastened in a staple. This box was set on top of the wagon-bed, and held in place with cleats and a bolt through the wagon-bottom, so that the rear side of the box was even with the tail-board of the wagon. The lid let down from this side, forming a narrow table at the rear of the wagon. We found that by our arrangement there was room under the box for three feeds of corn for the team. A light fly without tent-poles was all the shelter we took. When we struck camp, it was the work of just a few minutes to cut small poles and forks to stretch the fly, and this answered very well for a tent in summer. The front seat of the wagon was turned to face the rear, and when the cushions and a short board were placed from one to the other, a bed for two was made. Such of the bedding as could not be used on the seats in daytime was rolled in the fly tent and tied on top of the provision-box at the rear. Two shallow boxes, one small enough to just fit in the other, were provided as feed-boxes for the horses.

Near to Nature

Since we knew nothing of the country farther than ten miles from home, every day's travel revealed new scenes. We chose the most delightful camping spots; for, since we were not traveling on a schedule, we would stop at a desirable place if it was only mid-afternoon, letting the horses feed in the shade and the children wade in the near-by brook.

A part of our route lay through a section that was nearly thirty miles from a railroad. It was refreshing to note the simple hospitality of the people in this isolated community. When our camp happened to be near a house the kindly disposed farmer and his wife would often come down after supper and "sit till bedtime," inviting us to call on the return trip and offering the hospitality of their house in case of inclement weather.

There was no game of any consequence along the route, but in the larger streams there were fish to be had, and there was an abundance of God's sunshine and fresh air, which gave a zest to the appetite after sleeping in the open air. There is something akin to magic in this outdoor living. It is rest to the grown-ups, and to the children it is a source of constant delight.

Necessary Clothes for the Summer Wardrobe

Designs by
Grace Margaret Gould

Drawings by
May Fairchild

WOMAN'S HOME COMPANION patterns are not sold in stores or through agents. They may only be ordered from our three pattern depots. Order from the depot nearest your home. Pattern Department, FARM AND FIRESIDE, 381 Fourth Avenue, New York; Pattern Department, FARM AND FIRESIDE, Springfield, Ohio; Pattern Department, FARM AND FIRESIDE, 1554 California Street, Denver, Colorado

ALL of the designs shown on this page are the sort every woman needs in her summer outfit. They are comfortable clothes, too, that can be developed most attractively in very reasonable summer wash fabrics. For every design illustrated there is an easy-to-put-together, comprehensible WOMAN'S HOME COMPANION pattern. The price of every WOMAN'S HOME COMPANION pattern is ten cents



No. 2060—Negligée with Kimono Sleeves

32 to 42 bust. Quantity of material required for 36-inch bust, two and one-half yards of twenty-seven-inch material, or one and one-fourth yards of forty-four-inch material, with three-fourths of a yard of lace for panels. Use challis and lace for this jacket. Price of this pattern, ten cents



No. 2339—Tucked Dressing-Sacque with Sailor Collar

32 to 44 bust. Material required for 36-inch bust, four yards of twenty-seven-inch material, or two and one-half yards of thirty-six-inch material. When sailor collar is omitted one-half yard less of twenty-seven-inch material will be required. Price of this pattern is ten cents

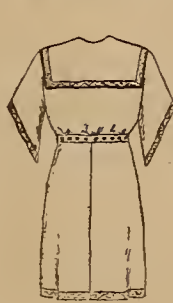


No. 1929—Dart-Fitted One-Piece Corset-Cover

32 to 48 bust. Quantity of material required for medium size, or 36-inch bust, five eighths of a yard of forty-five-inch material. The price of this corset-cover pattern is ten cents

No. 1316—Simplex Nursing Corset-Cover

36 to 44 bust. Quantity of material required for 36-inch bust, two yards of twenty-two-inch material, or one and one-half yards of thirty-six-inch material. Price of pattern, ten cents



No. 2339



No. 2050



No. 2331
No. 2332



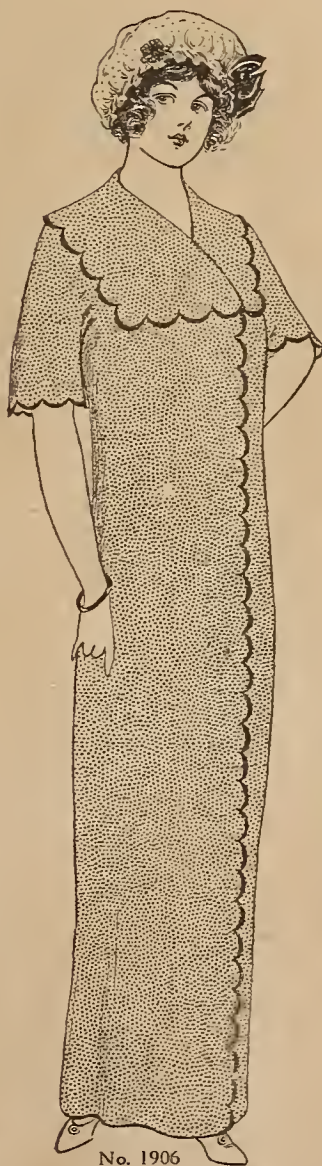
No. 2227
No. 2257



No. 2333
No. 2283



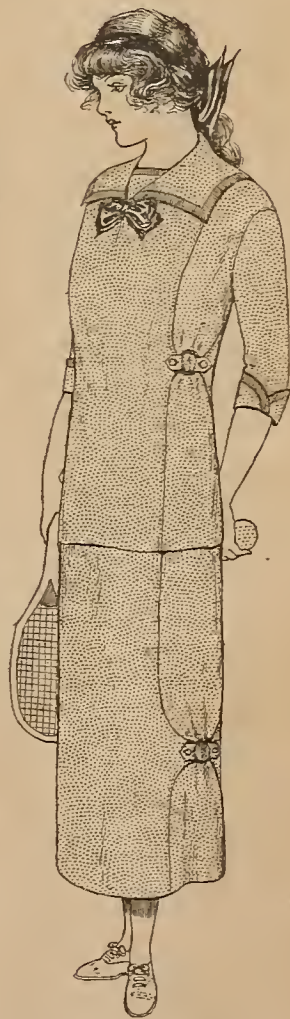
No. 1905



No. 1906

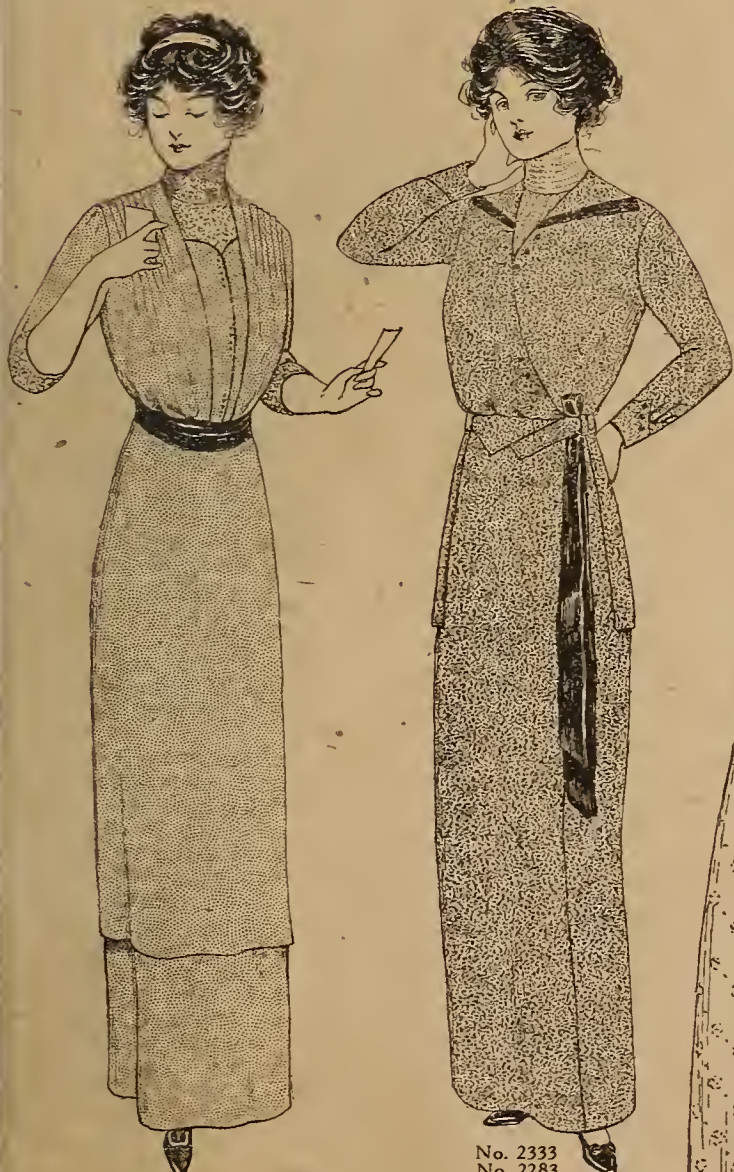
No. 1906—Room Gown with Large Collar

32, 36, 40 and 44 inch bust measures. Quantity of material for 36-inch bust, seven and five-eighths yards of twenty-seven-inch material, or four and one-eighth yards of forty-four-inch material. The price of this pattern is ten cents



No. 2331—Misses' Middy Blouse with Large Armholes

12 to 18 years. Material for 14 years, three and seven-eighths yards of twenty-seven-inch material, or two and one-eighth yards of twenty-four-inch material, with one fourth of a yard of contrasting material. Price of this pattern, ten cents



No. 2227—Tucked Waist with Vest

32 to 44 bust. Material for 36-inch bust, one and seven-eighths yards of thirty-six-inch material, with one-half yard of lace. The price of this tucked waist pattern is ten cents

No. 2257—Skirt with Long Tunic

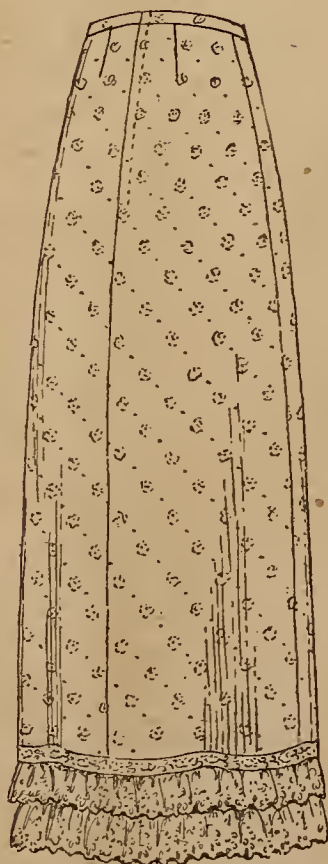
22 to 30 waist. Material for 26-inch waist, six yards of thirty-six-inch material. Width of skirt in twenty-four-inch waist, two and one-half yards. Price of this pattern is ten cents

No. 2333—Peplum Waist: Sleeveless Guimpe

32 to 40 bust. Material for 36-inch bust, one and seven-eighths yards of forty-four-inch, five eighths of a yard of contrasting, seven-eighths yard of net. Pattern, ten cents

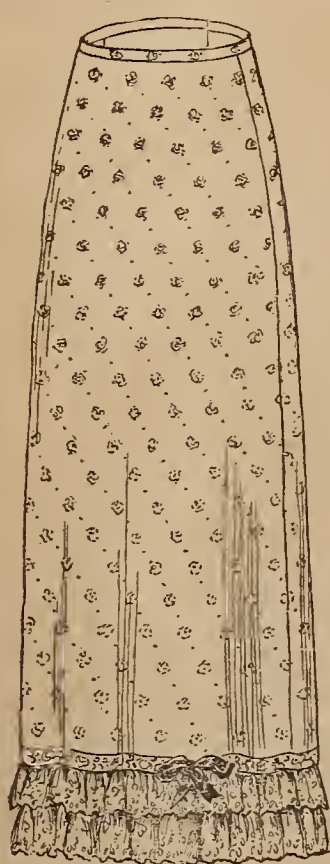
No. 2283—Three-Piece Skirt

22 to 36 waist. Material for 26-inch waist, two and three-fourths yards of forty-four-inch material. Width of skirt in twenty-four-inch waist, two yards. Pattern, ten cents



No. 2340—Scant Three-Piece Petticoat

22 to 36 waist. Material for 24-inch waist, two and three-eighths yards of thirty-six-inch material, four and three-eighths yards of two-and-one-half-inch lace and one and three-fourths yards of beading. Width, one and five-eighths yards. The price of this petticoat pattern is ten cents



No. 2332—Misses' Four-Piece Skirt: Side Panels

12 to 18 years. Quantity of material required for 14 years, three yards of twenty-seven-inch material, or two yards of forty-four-inch material. Price of this pattern is ten cents



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OUR YOUNG FOLKS' PAGE



Conducted by Cousin Sally

Comanche Lodge

By F. H. Sweet

NEARLY every boy has a natural inclination for the woods, and a real log cabin, or a house in a tree, or a summer-weather affair of pine boughs and twigs, or a cave is enough to put thrills into him and to keep them there so long as the place is used. One of my jolliest recollections is of a boy under nine—a "middle boy," with two older brothers and two younger ones, and all filled with wild Indian longings—and a bough-built hut in a thick pine woods a mile from home. In such a place it was easy to find four trees in an almost perfect square, for the corners. With hatchet and knives and an abundance of rope, gathered in scraps here and there, the house was completed by noon of the second day. First, pine-saplings the size of one's arm were placed securely in crotches or fastened with rope about eight feet high, entirely around. Then, two feet or so apart, and down to the ground, except at the front, other saplings were fastened. Near the middle of the front a door opening was built in of strong saplings, and within this a door-frame placed, swung on hinges of boot-leather and fastened by another piece of boot-leather with a hole in the end that would slip over a nail-head.

Playing Indian

The door-frame, like the house, was crossed by pieces of sapling. For the ridge-pole a larger sapling was hoisted some four feet above the center of the roof, to give a good pitch, and one end crotched in a tree that happened to grow at the right spot, and the other end fastened to a pole tied at the proper height to the two front trees. Cross-pieces were used on the roof the same as on the sides of the Lodge.

The skeleton of the house finished, boughs were woven in all over the sides and roof, using as compact and flat branches as we could find. From the large boughs we went to smaller and smaller, and ended with little twigs, that were drawn into such tiny openings as were still left. When completed, Comanche Lodge, as we named it, was tight enough to shed even a driving storm.

After it was done we carried in a dozen or so sacks full of dry leaves, fixed up some shelves of various lengths of pine saplings (boards or boxes would have been out of place for real Comanche Indians—"Injuns" we insisted on calling ourselves) and made a stone and cross-bar fireplace outside, where we afterward did some very creditable cooking—as we thought. The thick pine woods around was a fine place for stalking unfriendly Indians and game, and when we imagined that ambush or quick concealment was necessary, the dense tops of the firs and pines offered everything that could be desired.

Life Under the Boughs

The next four or five months, or practically all summer and fall, were given almost entirely to this bracing outdoor life, though I do remember we went home nights to sleep, and occasionally for meals.

Later came more substantial houses of logs, deeper in the woods and much farther from home, but none of them afforded more pleasure, and I might add benefit, than did Comanche Lodge.

A New Version of an Old Game

By A. E. Swoyer

EVERYONE is familiar with the game of "Authors," which has been a means of education and of entertainment for many years; the nature-study game herein described is no less interesting, while all of the articles used therein may be home-made.

To make the cards used it is necessary to have some photographic blue-print paper and a printing-frame, while the process of using them is most simple. Instead of printing from a photographic negative, however, secure a number of the leaves of familiar plants and ferns, press them in a book for a day or so, and print from them in exactly the same manner.

The time of printing is, of course, much longer; when the parts of the paper not covered by the leaf have turned almost black, remove it and wash in several changes of cold water, when the print of the leaf will appear complete in every detail. In addition to the leaf, however, a small square of heavy

paper should be placed in the frame directly beneath the leaf; this will leave a white space upon the finished print in which a brief description of the uses of the plant, together with a number, may be placed. If you use the blue-print postals they may be trimmed down to a suitable size for the cards; ordinary paper must be mounted on cardboard.

A set of four prints should be made from each leaf, each of the four being given a different number; the set of four makes a "book," as in authors. Sets should be made from enough different leaves to provide a sufficient number of cards, while the information respecting each plant may be obtained from any

then started up with a guilty feeling that she was using too much time. Mother needed the darning-needle. "She unfolded the piece of flannel in which she had been carrying it. The needle was gone!

This might not have seemed a great loss to a child of to-day, but Mrs. Randall's darning-needle was the only one for miles around. It had been bought in Pittsburgh when the Randalls were on their way West. It had darned the Randall stockings for seven years, and not only that, it had been loaned at intervals to the four nearest neighbors, and so had darned their stockings too. Mrs. Randall was quite a luxurions person. She had three other needles besides the darning-needle. But some of the families had only one.

So when Eunice saw that the needle was gone she was filled with dismay. The flowers and moss and pink stone were dropped in a heap, and Eunice began to search for the needle. Inch by inch she went over the path, from the place where she discovered her loss to the entrance to the wood. Then she turned and searched the path over again. Tears of grief filled her eyes at times, and she was weary with stooping, but she had no thought of giving up. The needle was there, and it must be recovered.

Midway on her second journey over the path she raised her head for a moment, and her heart jumped in terror. A tall Indian stood a dozen yards away. Eunice was screened by some bushes, and at that moment the Indian had paused to look back at something. Without rising, she crept farther around into the bushes, hoping that he would pass without seeing her. Then the Indian came swinging along the path, with a long stride, but noiseless tread. Eunice saw the feathers nodding from his topknot, the muscles rising in the bare arm that carried his gun, the fierce expression of the bent brow and down-cast eye. He was not looking about him, but kept his eyes on the path. Then he stooped and picked up something. His sharp eyes had instantly detected what Eunice had passed over twice. He had found the needle. Eunice, peering from her shelter, saw him hold it up and look at it. Then with a grunt he started on.



encyclopedia, selected with reference to the probable age of the players. The game is played in exactly the same manner as authors.

Finding the Needle

By Zelia Margaret Walters

MOTHER RANDALL took down her huge mending-basket and began turning the contents over with a careful hand. Eunice Randall stood quietly beside the door waiting for the word that would give her an hour to spend just as she liked. But the desired permission did not come.

"Eunice," said Mrs. Randall, "Mrs. Clark has not brought home the needle, and the darning will have to wait. Do you run over and tell her I need it to-day."

Eunice's face fell. Mrs. Clark was the nearest neighbor to be sure, but she lived nearly a mile away. To run over there and back would just about use up that precious hour. But she said, "Yes, mother," dutifully, took down her bonnet from the peg in the kitchen and started out.

The path lay through the clearing, and Eunice trotted along briskly. She was the daughter of a Western Reserve pioneer, and she said nothing about her fears, nevertheless in her secret soul lurked two terrors: she was afraid of panthers and the Indians.

She reached Mrs. Clark's cabin and told her errand. That good lady expressed many regrets. She had meant to return the needle before Mrs. Randall should want it, but the time had slipped away faster than she thought.

Eunice said politely that it didn't matter. She refused an invitation to stay a while and rest. Taking in one hand the precious needle folded in a bit of cloth and one of Mrs. Clark's delicious molasses cookies in the other, she started back.

At a branching of the paths Eunice hesitated a moment. One way led straight across the clearing, the other wandered through a narrow fringe of woodland left standing between the two farms. You could always find new playthings in the woods, strange flowers, mosses, pebbles or shells; and if there should be a play-hour how pleasant it would be to have some new things. The clearing path was old and beaten. Its possibilities had been exhausted long ago. There was a fleeting thought of panthers and Indians. But the Indians were peaceable, and panthers had not been seen about the clearing for a year. Eunice stepped into the shade of the woods.

Where is the Needle?

If Eunice had known of fairies she might have imagined they had strewn the way with treasures. She found a lovely pink stone and some partridge-vine with its delicate white flowers. In another place she stooped over a cluster of wake-robin, but the petals scattered as she gathered the flowers. A little farther along a clump of violets lifted friendly faces. She gathered them, and

Red Wolf

Without stopping to think Eunice darted out of her shelter and after him. What was her fear of an Indian compared with the loss of the needle!

"It is mine!" cried Eunice, catching at his blanket, which dangled from his shoulder, somewhat in a rakish cavalier fashion. "You must give it to me. Mother would be so put out, and she could not mend the stockings."

She reached for the needle and the astonished Indian yielded it. Then Eunice looked at him again. Perhaps he had needed a needle too. He looked sad. And there was a great three-cornered hole in the dangling blanket.

"I'll mend your cloak for you," said Eunice, relenting.

From the little housewife at her side she took some thread and threaded the needle. The darning-needle would be rather awkward to use in sewing a seam, but she would make it do. She laid hold of the blanket, and the Indian gave that up too. She seated herself and spread the rent on her lap. Then with the most painstaking stitches she could make with the great needle she mended the blanket. The Indian with his inscrutable face stood and looked on.

"Huh!" he said when Eunice restored the blanket. She wondered if that meant "Thank you."

She folded the needle in the piece of flannel, gathered her flowers and stones into her apron and started home. The Indian came too, walking close behind her. Eunice glanced at him rather fearfully several times. But on the whole she was rather glad to have him come, for if a panther should appear, why, Indians weren't afraid of panthers.

She burst into the kitchen at home rather excitedly. "I lost it, Mother," she said, "but he found it and gave it to me."

Then the Indian gravely spread out his blanket to show Eunice's mending.

Mrs. Randall found that he could speak little English, but she thanked him courteously, gave him some food, and then he said good-by and went away.

Eunice saw her Indian friend many times after that, and though she never could conquer a feeling of fear of other Indians she was always ready to greet Red Wolf with her friendliest smile.

IN FRONTENAC CAVE

[CONTINUED FROM PAGE 14]

the gun and were no longer than need be in fetching it. The Captain then led us back somewhat to a place under a small dome, where he built a fire with our wood beside a little pool of water; and what did he then do but make large shot out of small like this: On the fire he placed a stone with a slight hollow in the top. In this he put a handful of our fine shot, and when it was melted he took a small stick and with the end spattered the soft lead into the pool of water, where it hardened into shot of all sizes, though most of it was large. Dauphin and I could not help speaking our admiration of the skill with which he did it, for all the world as if he had always turned out bullets that way; but the Captain made no more of it than if he had been clipping his finger-nails, and went ahead and loaded the gun, putting in a good charge. I watched all with great glee, though if I could have foreseen what was to be I think I should have snatched the gun out of his hands; which shows how little we poor creatures know of anything in store for us.

When the Captain had done he laughed as he looked along the barrel and said:

"Jud, if you ever shoot this gun aim low, because the barrel is bent up an eighth or a quarter of an inch by our using it for a crowbar at the Trap-Door."

"Just let me carry it, Cap'n, will you, and I'll aim low enough, so I will," cried Dauphin. "I could shoot that Ike Liver-pool with a ram's horn if it was loaded."

"Judson or I will carry the gun," answered the Captain quietly. "There won't be any shooting with it unless it be in self-defense," at which Dauphin looked pretty sullen, as you may guess.

We went back to the Robin's Nest, and in a short time the Captain said: "Something has got to be done, and that soon. There is no more than enough fish for one more meal, and the torch-sticks are well gone. We have heard nothing of the gang for some hours now and perhaps they have gone back to their own cave. I think I had best go down and scout about a little."

He accordingly set off, taking the gun with him and going by way of the Gopher-Hole. Dauphin and I stayed at the Nest, and in darkness, though the coals of the shot fire were carefully covered lest the Captain should come back with his torch out. It was very well for us that we were left in the dark too.

It had been what seemed like two hours, with us sitting there in the bottom of the Robin's Nest like young birds, when there was a faint gleam of light on the roof through a hole just above the rim of the nest. "There comes the Captain," I said to Dauphin, and we crept up and then down the passage to welcome him. We were almost to the mouth of this, when the light shone through the room ahead and I thought it was too bright for one torch. I seized Dauphin's arm and whispered to him to stop. Then we heard voices and back we went and curled up in the bottom of the nest among some rocks. The voices came nearer, and I knew they were those of the outlaws. We lay there scared (and quiet) as young birds when a hawk is about. We could soon tell that they were looking everywhere for somebody, and of course it was for us. After some time I heard one of them coming up the passage and my heart stood still, as the saying is. He came up to the edge and flared his light over in, but we lay so still and were so like the ground and rocks with our muddy clothes that he turned back, calling out, "Nothing here!" and my heart began with a great jump to beat again. Soon their voices died away, as they went on; then we sat up, and I think Dauphin had been as scared as had I. But I see not why either of us should not have been well scared, with those fellows nothing short of ready to take our lives.

"If the Cap'n had only left that there gun," said Dauphin in a whisper, "I'd 'a' give that Joe Rusk what he wan't looking for. And I'd 'a' aimed plenty low too, so I would."

"Yes, and then the others would have found us. The Captain knew what he was doing when he took the gun. He may need it himself, too, before he gets back."

"He ought to be down there before this," returned Dauphin. "If we knowed where to find him it 'ud be best to go down, wouldn't it, Judson?"

"But we don't. Besides, they will probably go toward the Gopher-Hole, and we would most likely be caught if we tried to get down that way. We'd best stay right here." So this is what we did, for another two hours, as I believe.

At the end of this time light once more flashed above us, and we curled down among the rocks. We need not have done so however, for the next moment the Captain slid down into the Nest and said:

"Have you seen anything of those fellows?"

"Yes, they passed here looking for us, but though they came in the passage they didn't find us," I answered.

"We were lucky again," he returned. "I could not find them anywhere and thought they were gone back to their cave and we could safely return to Fish Camp, but when I came to Rope Pit on my way back I found our pole standing up in it, so I was afraid they were up here. But we'll hurry and eat what there is, and then for something else."

We fell to on the last of the fish, and the Captain went on: "Their rope is still down Dauphin Pit, and the best thing we can do will be to get down the pole and hurry and get up that rope. We can draw it up after us and maybe hide it somewhere. If the five of them are still here there can't be more than three at the Fort, and we can fight our way out if worse comes to worse. It will be three against three, though they're better armed than we are."

"Sneak up on 'em, Cap'n—that's what we want to do. Give me the gun, and I'll settle them, aiming low as you said to. That's what they need, the dishonest thieves. 'Stand up for your rights, Gil,' says they to me, and when I done it what happened? I got—"

"Yes, yes, Dauphin," broke in the Captain; "we know what happened. And I know what will happen if we don't stop talking so loud. Hark!" and at that very moment we heard the echoes of voices, and soon the men were near again. I held our torch low among the rocks, and the Captain crept up to the round hole. But the men did not come very close this time, and finally the voices died away. The Captain came down and said:

"I think they've gone back down the pole. They'll probably go to Fish Camp, where they seem to be staying, for a meal before they go up to their cave. We had best wait ten minutes and go down the pole too, and then get up their rope if it is there yet, by which we shall know that they are still down. We can't stay here and starve."

We left the Nest and went with great caution to Rope Pit, but could not spy the end of the pole anywhere. "I just came up it, and they must have gone down it," said the Captain. "Yes, and they've taken it down too." He tossed a piece of lighted torch-stick down, and we plainly saw it lying beside the stream. "That pole has been a nuisance," cried the Captain. "I wish I had never made it. Come, we must get down by way of the Gopher-Hole."

This we did, though, of course, it took some time. But at last we were again creeping like cats along toward the Gun-Barrel. We listened when we came to the mouth of it, and were about to turn down it when we thought we heard voices. We listened longer and were sure we did. They seemed to be coming from the direction of Fish River. For a half minute the Captain hesitated.

"Come on—it's now or never! There's plenty of time to get up that rope before they reach here!"

We started down the tunnel on the run, the Captain carrying the gun and torch, while Dauphin and I came behind, all excitement. When we came up to the pit the rope was still there. The Captain stood his torch against a rock, hastily tying the end of the rope around the handle, thrust the stock of the gun in his trousers's pocket, buttoned his coat around the barrel and went up the rope hand over hand. He was hardly to the top when Dauphin said to me:

"Go on—I climb up them there things slow."

Up I went almost as fast as the Captain, though I had never done such a thing before. I was half-way when I heard a great shout at the top and a man with a voice like a bull roared out: "Stand still and throw up your hands! Take his gun, Bill!" I stopped and looked up. A man carrying a big torch poked his head over the edge and looked down. "Quick, give me that gun, Bill!" he cried, and I slid down the rope like a shot. As I struck the ground he fired. I got up half stunned and ran along the tunnel following the torch ahead which Dauphin had and thinking (if I thought at all) what a good thing it was that the gun was crooked. Dauphin went out of the tunnel and dashed across the room at the end. I thought to do as well, but instead I rushed into the arms of Isaac Liverpool, just like a yearling colt running into an open barn-door.

(CONTINUED IN NEXT ISSUE)

Here's Walter Johnson

Washington "Nationals" (American League) one of the speediest pitchers of either of the big leagues—he

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He's got the head, the arm, the ginger and the endurance. Coca-Cola didn't give him them; but he says it's the one best beverage for the athlete in training—

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Comes in soft bricks, can be cut, bent or pressed into place like putty. Hardens when fire starts. Hugs the iron tight. Ashes can't get back of it. Outlasts iron linings. Saves fuel. Costs only \$1.25 for 3 bricks (size 7 1/2 x 6) enough for one stove. Delivered, prepaid by Parcel Post, anywhere in the United States east of Denver. Already used in 60,000 stoves. Order from this advertisement. Money back if not pleased.

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A liberal income is guaranteed to the right sort of workers. Such are some of the inducements for you to handle the biggest money-making offer ever made by a farm journal. A fine opportunity for energetic young men and women. Experience not necessary. You must act at once.

Department of Agents
FARM AND FIRESIDE, Springfield, O.

A Present to You from the Housewife

To induce you to become a reader of The Housewife for the balance of this year we will give you this beautiful Lunch Set stamped on pure linen and a Trial Subscription to The Housewife for only 25 cents.



This dainty and serviceable lunch set consists of a 16-inch centerpiece, four 4-inch round doilies and two 6-inch oval doilies, all stamped clearly in graceful wheat designs on pure linen, which looks better each time it is laundered. The edges of the different pieces are scalloped to be embroidered in buttonhole stitch, while the wheat sprays are to be worked solid. A row of torchon or Russian linen lace sewed around the pieces under the scallops is the latest way to finish a set of this kind.

THE HOUSEWIFE is a large, interesting monthly magazine, edited in behalf of the woman who has the interests of her home at heart. It has departments on Cooking, Fancy Work, Fashions, Home Decoration, Entertainment, and the Care of Children, and in addition THE HOUSEWIFE publishes the best stories and serials ever presented in a magazine of its price, and is beautified by exquisitely colored covers and many illustrations throughout.

This is one of the most generous bargain offers we have ever made, and we believe that no offer of greater value has ever been made by any other publishing house. Remember, we are giving away the Lunch Set, which we guarantee to be exactly as described, with THE HOUSEWIFE for the rest of this year for only Twenty-Five Cents. Remit by P. O. Money Order or Stamps.

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Electric horn
Flush U doors with disappearing Hinges
Turkish upholstery

f. o. b. Toledo

With Gray & Davis Electric Starter and Generator—\$1075

HERE is the car of the hour!
The 1914 Overland is ready for immediate delivery.

Again we lower the price. Again we increase the value.

This new car is larger, more speedy and powerful, more finely equipped and more elegantly finished, but in spite of this enormous value increase the price has been materially decreased.

The motor has been enlarged to 35 horsepower and will develop 50 miles an hour with ease.

The wheelbase has been lengthened to 114 inches—which is the average wheelbase of \$1500 cars.

The 1914 Overland tires are larger; the tonneau is longer and roomier; the equipment is better—including such big and costly additional features as electric lights; the body is handsomer, being finished in beautiful rich dark Brewster green, with heavy nickel and aluminum trimmings.

The 1914 Overland is the most magnificent and graceful popular priced car that has ever been made.

In fact, in every single and individual respect here is a much greater, bigger and better car at a reduced price.

This is only another demonstration of how big production will cut costs. For, instead of building 40,000 cars as in 1913, this year we will build 50,000 cars. This is the world's largest production on this type of car.

One big western dealer is begging our sales department for an allotment of 7000 cars. Think of this! A single allotment greater than the individual outputs of over 50% of all the automobile factories in existence.

Other dealers and distributors in the big eastern and western agricultural districts want several thousand cars apiece. Such is the initial demand for the newest Overland.

As we have told you in the past: the combined buying power of thousands lowers the cost for each individual. This year 50,000 will be bought. Therefore we can make a greater reduction than ever. Overland quantity production saves money for you—and lots of it. This year it is saving far more than ever before, because in addition to increased production we are building but one chassis.

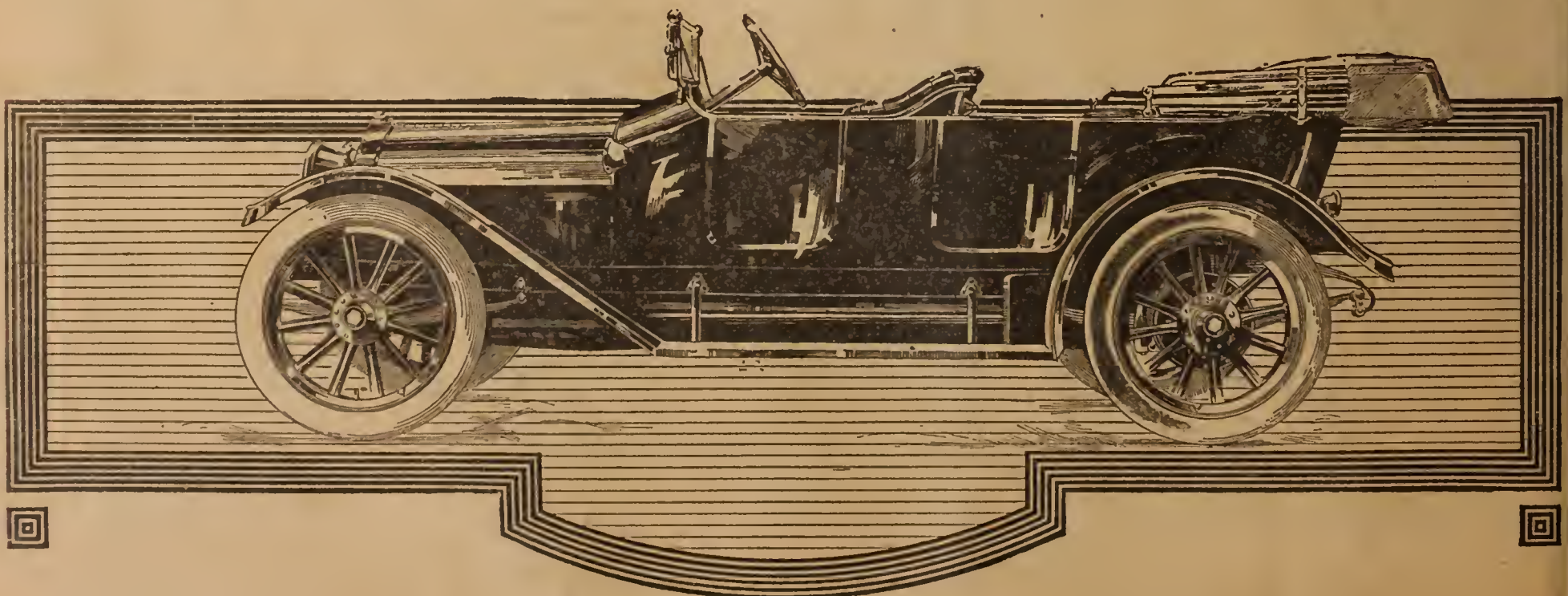
We urge you to see this new model at once. Feel what a difference the increased wheelbase makes in riding comfort; see the car's changed appearance; examine the beautiful new finish; inspect the many little refinements about the motor—making it resemble the motors in the big \$3,000 and \$4,000 cars. Examine the tonneau. Enjoy the increased lounging space and the Turkish upholstery.

Look up the nearest Overland dealer. Have a demonstration. Make the demonstration thorough; test the car's remarkable fuel economy. If you want an early delivery do not delay. Act today.

Write us direct for handsomely illustrated 1914 literature—gratis.

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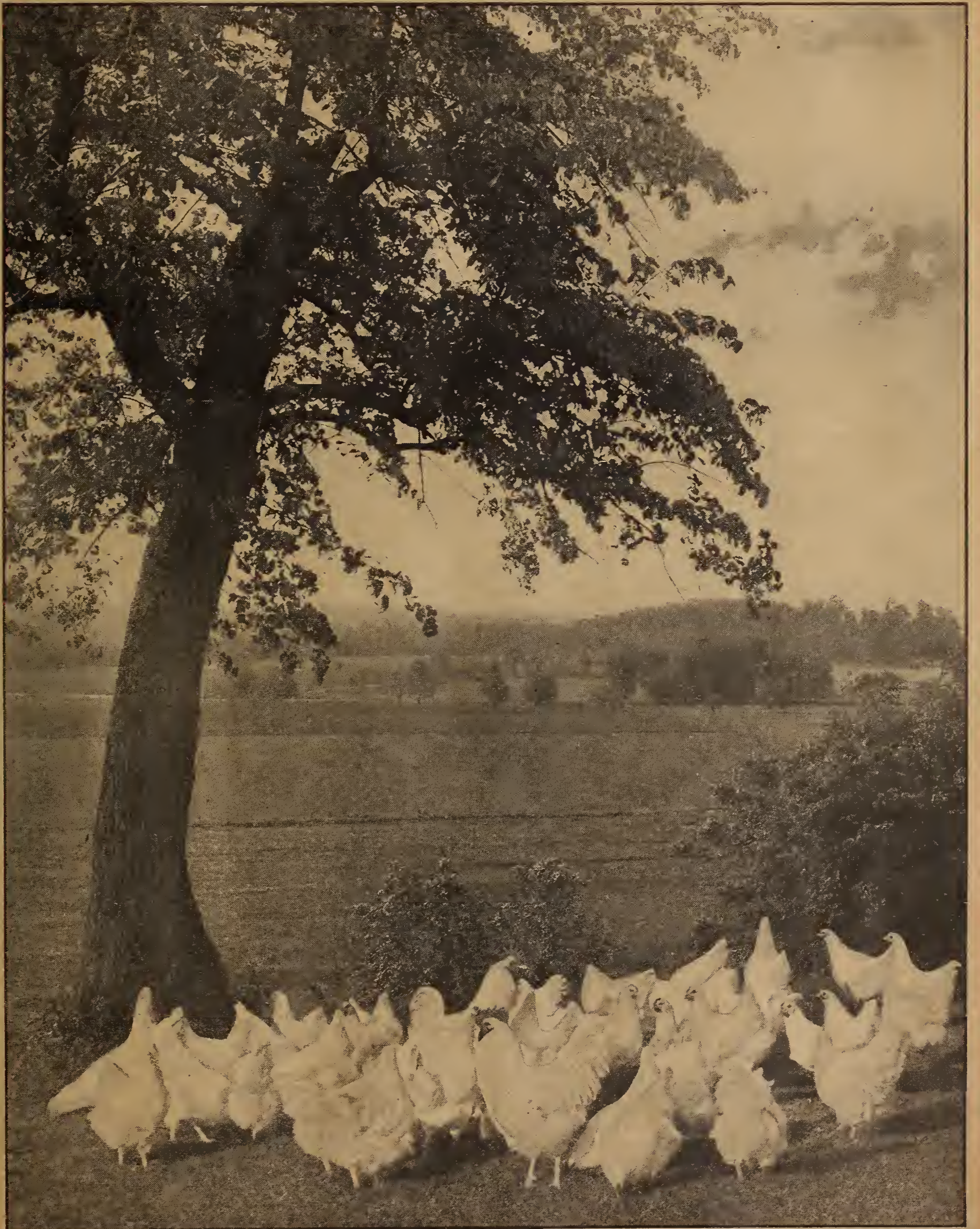
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FARM AND FIRESIDE

EVERY OTHER WEEK THE NATIONAL FARM PAPER

ESTABLISHED 1877

SATURDAY, AUGUST 30, 1913



THE POINTS OF INTEREST IN THE COMING NUMBER

Cover

FARM AND FIRESIDE reaches every State in the Union. The United States Department of Agriculture is working for every one of those States. That makes the cover which will appear on the September 13th number one of peculiar interest. It will present some of the leaders in this great national department.

Special Articles

The autumn season presents, on most farms, the problem of getting right prices for the products to be sold. One of the special articles in the opening columns of the next issue will discuss prominent phases of marketing. If you have anything to sell, or if you want to buy, for that matter, this article will appeal to you.

Farm Notes

The press reports from Kansas are recommending silos to utilize the corn crop, which has been reduced by the drought to such a state that the ears are not well formed. The silo is being argued on almost every farm. Most farmers could use at least one silo. Several articles in the next issue, giving the experience of a few of our readers, East as well as West, will show how the silo has worked out better farm conditions for them.

Crops and Soils

Many Americans have gone to Canada in search of opportunities not presented in the United States. Some of them have made a big success by the change; others have not. In the next issue, a farmer, now living in Saskatchewan, will tell why he looks pretty favorably upon American farms. His statement, of course, tells of his own experience.

The Market Outlook

We depend upon our regular contributors to supply our columns with the main market situation, but very frequently we ask some one else to cite conditions with which he is particularly familiar. Mr. B. F. W. Thorpe, Associate Editor of FARM AND FIRESIDE, who has had years of experience in Maine, will tell how the Maine farmers, by working together, have secured market changes which have been to their advantage. This theme of co-operation seems never to have an end. It is always interesting and is profitable, if applied.

More Letters from the Corn Lady

Miss Jessie Field, known as "The Corn Lady," will begin a series of letters to a rural school-teacher, suggesting in her own intimate and far-seeing way, methods of making school study and home life co-operate in creating efficient farmers' families.

Fashions

Two pages will be devoted to fashions, showing the developments of the tunic, Russian and other effects in the models for this fall.

Let Us be Sociable

In "Starting the Ball Rolling" ways will be suggested in which social intercourse may be made actually to lighten the labor of the participants.

A Way to Earn Money

A new and pleasant means of earning a small income is discussed by Mrs. A. V. R. Morris with great definiteness and precision in making plain layettes.

Shall We Leave the Farm?

The country woman who is seeking the opportunities offered to the city wage-earner will do well to read, before she buys her railroad ticket, "City Positions for the Country Girl."

Children's Page

There will be a picture, on the Children's Page, of an old shad-boat hearing in its bow a cannon to which is attached a hay-fork. Read the story, boys, and find out what the boat is doing.

A New Serial Coming

In this final number of the serial, the cause is discovered of the mysterious throbbing in Frontenac Cave, the adventures of our friends end, and Judson Pitcher finds Amy waiting at the mouth of the cave. When our new year begins with the issue of October 11th, our readers will be pleased to see the name of a favorite author below the title of the new serial.

WITH THE EDITOR

Better Babies in America

I visited the editorial offices of the WOMAN'S HOME COMPANION in New York the other day, and learned something. I learned that a big campaign is on in forty States, called the "Better Babies" movement. I

had read in the literature of numerous state fairs the announcement of prizes for babies, and I had wondered at the sudden popularity of the baby show. But I had not known that the "Better Babies" shows are something different from the baby shows of past days. I learned it from the woman who is at the head of the movement, Miss Gertrude B. Lane, editor of the WOMAN'S HOME COMPANION

I learned, too, how scientific and how fine in spirit and serious in purpose the "Better Babies" movement is. Many of my readers will visit state and county fairs where these competitions are held, and I want all of them to understand how big a thing they are.

We can all tell a good chicken, or a good cow, or a good horse at sight—or at least most of us think we can. And if we doubt our own abilities we can call in judges who, armed with expert knowledge and standard score-cards, can put the points of horse, cow, hog or fowl into figures.

But who knows a fine specimen of babyhood when he sees it? Of course our babies are perfect, and yours only a little less so, but what would judges with score-cards say? Until this was worked out by Miss Lane and her assistants, I believe there was no such thing as a score-card for babies. There certainly was no score-card in the baby shows of the past. The whole thing was either a catch-penny affair or a joke, the joke usually consisting in the embarrassing predicament of three incorrigible old bachelors drafted as judges.

Old Bachelors Do Not Know

The old bachelor—corrigible or incorrigible—could not qualify as a judge in one of the "Better Babies" contests unless he were a physician. The babies are no longer just "looked over" and judged by guess. They are measured in forty different ways, and weighed, and tested for intelligence and vigor, as well as for beauty and "cuteness."

And do you doubt what this means? It means that the doctors of the country are to have the opportunity of examining thousands and thousands of babies, not sick babies, which is the sort they usually see in their regular practice, but normal babies. The physicians will weigh and measure and study these men and women of the future.

And better than this, they will compare one baby with another. That's a thing one mother can never fairly do—compare. Because her infant is in the very nature of the case an incomparable child—"b'ness its 'ittle heart!" And she couldn't compare the baby with another anyhow, unless she measured it and noted all its points. And she couldn't note all its points without a score-card, which is merely a tabular statement keeping all the points apart.

All these thousands and thousands of score-cards will be preserved, and can be studied. Instead of having score-cards of sick people in hospitals, criminals in jails and penitentiaries, and lunatics in asylums, we shall begin to keep score-cards on ordinary, healthy, normal people—beginning with babies.

It seems almost too much to expect, but if this thing goes on we may one of these days know almost as much about our babies as we do about our pigs!

What Good Feed Will Do

What's the use of it? Well, for one thing, we'll find out how the best babies are fed. Important? It's the most important thing in babyland. Ask the Emperor of Germany if you happen to meet him. He'll tell you

that in his empire they are finding that a great proportion of the puny, weakling men who are not fit for soldiers are men who as babies were fed at a bottle instead of a breast.

The "Better Babies" fairs will no doubt show the same thing here. I am pretty sure that there are thousands of mothers who will read this who, if they find out from this great mass of experience that their babies will be likely to be stunted if fed on a bottle, will make a greater effort to suckle their babies. And that will mean bigger, stronger and more beautiful Americans a quarter of a century hence.

We shall find out, too, how best to provide a substitute for the mother's milk when a substitute must be found.

Last week I heard a lecturer say that every year 115,000 babies die from causes that might be removed. This means that as many young Americans die unnecessary deaths every year as were actually killed on the field of battle in the Civil War!

Do you see what is coming in the "Better Babies" movement? Better mothers and better fathers. That is, fathers and mothers who treat their babies better. You can't change the child's heredity by care, but you can change its surroundings so as to develop or stunt it. Waters, of Kansas, has taken pure-bred cattle and made typical scrubs of them by bad care. You can do the same thing with a pure-bred baby.

Do You Know These Things?

Caring for a baby is a task which requires knowledge and common sense. I know a young mother whose baby came down to death's door from starvation because she didn't know the symptoms of hunger in

an infant. She nursed the child at regular intervals—at a dry breast—and wondered why it wasted away. Its grandmother saw as soon as she laid eyes on it that it was starving. She had had experience.

But grandmothers need knowledge outside of experience. Call on Grandma for all the things she knows; but remember that our grandmas, on the average, lost fifty per cent. of their babies. Some say seventy per cent.

Go to the "Better Babies" show. Have your baby examined. Any one of these shows gives an examination which is worth \$25 of any parents' money. Take along the girls and young women. Listen to the lectures. Take home Baby's score, and see if you can't fill out the places that are deficient. And feed and care for the next one so as to avoid deficiencies.

Robert S. Linn

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Our Service Bureau

FARM AND FIRESIDE, in its editorial department, maintains a service bureau for its subscribers, the object being to answer such questions and solve such problems as arise from time to time among our readers.

Many subscribers have made use of this service bureau in the past, and so what we say here will give them no information.

But new subscribers should realize that when they place their names with the FARM AND FIRESIDE family they have the privilege of using this service bureau as often as they care to.

What States are affected? FARM AND FIRESIDE reaches every State in the Union, and no matter how far away you may live from the Springfield, Ohio, headquarters, your interests are our interests.

What subjects can be considered? Your questions may take up any subject relative to farm activity. And whether they concern the farm or the home our experts are at your service.

Technical questions or inquiries of local character are sometimes referred to carefully selected experts outside of the editorial staff, but FARM AND FIRESIDE vouches for their judgment and experience.

The point is: your question will be answered.

Write plainly, explain your exact difficulties, and be sure to give your name and address. These will not be published without permission.

Send your letters to the Service Bureau, Editorial Department, FARM AND FIRESIDE, Springfield, Ohio.

ABOUT ADVERTISING

FARM AND FIRESIDE does not print advertisements generally known as "readers" in its editorial or news columns.

Mention FARM AND FIRESIDE when you write to our advertisers, and we guarantee you fair and square treatment. Of course we do not undertake to adjust petty differences between subscribers and honest advertisers, but if any advertiser in this paper should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction.

FARM AND FIRESIDE is published every other Saturday. Copy for advertisements must be received three weeks in advance of publication date. \$2.50 per agate line for both editions; \$1.25 per agate line for the eastern or western edition singly. Eight words to the line, fourteen lines to the inch. Width of columns 2 1/4 inches, length of columns two hundred lines. 5% discount for cash with order. Three lines is smallest space accepted.

FARM AND FIRESIDE

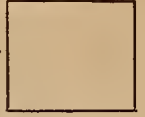


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Silver, when sent through the mails, should be carefully wrapped in cloth or strong paper so as not to wear a hole through the envelope.

Vol. XXXVI. No. 24

Springfield, Ohio, August 30, 1913

PUBLISHED
BI-WEEKLY

Breeding Long-Lived Horses

REEDING for efficiency has become the watchword with all who are coming to recognize the need of maximum production at minimum expenditure. The cow that remains profitably productive until she is a dozen years old and upward, the sow and ewe that produce and well nourish large and vigorous litters for a period of eight to ten years, the hen that lays six hundred to seven hundred eggs in three or four years, are now recognized as having unusual individual value to use as foundation stock from which to build up herds and flocks of profit-making descendants. Such females, be it remembered, are only one factor in this problem of breeding for efficiency. The sires in each class of stock count for even more than the dams. These scientific facts in breeding for definite ends have come to be pretty well known, but have up to this time seldom been followed in any systematic way in breeding poultry for laying.

If we grant—as we must—that heavy yields of milk and eggs depend on breeding for those particular ends and that the same rules hold true in the main in sheep and swine breeding, why should we not make more common use of this same system in the breeding of horses, to secure greater efficiency and longer life?

The mares that have remained vigorous, enduring, sound and true workers for twelve or fifteen years should, when mated with sires of similar qualities, be almost priceless as foundation stock for reproducing these qualities, if mated while vigor remains.

Every neighborhood has, or has had, one or more horses which have tirelessly labored for twenty and sometimes even forty years, while the rank and file of horses have worked under the stress of half these years. Why not grant these old horse pilgrims living and recently departed a roll of honor? FARM AND FIRESIDE readers can give an impetus to a movement for breeding horses of greater efficiency that will be country-wide by adopting the same scientific methods now being applied in breeding cattle, and more recently applied in the breeding of sheep, swine and poultry. Why not send us a little biography, and photograph when possible, of the venerable horses and mules that have labored a score of years and upward and are still efficient as workers or breeders?

We do not recommend the mating of very old mares to very old stallions as a rule. But for the purpose of perpetuating the quality of long-lived vigor, we think it should be done when the horses involved in the operation are good individuals which have shown their ability to stand a generation of service.

A Growthy Parcel Post

THE best thing about the parcel-post law is that it is a "growthy" law. It can grow without any additional act of Congress by mere order of the postmaster-general, and Postmaster-General Bursleson seems to be genuinely friendly to its "growthiness." He has made a change in it which is sure to make it more useful to us. This change raises the weight limit from eleven pounds to twenty—a very great addition to its usefulness to farmers. The requirement which called for a special parcel-post stamp is abolished. Ordinary postage stamps will carry packages hereafter. The rates are reduced for short-distance shipments too. It still costs five cents for the first pound in the first and second zones, but, after the first pound, packages for local delivery, either in town or on the town's rural routes, additional weight calls for only a cent for each added two pounds. Thus, a nineteen-pound package can go from the farm to town or the reverse for fourteen cents. The second

zone is changed so as to take in all territory outside the local delivery for about 150 miles, and the rate in it is five cents for the first pound and a cent for each added pound, or a twenty-pound package for twenty-four cents. This change of zones reduces the local rate and makes the old local rate apply for 150 miles in all directions. The insurance fee is also reduced. In the future the insurance will be only five cents for a parcel of a value up to \$25, and ten cents between the values of \$25 and \$50. These are important changes, and ought to result in an enormous increase in rural business.

Giving to the Public Schools

"A FARM of 160 acres has been deeded to the schools of Paola, Kansas. Money from the farm is used to buy books, clothing, etc., for boys and girls who wish a high-school education but cannot afford it."—*La Follette's Weekly*.

This suggests the thought that there must be many people in the country who would like to give money



"Well, Martha, it won't do any harm to let them tinker with it, but we won't use it if it doesn't suit"

and property to the uses of the public schools. And there is no danger that the schools will ever be too rich. Yet when the laws are examined, we find no generally existing provisions for the acceptance of gifts and legacies by the schools.

Such provisions should exist. There should be an invitation held out by every school for gifts and legacies. Millions of dollars are disposed of by will every year to educational uses. Once let it be understood that the public schools are ready to receive such bequests, and have made provision for their use, and the fashion of leaving money and property to the schools would set in. Why not?

Such a fashion would result in our gaining the point we have been talking about for years—better public-school facilities.

Better Credit Facilities

THE article in this issue by Mr. James B. Morman will give every reader a good general idea of the sort of banks the farmers of Europe find so beneficial. It is perfectly obvious that it will pay to borrow money on any farm, if the interest is low enough to leave a profit on the deal. Low interest, long time and easy payments are necessary for profitable borrowing. With these must be combined perfect freedom from every element of loan-sharkism. These conditions the Raiffeisen banks seem to offer.

Government aid may or may not be essential, but there can be no doubt that the proper sort of government aid would help. State or federal inspection and, what is quite as important, the assistance of experts in organization and management would help quite as much as money assistance.

The Government has in its control a great many millions of the people's money deposited in postal savings banks. This is reloaned to ordinary banks at two and a half per cent. Can anyone give any good reason why these funds should not be reloaned to farmers' co-operative banks when properly organized, properly officered and properly run? Under such conditions the loans would be absolutely safe. The Raiffeisen banks of Europe hardly ever lose a debt.

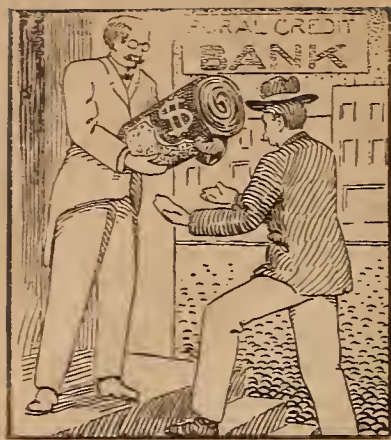
Not the Swivel-Chair Type

AND now we have the college professor arrayed in overalls. We say "arrayed" because not many of them so dress. There have always been, in collegiate institutions, men who took a real active interest in the affairs of the institution other than the dignified, swivel-chair work, which of course is necessary; but such individuals have been few. We do not know of any institution, as an institution, taking up the manual work of the campus, previous to the report of the Oregon Agricultural College stating that all repairs and campus transformations are to be personally managed by professors. Prof. E. P. Jackson has assumed the entire management of all the carpentry and wood working in buildings undergoing repairs. The plumbing is under the direction of Profs. M. P. Phillips and C. C. Wiltshire. These men, together with others of equal rank and position, are donning overalls and putting into practice what they teach. They are experts—why should not the college campus benefit by that knowledge? The example is extremely wholesome.

Coal Use and Waste

NO MIND can grasp the quantity expressed in the figures of our coal production in 1912. United States Coal Statistician Parker states the astounding amount—534,466,580 tons of 2,000 pounds each. This is more than five times the amount mined thirty years ago. A recent publication of the Government estimates the life of our coal-mines at some 4,000 years. But this estimate was based on the present rate of burning. If the consumption is multiplied by five every thirty years, the supply will run short in the days of our grandchildren—and even of our children. A report made about six years ago, stated our coal supply would give out in 150 years—as we remember the figures.

Civilization as we know it is impossible without coal. From one half to three fourths of the coal in the earth is wasted by the present methods of mining. If the mining were changed so as to take out all the coal it would be more expensive. Here's a great national problem for us, and it will be greater in twenty years. Americans should be thinking about it.



Real Rural Banks

Are European Systems Suitable for America?

By James B. Morman

ONE of the oldest forms of societies which aimed to borrow money on land as security are the "Landschaften," or mortgage-bond associations, of Germany. These date back to the reign of Frederick the Great and came into existence about the year 1769.

The Seven Years' War had practically ruined the wealthy landowners of Prussia. In order to increase crop yields, their land had to be improved if they were to be carried through the crisis. They thereupon adopted the following plan to secure the necessary money:

The landowners of a district united to form a society. Each landowner pledged his land as security for the debts which his society might contract. The society then asked for loans from bankers, and offered as security not one farm of doubtful value, but the entire landed estates of a district. The method by which a member secures a loan works out in the following way in Germany:

How a Landschaften Loan is Secured

A landowner who is a member of a district society goes before the officers and requests a loan. He can borrow up to a certain portion of the total valuation of his land, but he has to submit to certain restrictions for the protection of the society. As all his fellow members are liable for the loan on his land, the society is very careful to safeguard itself against speculation or risky business transactions. If the officers approve the member's request for a loan, a bond is given to him which draws a rate of interest varying from three and one-half to four per cent.

The borrowing member takes this bond to the nearest bank and exchanges it at face value for cash. In return he becomes a debtor to the society for the amount of the bond and has to pay the society from one-half to one per cent. more interest than the bond draws, thus making his interest rate from four to five per cent. at the utmost. The added interest pays the expenses of the operation of the society.

The landowner pays back his loan to the society by degrees. As the society is an institution to exist as long as the landowners exist, it is enabled to spread the borrower's payments over fifty or seventy-five years, if necessary. These land bonds have such good security behind them that the banks which accept them can readily negotiate them in financial circles anywhere in the German Empire.

The Landschaften, or mortgage-bond societies, have no shares and pay no dividends. If any profits arise they are used for reducing the loans. Since these societies and their borrowers are identical and the services of the officers are rendered gratuitously, they have been able to secure money on bonds at lower rates than any other kinds of companies. There are now twenty-five Landschaften societies in Germany, and the farm mortgages held by them exceed \$500,000,000 in value. The interest rate runs as low as three and one-half per cent. and rarely exceeds four per cent. per annum.

The Famous Credit Foncier of France

The Landschaften are practically the only societies whose financial operations are confined to loans on farm lands. The Crédit Foncier of France is another bank which has been more or less commercialized. This famous institution was formed in 1852 under the law enacted that year for organizing the land credit and improving agricultural credit facilities. It was immediately placed under government control. This is the only land bank in France, and many of its most important features were taken bodily from the Landschaften societies. Loans are made by this institution on almost every kind of property except on theaters, mines, and quarries which are not regarded as safe. Nevertheless, when the Crédit Foncier makes loans to farmers, they may run for periods ranging from ten to seventy-five years, and the loans may be retired in very small instalments year by year. In this manner this institution is of some advantage to landowners.

The Landschaften and the Crédit Foncier have been the models for land banks throughout Europe. The underlying idea of the Landschaften is co-operation among the landowners with unlimited liability the one for the other. There has been a tendency in late years to restrict the liability of members, and under this new form of Landschaften organization there is opportunity for greater development and usefulness. But the basic thought in both is co-operative action, and this is what American farmers must realize in order to reap the benefits of any system of land banks.

While the preceding is an outline of the systems of European credit adapted to large landowners, they by no means meet the needs of the great mass of small farmers, many of whom can offer no land as security for their loans. But money at times is of greater importance to the struggling farmer on a small holding than it is to the wealthier and larger landowner.

There are two general systems of personal-credit banks in Europe, known respectively as the Schulze-Delitzsch system and the Raiffeisen system. The

former is not of so much interest to the farmer as the latter. When Francis Frederick Schulze, of Delitzsch, Germany, organized his popular banks they were intended primarily as a means of furnishing cheap personal credit to artisans in towns. Later their operations were extended to include farmers, and this they have continued to do up to the present time, notwithstanding the rapid development of the rural-credit banks of the Raiffeisen type which are entirely rural in their membership and operations.

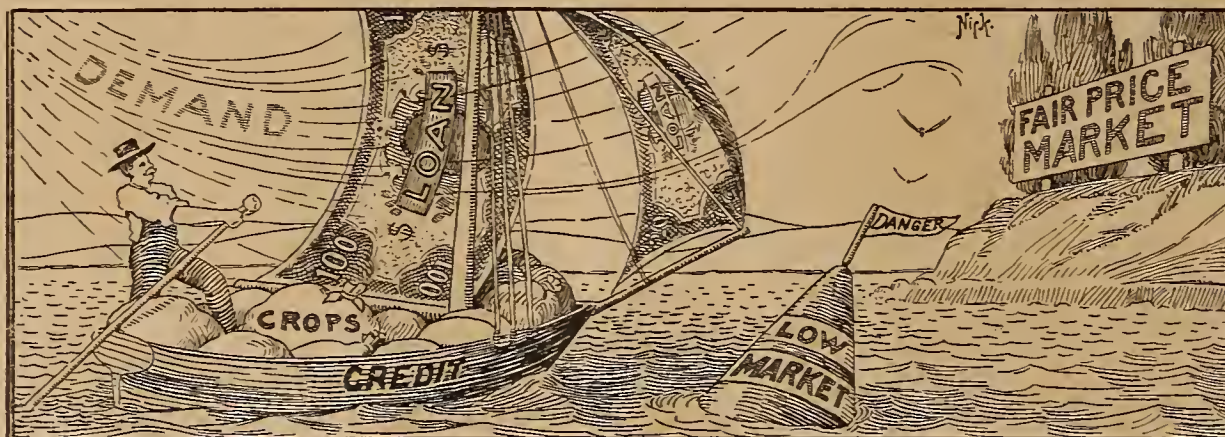
The principle of rural-credit banks in Europe is that of the organization of prospective borrowers themselves into societies in order to obtain by united effort the credit facilities which could not be secured by individuals.

Loans from Local Rural-Credit Banks

The necessary capital for making loans is derived by the sale of shares among the members, by entrance fees in some banks, and by the accumulation of small deposits. Under these circumstances it has always been more or less of a problem for rural-credit banks to secure money enough for loans to meet the requirements of the farmers, especially at certain seasons of the year. This fact gave rise to the encouragement of rural credit by government aid.

Throughout Europe the members of Raiffeisen rural-credit banks are farmers, a great many being peasant proprietors. The operations of a bank are confined to a restricted area, so that all members are practically known to each other. This system of rural banks is founded on mutual confidence and collective liability; the members not only know each other personally, but are also able to see from day to day the manner in which their money is being employed.

The credit granted is usually personal credit. It rests on the standing of the farmer in the community. Although the Raiffeisen banks occasionally grant loans on mortgage for long periods, they generally confine themselves to the making of loans for comparatively short periods of from six months to one year, with a maximum of from three to five years. Loans are made



for productive enterprises only; that is, for the carrying on of farm work, the returns from which it is calculated will furnish the means of repaying the loan. If for any reason the loan cannot be paid when due, the farmer has no difficulty in getting it renewed without extra charges to suit his convenience. This is especially the case with small loans made on personal notes to run ninety days at four per cent. interest. Such loans are also made to borrowers not members of the rural-credit societies, but to non-members five per cent. interest is charged. In this manner industrious farmers, gardeners and others engaged in any form of rural industry have no difficulty in securing credit for productive purposes through their rural-credit banks, usually at about four per cent. interest. To encourage industry and thrift, deposits by farmers in rural banks are allowed to draw interest at four per cent.

The management of these banks is practically gratuitous, the only paid officer being usually a secretary-treasurer who receives a small stipend to cover the time actually spent in behalf of the bank. It is the method of securing their capital as well as their small operating expenses which enables the rural-credit banks in Europe to make loans at such low rates of interest. If profits arise they are usually employed in building up a reserve fund or in the creation of institutions of public utility.

The application of rural credit to personal needs has shielded the small farmer from usurious interest, has helped him in the purchase of fertilizers, feeding stuffs and other raw materials, and in the purchase of live stock for winter fattening.

How Credit Regulates the Markets

But one of the chief advantages of agricultural credit has been its aid in regulating the price of farm products to the great benefit of the farmer. When harvest is over the crops must be sold. If the farmer is without money and cannot secure credit he usually sells at once when prices are low. Moreover, the very fact that large supplies are on hand has a tendency to keep the market price down. To counteract this falling market, the rural-credit banks furnish money to their members, who are then able to hold back their produce, and this tends to regulate the market and raise prices according to the law of supply and demand. This has happened over and over again, with such crops as cereals, potatoes, olives and other staple produce, since the formation of rural-credit banks.

The benefits which come to farmers as a result of the establishment of rural-credit banks have been the means of their spread into every country of Europe.

Germany has 15,517 rural banks; Austria, 5,880; France, 3,338; Italy, 1,855; Belgium, 643; and Ireland, 234. In Germany the loans made in one year amounted to \$1,425,000,000, and in Austria to \$86,772,253. The saving in interest to the farmers every year is an item of no small figure.

Governments are slowly recognizing that agriculture is the only universal industry, and that its encouragement is justified by the results which accrue to the whole nation. For my part I can see little difference in the government aiding rural credit than in aiding agricultural colleges and experiment stations, except that in the former case the state or government only lends money, whereas in the latter case it spends it. And the state or national government will be practically sure to get its money back if it should be loaned to promote rural credit on easy terms to farmers. In France, where more has been done along this line than in any other country, the rural banks have the reputation of never having lost a cent by the non-payment of loans by farmers. Government aid to rural-credit banks has put agriculture on a firmer basis in France than in any other country in Europe.

What the Commission Did in Europe

A credit society or bank is governed by a board of managers, a council of supervision and a secretary-treasurer, the latter alone receiving compensation. These are appointed at a general meeting of all the members. As the society grows in membership and its business enlarges, it builds its own bank if the general meeting so determines, borrowing the money for the purpose if necessary. The managers look into the requests for loans, see to those that are outstanding, attend to those which mature, examine the treasurer's accounts, draw up the reports and supervise the operations of the bank in general. Nearly all the societies run their own banks and own their own buildings.

The importance of the subject of agricultural credit and co-operation in the United States led to the appointment of a commission to visit European countries to study the various systems in operation. This commission was composed of seven members to represent our Government, and of one or more representatives from each of thirty-six States and from four provinces of Canada. This great body sailed from New York on April 26th, and returned on July 25th. Inquiries were conducted directly by the whole commission in Italy, Hungary, Austria, Germany, France, England, Ireland and Wales; and sub-committees of the commission were sent to Russia, Denmark, Switzerland, Holland, Belgium, Norway, Sweden, Egypt, Spain and Scotland. By this method the commission was enabled to make a thorough study of agricultural credit, production, co-operative marketing and social organization in all parts of Europe. A report is later to be made to Congress, the governors of all the States, farmers' organizations, agricultural institutions and the farmers of America.

High Spots of the Commission's Investigation

This report will likely be submitted before the end of the present year, but a few of the findings of the commission with regard to rural credit and co-operation are of timely interest, and I give them here:

1. The organizations for providing credit facilities to European farmers follow the natural division into short-time personal credit and long-time land-mortgage credit. Both lines of credit are as highly organized and as effectively operated as are the systems of commercial banking. The prevailing rates of interest paid by farmers for short-time loans are four to five and one-half per cent.

2. The personal credit organizations have the form of co-operative societies, which furnish cheap, safe and elastic credit to their members because the farmers control their own finances and operate their societies at nominal cost and without seeking dividend profit for the members.

Land-mortgage credit has been so organized as to place collective security back of the bonds issued by land-mortgage societies. These land-mortgage institutions enable European farmers to secure loans at low interest rates; permit the privilege of repaying loans in small fixed annual instalments extending over a long period of time, in some cases as long as seventy-five years, although provision for earlier payment is provided if the borrower so desires; provide protection from advance in interest rates, and practically eliminate commission charges. Many of these personal-credit and land-mortgage societies are fostered by government grants, loans or special provisions of law. The bonds issued by the land-mortgage societies sell on substantially the same basis as any other banking, commercial or railroad bond on the market. Experience has shown that land-mortgage bonds are liquid assets.

3. The systems of land-title registration in the countries which possess such mortgage institutions practically prevent dispute of title upon mortgaged land. Provisions are also generally afforded these mortgage institutions which prevent undue legal delay in the recovery of loans from defaulting borrowers. [CONCLUDED ON PAGE 8]

An Orchard, a Woman, and Some Plain Facts

A Story of Kansas, but the Things That Happened Might Have Occurred Elsewhere

By Harlan D. Smith



In two years' time good trees, well-bearing ones.—

ment was to reduce codling-moth and curculio damage and to check any diseases. Ten weeks after the blossoms fell a fourth application, consisting of nine pounds of arsenate of lead to 250 gallons of water, was sprayed on the trees. The purpose of this treatment was to kill the second brood of codling-moths. The air-pressure of the sprayer was reduced to seventy-five pounds, and the poison applied as a mist on the fruit and foliage. The first three sprays were applied with a pressure of 175 pounds. A \$275 sprayer, bought by Mrs. Kotsch, was used. Because of bad weather a fifth treatment, scheduled for application three weeks after the blossom-fall spray, was not given.

The Net Profits Tell the Story Best

October brought a harvest of big, red fruit such as never had been seen in the Kotsch orchard. The woman manager looked at the loaded limbs and marveled. Here was the same orchard that, two years ago, had looked so worthless—the same trees she had ordered cut down!

Twenty cars of "ones"—the choicest fruit—were harvested. In 1910, which was just as good a fruit year, only two cars of "ones" had been found after a diligent search of the whole Kotsch orchard. There were also, now, three cars of "twos" and one of cider-apples. The total receipts of the crop amounted to \$8,070.50. Two years before the entire receipts were only \$1,960.69. The cost of spray, including labor, was \$212.83; of picking, packing and marketing, \$2,596.75. That left a net profit of \$5,260.92.

Mrs. Kotsch had entire charge of the picking, packing and marketing of the fruit. In addition to her work outdoors she does not neglect her accounts. It is through her careful system of bookkeeping that the results of her 1912 season can be given here. Mr. Kotsch, who is county treasurer, is deeply interested in the fruit-farm, but has little time to give to it.



—were made from those diseased and worthless

A NET profit of \$5,260.92 from twenty-five acres of apple-trees—and by a woman! Mrs. Frank Kotsch is her name. And this net profit for 1912 from an orchard on which the woman fruit-grower, only two years before, passed a sentence of death! She had looked at the one thousand loafing trees after the crop had been harvested that year and gave an order: "Their time of usefulness is over and they take up valuable space. Chop them out."

It had been a good apple year too, that 1910 season, but the yield was miserable. "The poorest apples I ever saw," her husband said. They were wormy and scabby and scrawny and drawn out of shape, as if they had suffered from rheumatism. Something certainly was wrong with that orchard. "We'll plant this ground to small fruits," the woman manager had told her men. "I'm done with apples." But there came to the Kotsch farm in Kansas one day an orchard expert. He was from the state agricultural college. Hearing of the verdict against the Kotsch trees, he had hurried over from another county to plead for their lives. He inspected the orchard carefully and looked at the apples. Then he reported to the woman manager. Those trees were ill, he said. Diseases and insects were responsible for the dead limbs and bad apples. All that was needed was spray—lots of it. That would kill the insects and cure the diseases. Did she care to try it? If she didn't he would do it for her, she to furnish the materials needed and some help. She agreed, wondering what the result would be, for she had never sprayed her trees. So the death-sentence was recalled.

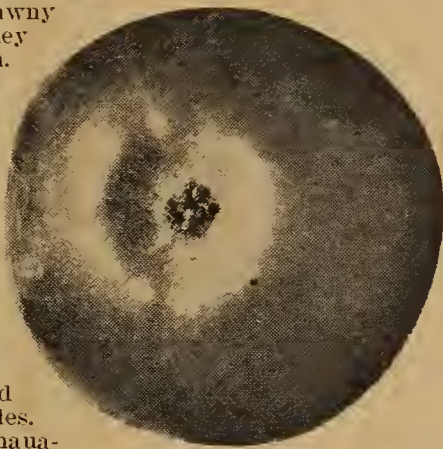
The season of 1911 was not a good apple season. Frost killed most of the buds. Only one fourth of the trees in the Kotsch orchard bore fruit. None had a full set of apples. But the "college man" came and sprayed all the trees that had apples, using Bordeaux mixture and lime-sulphur as poisons. Five times he applied the mixtures. The results were remarkable. The net returns from only a fourth of the trees were as great as from the entire orchard the year before. There were no rheumatic apples either. Looking on and learning how it was all done, the manager was convinced and pleased.

Four Thorough Sprayings Were Given

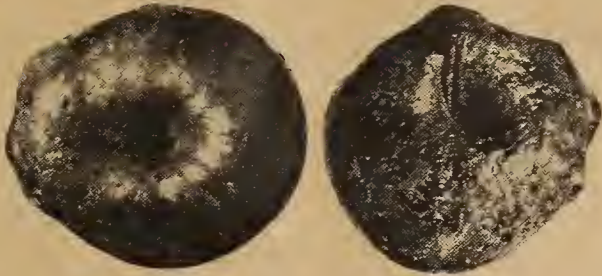
Early in the year the orchard was pruned carefully. Then about the time the buds opened the first spray was applied. This was composed of eight pounds of lead arsenate and six gallons of lime and sulphur to 250 gallons of water. Every tree got about ten gallons of this mixture. This spray was to prevent curculio damage and apple-scab.

At the blossom-fall a second application of the first mixture was applied. Ten to twelve gallons were put on every tree. This application was to prevent damage by codling-moths and curculios.

The third spray, made the same as the first two, was put on ten days after the blossoms fell. This treat-



OF course the trees that had "rheumatism" could not produce good apples, and of course the trees that were well had no difficulty in supplying an abundance of "ones." These four representative apples tell the story. Look! Listen!



The manager of the Kotsch fruit-farm also sold some \$1,000 worth of small fruits during this last season. This income was from five acres of strawberries, seven acres of raspberries and six acres of blackberries. The entire expense of picking and marketing these fruits was \$1,733.50, which left a profit of \$2,242.25. Add this to the profits on the apples, \$5,260.92, and you have the net returns from the Kotsch farm last season—\$7,503.17.

Five million bearing apple-trees in Kansas yield only one-half bushel apiece annually. Nearly eight bushels of apples for every tree was the average yield in Kansas orchards where spraying was conducted last season.

To many farmers spraying was "too much trouble." It required a small outlay, and the orchard had to be treated several times during the season. One man, for example, had grown good apples years ago without spraying, and he guessed he could do it again. So he didn't spray. And he didn't harvest—much. For when the curculio, codling-moth, scab and blotch—the standard orchard pests—get a good hold on an orchard,

as they can do in a very few years, there are not many big, red apples to be picked when September and October come. Those apples that have not already rotted and fallen remain on the trees to deceive the owner. Inside every blessed one of them, usually, is at least one worm and sometimes a half-dozen. They are deceivers from start to finish.

So, to show the small orchard owner what he was losing by not using the sprayer, the professors at the agricultural college left their desks and, selecting several orchards at random, went out to spray—to illustrate their point, if you please. And they illustrated it. In seven orchards in 1910 they did it, twelve last year, and eighteen this past season.

Parts of all the orchards treated were left unsprayed for the sake of comparison. There was the Isham Buckmaster orchard near Fort Scott, for example. Mr. Buckmaster never had sprayed before, and his orchard was alive with apple diseases. The year before there had been scarcely enough apples to pay for picking. But when the request went out from the college for orchards to work in, the Buckmaster orchard was offered. The men came down from the college and sprayed this orchard four times. About one half of the five acres—105 trees—was treated. And from those 105 trees 456 bushels of choice apples were picked and sold for \$1.65 a bushel. That brought a total of \$752.40. But Mr. Buckmaster had neglected to thin his fruit, consequently there were a good many small apples. They were sound enough, but hardly large enough to be marketable. So into the cider-mill went the small apples. Out came twenty-two barrels of cider which was sold for \$12.50 a barrel. That made \$275 more. Then the windfalls were picked up and sold. These brought enough to pay for the picking and packing.

Adding all expenses, including \$33 for a barrel hand sprayer which was still good for many years' use, the total expense of spraying the orchard was \$60. That included the cost of the spray, but not the wages of the men from the college, as they were paid by the State. Then, adding the profits from the 456 boxes, \$752.40, and the cider profits, \$275, Isham Buckmaster found that a total of \$1,027.40 had been made on his 105 trees. Deducting the \$60 for expenses, a net profit of \$967.40 was made.

The Piles Below and What They Mean

The photograph at the bottom of the page is worth studying. The three piles on the left-hand side show the yield of a sprayed tree. Observe the large number of "ones" in proportion to the others. The three piles on the right-hand side are the yield of an unsprayed tree. There are almost as many "twos" as "ones" and half as many culls as "twos." All of the apples from the unsprayed tree did not make as large a pile as the "ones" from the sprayed tree. The number and grades of barrels or boxes in which your own apples are marketed will tell you in a similar way whether you are spraying properly or often enough.



"Ones," "twos" and culls from a sprayed tree

"Ones," "twos" and culls from an unsprayed tree



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TWENTY USES FOR OLD HORSESHOES

Canvas-Cover Weight



THE best thing that old horseshoes can be used for is told on page 8 of the June 21st issue of FARM AND FIRESIDE, namely, for weights on canvas covers for haycocks. The canvas covers protect the hay until you are ready to haul it.

MRS. C. N. CLUXTON.

Holds Chicken-Netting

WHEN you put down your chicken-netting do not take the trouble to cut a forked stick to fasten it to the ground, but take some large horseshoes that are lying around handy.

C. H. ECKEL.

The Gate That's Quick



WHY not take some of the old horseshoes that are hanging around the barn and make gate-fasteners of them. The horseshoe is nailed to post (A). The bolt extending from wheel (B) is then placed into the horseshoe.

ALFRED VAN NOY.

Better Than the Original

MY BEST use for the old horseshoe is to nail it on the side of the wagon-bed where the front wheels rub when turning. Just nail it on with a few small nails, with the bend of the shoe just reaching the bottom edge of the side board. It keeps the wheels from cutting into the bed, and the wagon cannot be easily cramped, as in the case with the irons which are put on the wagon-beds when made.

THOS. E. O'CONNOR.

A Good Mud-Scraper

A NEAT and artistic mud-scraper can be made by using several horseshoes. Fasten them on a strip placed between two small posts or on one large one, placing the shoes on the opposite side from where you will stand to prevent them from coming loose. Shoes of uniform size make the best appearance. The illustrations show two successful ways of arrangement, which can be modified to meet special needs in special places.

M. K. HAYS.

The Good-Luck Hinge



TAKE a piece of two-by-four and sharpen one end. Then make the other end about as big around as your wrist, and use it for one end of your gate, then set a block of wood down in the ground beside your post. Make a hole in the block to fit the end of two-by-four. After gate is made, place sharpened end of two-by-four in hole in block, and then place an old horseshoe around the top; and nail tightly to gate-post.

S. B. PHILLIPS.

Protects the Feed-Manger

WHERE you tie your horses bore a hole about two or two and one-half inches in diameter in the top board of the manger, and place a horseshoe around it on the inside. Nail it on well. You can then tie your halter-ropes in the hole without fear of the horse breaking or splitting off the board.

MRS. OSCAR OLSON.

To Hold Trellis Strings



TIE the trellis strings to the horseshoes embedded in the soil, as shown in sketch. Such an arrangement can be used for Lima beans, peas, and even for honeysuckle, woodbine, sweet-peas, climbing nasturtiums, and the like.

ALFRED GRANT.

Horseshoes and Boys

SOME people place horseshoes over their doors to bring them good luck, and others make a more sensible use of them by nailing them to studding of the stable walls for hooks; but I think the best use I ever made of old horseshoes was for pitching quoits.

At times when the ground is too wet to work, or whenever a little time can be

spared for recreation, select a set of the heaviest and roundest of the shoes, drive stakes fifty feet apart, and have a game of quoits.

It affords good practice for both the eye and the arm, and has the advantage over some other games that it can be played by two persons, although if four play it saves walking back and forth between the stakes.

This old home game may help to keep the boys from cards and other games and sports of doubtful influence; and, if so, what better use can be made of old horseshoes?

R. J. ARTON.

A Strong Door-Handle

A STRONG handle suitable for heavy barn doors can be easily made from an old horseshoe. Select one that is fairly smooth, and put it in a fire till hot enough for two inches of the points to be bent back at right angles without breaking. When the horseshoe is cool nail or screw the points to the door, and then you have a strong handle.

H. A. SMITH.

Takes Place of New Post

CHESTNUT posts split easily after they are mortised, and every year a few are found split, but can easily be brought together with an old horseshoe nailed across the crack. This will make a much stronger job than by nailing post together. If post is split from top to bottom two shoes can be used, one near top of post and one near bottom.

WILBUR LOWE.

Handy Hingeless Gate

NAIL the flat side of one horseshoe to left side of right post and the other one to right side of left post. Have them project out far enough to put a gate on. If you are driving cows from or to the pasture-field you can lift either end out of the horseshoe and slide it back far enough for the cattle to walk through. If you want to drive through with a load of some kind lift the gate out of both horseshoes, and set it to one side.

THOS. J. TROXELL.

Announcement and Awards

THIS page is the first instalment of the horseshoe contest. It contains the best of the earliest contributions. But so many other uses for old horseshoes have lately been received that another instalment will be needed to give proper recognition to American ingenuity in this line. Some of the letters sent in were practically duplicates of similar ones on this page. Preference was given to the contribution that was clearest.

A subscriber who visited FARM AND FIRESIDE just at the time we were finishing this page called our attention to the fact that no one need expect good luck if he placed the horseshoe over the door with the open part down, as shown in the heading of this page. The open part should be up, to catch the good luck, he insisted. Perhaps that is the reason why so many of the horseshoes fail to be effective in a good many of our homes.

Prizes for this page have been awarded as follows. The three first prizes of three dollars are:

- "Canvas-Cover Weight," by Mrs. C. N. Cluxton.
- "Holds Chicken-Netting," by C. H. Eckel.
- "The Gate That's Quick," by Alfred Van Noy.

The three second prizes of two dollars each are:

- "A Good Mud-Scraper," by M. K. Hays.
- "The Good-Luck Gate-Hinge," by S. B. Phillips.
- "To Hold Trellis Strings," by Alfred Grant.

The next contest will be devoted to the best home-made wheelbarrows and hand-carts. Tell in not over two hundred words the best way to make the best wheelbarrow or hand-cart you know of, also give practical ways of using them to lighten farm labor. The cash cost of making them must not exceed three dollars, but this amount need not include the value of discarded wheels or machine parts commonly found on farms. Wherever possible a sketch should be furnished. All contributions to this contest must be mailed on or before September 20th.

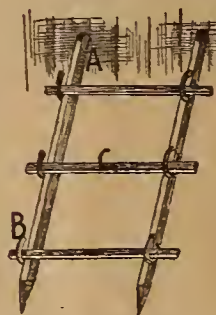
Inside Latch for Doors



SOMETIMES you want to fasten your barn doors on the inside and haven't a good latch handy. Drive two large iron staples, one in each door, close enough to allow a horseshoe to slip in. Fasten a wire to the horseshoe, then to the door.

W. F. McMASTER.

Removable Chicken-Roosts



TO MAKE removable perches for chicken-roosts, take two two-by-four scantlings as long as desired. Sharpen at lower ends and stick in ground a little way, and lean the upper ends (A) against hen-house wall. Now nail old horseshoes down one side of each scantling about one and one-half feet apart, making each horseshoe (B) form an upward projecting hook. Now take slender poles (C), and lay from hook to hook on opposite sides. Such perches are easy to remove and clean.

MRS. M. J. CROW.

A Good-Luck Knocker

AT A little cottage we found a clever knocker made from an old horseshoe. This was arranged by placing two strong hooks in the middle of the door about eight inches apart; on these was a small steel rod which went through holes in the under side of the heel ends of the horseshoe.

This allowed it to swing freely out away from the door, and the closed end could be rapped sharply against a thin piece of metal which was screwed to the door at just the right spot to give the most resonance.

MAY VISSCHER.

Horseshoe Oar-Locks



YOU will find horseshoes very useful when used as oar-locks on a canoe or skiff. Nail the shoes on the inside of the canoe with the round part, or toe, of the shoe nailed to the canoe, letting the heels of the shoe extend upward.

E. P. TACKE.

Used in 1840



THIS shoe represents the shoe of a pony my father owned some time in 1840. As long as I can remember, my mother used it on ironing-day as a stand to set her irons on. I also have enjoyed using it for the same purpose.

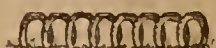
ELIZA ALCON.

Horseshoes as Andiron Legs

MY SON used a pair of horseshoes as legs for my andirons after the original ones were broken off. The shoes were bolted to the short legs that were left on and were unique as well as useful. In like manner horseshoes can be made to serve as legs for boxes and chests by nailing them to the sides and allowing an inch or two of the heels to project.

MRS. WM. A. CURTIS.

Border for Flower-Bed



OLD horseshoes make pretty borders for flower-beds. I have used them, as sketched, for a number of years. To make them last a long time, paint them, giving at least two coats. White and dark green give especially pleasing effects. The same idea can be used for outlining paths and walks or, when painted a light color, for marking the places where young shrubs and trees have been set out.

MARGARET STATHAM.

A Universal Hook



AN OLD horseshoe makes an ideal hook for harnesses, or to hang milk-pails or lanterns on. Just beat the shoes, straighten, draw out, and bend.

MRS. JOHN D. JACOBS.

Crops and Soils

How a Boy Raised 133 Bushels of Corn on One Acre

By James S. Westcott



HUGH W. GUNNELL, Jr., the fifteen-year-old boy who raised 133 bushels of shelled corn in 1912 on one acre of Virginia land, had some methods worth noting.

The corn raised was Boone County White.

The land on which it was raised was a heavy loam with a stiff sod which had not been broken up for several years and which was rich in humus. In the fall of 1911 it was covered with thirty-five loads of barnyard manure and plowed with a two-horse plow. In the spring of 1912 it again received a covering of fifteen loads of manure and was harrowed with a spring-tooth harrow and a drag, mixing the manure thoroughly with the soil and pulverizing the soil until perfectly smooth. It was then marked off with a single-shovel plow, the rows running north and south and three and one-half feet apart. One sack of prepared corn fertilizer was scattered in the rows and the corn dropped by hand and covered with a corn-coverer such as is common in this section. It was aimed to plant the corn fourteen inches apart in the rows. Afterward the corn was thinned to that distance when necessary. The date of planting was May 21st. The corn was harvested about September 25th. The cost of the crop was twenty-three cents per bushel.

The Cultivation Was Shallow and Level

The corn was worked three times during the season with a one-horse cultivator. The cultivation was shallow and level. During the summer a severe storm with wind swept over the field, blowing down and half uprooting much of the corn. The down corn was allowed to right itself under the influence of the sun.

In addition to the corn raised on this acre there were 365 bunches of corn-fodder tied with three-and-one-half-foot strings and worth in the open market four cents per bundle.

The account, therefore, stands as follows:

70 bushels of corn contracted to Agricultural Department at Washington, at \$2 per bushel	\$140.00
63 bushels not disposed of, allowing that it may be sold in the market as ordinary corn, at 60 cents....	37.80
365 bunches corn-fodder, at 4 cents.	14.60
\$20 premium received from the county	20.00
A trip to the Corn Exposition at Columbia, South Carolina	30.00
Total of returns	\$242.40
Cost of manure, plowing, rent of land, fertilizer and working of corn, including harvesting	\$30.59
Total net receipts	\$211.81

Manufactured fertilizer played a small part in the yield. One row, the last, received none. There was a better stand of corn in this row and as good a yield as in the other rows. The corn received good care throughout the summer, but no special treatment. Care in cultivation and the richness and thorough preparation of the land are largely responsible for the good crop. The Boone County White corn, according to the winner, will yield more to the acre here, because it can be planted closer than almost any other corn and not interfere with the growth of the ears on the stalks.

Our usual method here is to plant corn three and one-half feet apart each way and thin it to two stalks to each hill. Old corn-raisers did not think that the boy would raise corn by planting in rows and as close as fourteen inches in the row.

Make Way for Bacteria

Why the Farmer Should Stir the Soil and Keep It Full of Lime

By C. L. McArthur

WHEN bacteria take free nitrogen from the air circulating in the soil and build it into plant-food the process is known as "Nitrogen Fixation."

There are two groups of bacteria which do this sort of work, those which work in the nodules of leguminous plants, and those which work in the soil. These two groups are entirely different, and the bacteria which work in the nodules will not fix nitrogen in the soil, while those which work in the soil will not fix nitrogen in the nodules of the legumes. Of those which work in the soil, practically all work in the presence of oxygen. Only one organism does not so work. So far as known there

are at least five different organisms in the group, but only in the last twelve years have we known much about them.

These bacteria are very large, in fact two or three times as large as ordinary disease-producing bacteria. It is found that they are very active, and are able to fix considerable amounts of nitrogen in as short a time as ten days or two weeks. They are found in practically every farming section.

A good supply of decaying vegetable matter in the soil seems to aid these bacteria in their work. They get their food and energy from such materials. They usually work in the upper layers of the soil, especially in the first six or eight inches. This is probably due to the fact that they have free access to oxygen at this depth. Lime seems to be needed. Lime corrects soil acidity. Plowing or stirring the soil also seems to aid them in their work, as it gives them plenty of oxygen. The texture of the soil also has something to do with their activity. Bacteria will grow better and fix more nitrogen in a coarse, loose soil than in a fine soil. Their work also seems to be favored by the presence of certain other bacteria which are not capable of fixing nitrogen.

Actual additions of nitrogen to the soil through the work of these bacteria vary. There are instances where non-leguminous crops were grown on the same field for twenty years, and the supply of nitrogen did not decrease notwithstanding the fact that only non-nitrogenous fertilizers were used. In fields that have been plowed for a number of years and then allowed to go back the total amount of nitrogen has been found to increase as much as twenty-five per cent. in one year. This can only be accounted for through the work of these bacteria. In some of the Western States we find what are called "brown spots" on the surface of the soil. Wherever these spots appear vegetation soon dies. Within the last few years it has been proved, quite conclusively, that they are caused by the presence of an excess of nitrogen which is deposited there by these bacteria. The brown color is thought to be due to a coloring matter which is given off by the bacteria. These spots are not numerous, and it is not known why the bacteria are so active in these places. It is an example, however, of the immense quantities of nitrogen these organisms can deposit in the soil when all of the conditions are favorable.

This work is of considerable interest to the farmer because of what is accomplished in keeping up the fertility of the soil. He receives practically all of the benefit of their work without cost. The farmer can help them in their work by keeping the soil well stirred, seeing that there is plenty of humus and decaying matter present and adding lime to the soil if it is at all sour.

How Farmers Overreach

By C. E. Davis

YOU have doubtless read Aesop's fable of the dogs that tried to drink the river dry in order to get at the beef-hides soaking in the bottom. You have also heard of how China swept entire mountains clean of trees, even to root and stump, and killed the birds for food and for sale, with the result that China to-day is swept by alternate droughts, crop-failures and floods, and thousands die of starvation.

Yet we, in our eagerness to add a few more acres to our already unwieldy farms, are doing the same thing every year. Everywhere we see vast areas, especially of hilly land, denuded of timber, cultivated a time or two until the meager fertility of the first plowing is exhausted, and then left to lie, to wash into gullies during the rainy days or burn out to arid barrenness through the scorching summers.

Seed sown here burns out or the growth shrivels up in the shallow soil. Often nature steps in and covers its nakedness with briars, pennyroyal and wild-rose bushes, or reseeds it with a heavy growth of pine or locust. Lucky is the man if it be the latter, for the prying, persistent locust-roots do the work that clover should: pump fer-



Farm lands ruined by flood

The floods have their origin in badly deforested regions. The floods have their origin in badly deforested regions tility into the soil, and in the course of years would renew the fertility, besides furnishing timber for posts and fuel.

But in the meantime the natural coverts and nesting-places of our birds are destroyed, and they travel far to another farm that is not so denuded, where they make war on the entire bug tribe.

Where there are no hazel and other thickets there is no shelter for the quail

and other birds, and in the broad treeless fields the hawk has it easy killing birds.

I know of streams where mistaken farmers have chopped off every bush along the banks, with the result that in dry weather there is very little water; and after heavy rains the stream rises to torrential overflows, with nothing to stop it, and spreads loss and devastation in its course.

A field without some trees in it is ugly, besides being useless as a pasture, and you cannot farm it every year. When the ax is sharp and you are tempted to slash down a tree, stop a bit and think it over first. Don't be like the Chinese farmer of whom it is said, "When a Chinese farmer has nothing else to do he goes and chops down a tree for fuel."

Dynamiting instead of plowing is now being employed in some dry-farming districts. An effective way of "boosting" farm land.

If we avoided piling products around where rats and mice easily reach them, and if we kept granaries, cribs and other places of storage for fruit and farm products rat-proof, we would see or hear very little about the "Rat Problem."

Irish and Sweet Potatoes

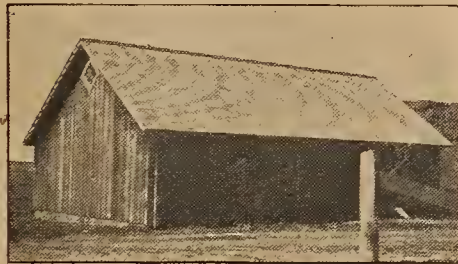
OHIO, Ohio Jr., Beauty of Hebron and Freeman, mentioned by me before, are, of course, "Irish" potatoes, so called, not sweets. They are not planted as slips, but as tubers. Southern growers prefer the Red Bliss, or Bliss's Triumph, and seem to have better luck with them than with the other sorts. All "Irish" seed as well as table potatoes were unusually scarce this year, and everything that was usable in that line was picked up. In ordinary years we can sometimes get hold of some left-over tubers that could be planted very late, and it might be interesting to make some trials in planting such tubers in the more southern States even in August. Perhaps it is not too late to plant sweet-potato slips. I have seen plantations started even this late.

T. Gr.

Same Binder Seventeen Years

By Raymond Olney

FARM machines when not in use need care. The trouble is that many of us farmers never stop to think how great is our loss when we leave our implements standing out of doors during the idle season, to be quickly destroyed by the elements. This treatment is by far worse than the service they get in the field. They will stand a great many years of work if properly cared for, but it does not take long



A good shed need not be expensive

for them to go to pieces when they are left where the sun and rain can get to them the year around.

My father bought a binder to harvest his crop in 1896. Altogether he has run it seventeen seasons, and during that time the total cost for repairs has not been over \$10. The machine is still good for many more years of service. Its long life is due to two things, the careful handling it has had while being used in the field and good shelter when idle. He still uses the set of canvases that came with the machine.

I have seen a great many farmers whose binders were ready for the junk-heap in four or five years, which is the average life of a binder. Why is it that the average life is not longer? Simply because we do not provide shelter to properly protect them when our harvesting is finished. Sun and rain cause much more damage than service. Moisture rusts the metal and rots the wood parts.

One thing of greatest importance in the care of farm machines is a good, dry shed to protect them from the weather. It need not be expensive, but should be so built as to keep out water and the direct rays of the sun, and chickens. It should have a good roof and sides free from cracks. It can be constructed from cheap lumber. The floor can be of cement, gravel, sand or anything, just so that puddles of water are avoided. Above all things have it dry. You can't have it too dry. Dryness prevents rust and decay.

What a great satisfaction it is to go to your machine-shed when you need a tool and find it free from rust and filth. Just consider the amount of labor that is required to put a dirty, rusty machine in shape before it can be used. If they are housed in a good, dry shed the saving in time alone will very soon pay for the expense of building it, to say nothing of the saving in the machines themselves. It will aid greatly in lengthening the period of their usefulness.

The life of a machine is increased from five to ten times by proper housing and care when it is not working. We who have tried it know that this is true.

If we could only take time, when we have finished with a tool, to clean it, make any necessary repairs and put it in such condition that it will be ready in a moment's notice when needed the next season, we would save much time and a great deal of expense.

The time of the year when we need a machine is usually when our time is the most valuable to us. Yet there are times



Such care as this will not—



—give the binder a long life

when many of us spend a half-day or a day on one machine, tightening nuts, cleaning gummy bearings and making many little repairs before we can use it. Often it is necessary to send to town for repair parts. If the dealer does not have them in stock the only thing we can do is to wait a few days until he orders them, and either run the machine with the old parts patched up or not at all. "Do it now" is a mighty good motto to follow in connection with the repair of farm machinery.

Immediately after you have finished with a machine for the season give it a thorough inspection and overhauling if necessary. I say immediately, because if you don't you are almost sure to neglect it entirely. Other work will come on, and you will consider yourself too busy to stop and put the machine in proper condition. And you have lost a good chance to save yourself a whole lot of very valuable time next season.

Just after you have finished with a piece of machinery you know more about what is needed to put it in good shape. If you wait you will forget many little things that, though little in themselves, are nevertheless important.

Think Now of Next Year's Repairs

First, go over it carefully, and make a list of new repairs that are needed or old parts that should be repaired. Then go to work, remove those parts, and have them repaired, or order new ones, as the case may be. When everything is replaced go over the machine carefully, see that all nuts are tight and missing ones replaced.

The next thing to do is to give the machine a good cleaning. Don't be afraid of using too much kerosene to remove the grease. A mixture of melted lard and kerosene is good to pour into the bearings. The kerosene will cut the hard, gummy grease. The lard will harden and keep the bearings free from rust. The bearings should also be re-babbitted if necessary.

A good coat of paint will many times more than pay for itself and the cost of putting it on. Then think of the satisfaction of hitching on to a good-looking machine which has been freshly painted. It not only adds to the appearance, but greatly helps to keep the metal parts from rusting and the wood parts from rotting. Paint is cheaper than wood and iron every time, and it doesn't cost much to put it on.

In the case of tillage machinery a very wise plan is to grease the wearing surfaces, such as cultivator shovels, plow moldboards, etc., with axle-grease or tallow, then the next time they are used they will scour readily. It is very disagreeable when an implement becomes rusty and gives considerable trouble in the field about scouring. It also takes a large amount of extra power to haul it until the wearing surfaces become bright again. In the springtime especially, when your horses are soft, any extra power is very undesirable.

After all this is done you can put the machine into that good shed of yours that I have just been talking about. You aren't giving your machines the best of attention when you paint and grease them and give them otherwise excellent care unless you have a dry shed to shelter them.

Now I haven't said anything but what I will grant that, with but few exceptions, every one of us knows. But here is the point. Many of us don't ever stop to figure up what a big loss it is to have farm machines stand out of doors. If we could all see it in the light of dollars and cents I think we would profit by it.

Farm Notes

Two Farmers

By Charles H. Meiers

JOE NEVERREAD, for many years, farmed in the same old way, with plodding toil and hope and fears; but could not make it pay. His crops grew lighter every year, until at last he found that they had dwindled, very near, to seed for all his ground.

Jim Readalot, not far away, farmed scientifically. He read a little every day, and learned ways whereby he could save his muscle and his time by exercising brains. He reached success while in his prime through methods that spell gains.

Joe tried to farm a vast expanse of land; and had to skim across the fields. There was no chance for breathing-spells with him. He fumed and fussed and worried till his hair was gray as lime; and still he had to trudge up hill, a loser all the time.

Jim concentrated effort on a small, well-managed tract, whereon, as blithely as a fawn, he moved about. In fact, his work gave him enjoyment; and before he lost his youth he made a fortune from his land. This tale is based on truth.

Ins and Outs of Silo-Filling

By J. S. Underwood

I HAVE had nine years' experience in feeding silage and have two silos on my farm. I think there is no safer investment than a lot of green corn stored in the silo. It is not so likely to burn as is hay, and if properly stored and cared for it will keep for years without deteriorating; in fact, the older the better for feeding purposes, for in its aging it undergoes a ripening process. But it must be carefully preserved.

In filling the silo there is sometimes a great temptation to use corn that is too green. Sometimes one feels that he can take advantage of changes in the weather to do work that would naturally be done at another time. But we must by all means wait till the corn is at its best for silage. The best time is when the corn kernels are out of the milk stage and are glazed and quite hard. This is my practice, though I find that some farmers put their corn in when the kernels are just a little out of the milk. I like the corn at that stage of ripeness at which it will keep out the air. That is the difficult thing about it when it is a little too ripe at cutting-time. It does not pack well, and the air gets in, and that produces mold. The corn should be cut when the lower leaves are still green, but are beginning to show the effects of the summer's heat. If I have corn that is a little too ripe and some that is not so much so I put in the ripest first so that it will come at the bottom of the silo. The result is that the enormous pressure above it keeps it packed tightly and keeps out the air, while if it were on top much air would work into it for some feet in the middle and for a long distance down the sides.

You May Lose Money

In the filling of a silo a man can easily lose a lot of money. He must plan his work so that the men that are running the silage-cutter will not be standing idle, but will be able to keep things moving. This will have to be regulated according to the distance the corn-field is from the silo, for there will be more lost time if the corn-field is half a mile from the silo than if it is close by. If the hauling is a slow job, then it is better to put the binder in early and let the hauling get a good start of the silage-cutter.

There are a number of things about the filling of a silo that must be learned by experience. One of these is to set the blower as nearly perpendicular as possible so that the wind will come from below and push the silage up. If the blower is allowed to slant the silage will settle on the lower side, and the wind will blow over it without disturbing it. To have the silo properly filled the silage must settle evenly. The leaves must not be in one place and the coarser parts of the stalks in another. It must be thoroughly mixed, and in my experience I have found nothing that will do this mixing so well as a man. The silage must also be tramped thoroughly next the sides of the silo, as there it is likely to lie so lightly as to permit the air to enter. The top of the silage should be composed of corn as green as it is possible to secure, as this will decay and seal the whole, thus keeping out the air. I find that too dry silage can be helped somewhat by running water into the top at filling-time and after the silo is filled and tramping the silage hard. The

idea is to get a hard, wet surface that will decay and keep the rest of the silage from decaying.

In localities where there are many silos they can be filled cheaper than where there are few. The isolated farmer who has a silo has to have more money invested in silage machinery of various kinds than does the farmer in a community where silos are numerous. In such a community the planting of the seed for silage corn can be so timed that the silage crop of one farmer will be suitable for the silo at a time a little earlier or later than that of another farmer. This makes it possible to use the same machinery on more than one farm and expense is reduced.

The farmer who will suffer himself to lift a heavy, dragging gate a dozen times a day, when half an hour's work would fix it so that it would swing free and easy, certainly has a screw loose somewhere.

Carnations for Local Trade

By L. E. MacBrayne

THE growing demand for carnations in the cities, which now calls for an annual crop valued at nearly six million dollars, has induced many farmers to turn their greenhouses from vegetables to flowers. Not all of them are successful, and the failure is often due to an improper handling of the soil. The most successful growers for the Boston market figure that in the course of a season's cutting each plant must renew itself three times, and the soil is figured accordingly. The basis is four inches of rich soil, in which sod has been rotted during the summer, to one of stable manure. To this is added later 250 pounds of ground bone to a quarter of an acre under glass. If nitrate of soda is used to brighten the plants it must be applied carefully, for it has a tendency to produce weak stalks. It is better to use half a ton of basic slag.—half this amount seems to have no effect at all.—for this goes into the stalk and adds greatly to the selling qualities of the flower. Two coats of cow-mannure, chopped fine for a mulch, are applied after the first month, followed by two applications of tankage. Sulphate of potash is twice used during the season for the foliage. This soil should be renewed each season.

The Dry Farmer's Silo

Perhaps It May be Used in the Humid Sections Too

By C. Bolles

THREE neighboring farmers got together last winter and dug themselves a silo apiece, at a cash outlay of \$3 each. And this was for cement to plaster up the walls and bottom. Each silo was twenty-five feet deep and eleven feet in diameter. Each was filled in a day by using eight men, an old horse-power and a \$116 cutter, though a cheaper cutter (\$75) would have sufficed. In digging these silos a steel hay-carrier cable was strung across the silo and the dirt hoisted out by a horse, the horse lifting a barrel having a false bottom that was easily dropped by means of a simple contrivance fastened on the barrel. By having this track run some distance from the hole, no further attention was given the dirt after dumping. After the silos were dug the cable was restrung into the barn, so the silage was run directly into the feedway rather than packed in a tub up a ladder out of the silo and thence to the feed-boxes.

But underground silos are yet in their infancy, if we take my State, Nebraska, as the criterion. The first one was put down here in the fall of 1911. By the fall of the following year fourteen more were dug and ready for winter service.

From time to time the question of gas forming in the bottom of these silos comes up to be thrashed out. So far nothing has come to light to show there is the least danger from gas, either at the time of filling or afterward, until filled again. As far as I know, there has been no trouble from this source through the dry-farming belt. Perhaps our high fall winds have much to do with this.

"Hand-to-Mouth" Silos

Most of our farmers having these underground silos look on them as experiments, and in many cases have done no more work on them than is absolutely necessary. Thus I found in my visit to eight of these silos no permanent work, though one farmer had taken a great deal of pains in cementing his up and building an eight-foot concrete circular wall above the hole. His is the best and the deepest (twenty-four feet in the ground, eight above). As a general

thing, most of the silos are twelve to sixteen feet across and sixteen to twenty feet deep, though, seeing they are really the best thing they have yet placed upon their farms, most of the builders are either going deeper, building higher, or both. At first many of the farmers had just holes in the ground with a light coat of cement. Later, seeing there was a tendency to cave in around the edges, a collar of concrete that extended a foot above ground was made. All sorts of cutters and engines have been used to fill these silos. Seven in one neighborhood hired a steam-engine that ran a co-operative cutter (\$200). This, with a good engine, gave fine results. The silos were filled at less than a dollar a ton.

He Put in the Corn Too Dry

One farmer put something like six hundred bushels of corn in his silo and had fully two thirds of it spoil. The trouble was putting the corn in too dry, or, in other words, not using enough water while filling. One farmer filled his first silo with corn in the roasting-ear stage, and it fed out very poorly. The second was filled with corn well dented that had been cut and shocked for two weeks. This was well watered at the time of filling and fed out fine. He figured that, though he lost on the first silage, the second was so good that he more than broke even on it. These silos are eighteen by sixteen feet. He fed out steers and used silage, corn and alfalfa, all they would clean up of each. Two farmers refilled with dry fodder. I couldn't see one who was using his silage for cows, but the feeder had just started to take off the top, and some of it was refused because of being too dry. However, the amount not eaten was negligible. He fed this with alfalfa and corn to baby beef.

By far the most of those using these makeshift silos are those milking anywhere from one to fifteen cows. Formerly they used such dry feed as they could produce on the farms, and generally got but little milk. Now these same farmers use the dry feed at noon, with silage in the morning and at night, and the cream-check has always doubled and in some cases trebled. One farmer used a combination of corn, cane (black) and milo to fill. This gave good results.

The cost of making will vary with the farmer. I talked with one who had a sixteen-by-twenty-foot silo. He had paid out in the neighborhood of \$40 on it. Another doing the work himself (wife helping) had put down a thirteen-by-sixteen-foot silo for \$5.15 (cement and sand). He hired a man for a short time, but that was paid back in work. Perhaps the best one in the whole country was put down for less than \$25. This is the silo that was built eight feet above the ground and twenty-four below.

There is one important feature about the underground silo and the dry farmer. In most cases he can't afford a real silo, but is able to build the ground sort. Now someone will bring up the question, "How do they get the silage out?" The most of them have a crude way—a ladder and an old tub. One feeder was using a swinging stacker that lifted a sort of a slat-cribbing sling. Perhaps in a short time all will use some sort of a cable stacker that will run from the silo to the feed-bunks. The traveling crane can be made to lift a large box and later run it over the feed-boxes. Even though this phase of the silo is in a rather crude state, the underground silo, at least for the farmer in the dry-farming belt, is a success.

Real Rural Banks

[CONTINUED FROM PAGE 4]

4. The organization for production and distribution of farm products follows co-operative lines. Farm products are sold by the producer at a relatively higher price, and are bought by the consumer at a relatively lower price because the cost of distribution is considerably lowered by co-operative marketing. These organizations also result in improving the quality and uniformity of farm products and in promoting more business-like methods in farming operations.

5. It is the opinion of many leaders of this movement in Europe that rural credit ought not to be divorced from co-operation, and governmental control over the activities of rural organizations is deprecated as tending to stifle the initiative of the farmers.

6. The most important finding set forth by the commission is that rural conditions in Europe differ widely from rural conditions and environment in America, as conditions differ in our several States and in the provinces of Canada. It is believed, therefore, that it will be necessary to modify the European systems of credit and co-operation if they are to be adapted to meet the needs of American farmers; that co-operative effort among the farmers of America might well be more generally employed, and that the facts gathered by the commission, when they have finally been prepared for the public, should be of great value in developing methods suited to the needs of the farmers throughout the United States and Canada.

A Few Fall Rope Kinks

By A. A. Burger



Fig. 1

Blackwall Hitch—This is a very simple and convenient hitch that can be used in fastening a rope to a hook when a steady pull is to be applied. The rope is first placed behind the shank of the hook. The short end is then passed through the hook, and the long end, or standing part, over the short end and through the hook from the other side.

Catspaw—The catspaw is a very satisfactory hitch and is very easily untied. With the long end of the rope toward the right side of the body, make a loop with



Fig. 2



Fig. 3

the left hand and grasp the ropes at the crossing (*y*), as shown in Fig. 2. With the right hand bring up the loop, as indicated in Fig. 3, and hold it in the left hand.



Fig. 4

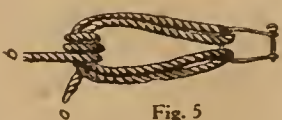


Fig. 5

Now with the right hand begin wrapping the standing part of the rope over itself and the other two ropes, as shown in Fig. 4. The loops are then adjusted until they are the same length, and are then fastened (Fig. 5).

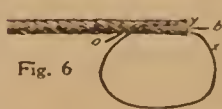


Fig. 6

Whipping—Sometimes it becomes very convenient to fasten the ends of halter-ropes or hay-ropes with a smooth fastening that does not increase the size of the rope. This can be done with a string and is called whipping.

Allowing the end of the string (*b*) to hang loosely over the end of the rope about two inches, make a loop by bringing the other end (*a*) down the rope, as in Fig. 6. Then, holding the two strings firmly upon the rope with the

left hand in such a manner that the thumb can be placed on both strings at *y*, grasp the loop of the string at *x*, and wrap it down over itself and

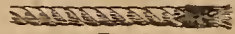


Fig. 8

strand (*y*), as shown in Fig. 7. Continue the wrapping as far as desired (one-half inch or more), then draw up the loops, and tighten the tie by pulling on the ends (*a* and *b*). If the string is wrapped firmly and evenly when completed, it should appear as in Fig. 8.

Surgeon's Knot—This knot is used in surgical operations. It is made by making a simple overhand knot, then wrapping the end around a second turn, thus making two wraps, as shown at *a* in Fig. 9. A second overhand knot (*b*) is tied over this, and the ends are firmly drawn.



Fig. 9

Slip-Knot—Like the overhand knot, the slip-knot is useful in connection with other knots. It is made like the overhand, but instead of pulling the end through, it is simply started, then left as a loop (Fig. 10).



Fig. 10

Slippery Reef Knot—Where the pull is not too hard, the slippery reef knot is very satisfactory for fastening two ropes together, as it is easily tied and quickly untied. The first part (*a*) consists of a simple overhand knot, the second a slip-knot (Fig. 11). When placed under a heavy strain, the slippery reef draws tight.



Fig. 11

Sheepshank—The sheepshank is used either as a temporary or permanent shortening for ropes. To begin the sheepshank, bring the ropes together, forming two loops (*x*) and (*y*), as shown in Fig. 12. Then grasp the loops near one end with the left hand. With the right make a half-hitch or loop in one end (*a*), and pass it over the loop (*x*), as shown in Fig. 13. Turn the rope end for end, and in the same manner form a half-stitch in rope (*b*) and pass it over end (*y*).

To make a permanent fastening, the ends are whipped fast to the loops (*a* to *x* and *b* to *y*). Another method of making a permanent fastening is that of passing each end through its respective loop.

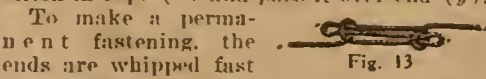


Fig. 12

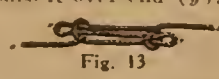


Fig. 13

Poultry-Raising

"Cropbounditis"

By B. F. W. Thorpe

THE chick pictured, when seven weeks old, filled its crop full of large dry kernels of whole corn, which, after swelling, were too enlarged to pass through the outlet of the crop. Fasting the chick and dosing with oil physic, accompanied with gentle kneading of the contents of the crop, failed to remedy the enlarged condition.

The third day after the trouble was first noticed no improvement was evident, and the chick was noticeably weakening. It



Chick fully recovered ten days after operation for crop-impaction

yards makes a favorable impression, which is enhanced by the caution not to accept the eggs if the seal has been broken.

The idea of using sealed boxes is rather new as applied to eggs and suggests a trade of the highest class. The seals are best affixed at each end. Most customers will appreciate that no poultryman would put up his eggs in this manner unless he were absolutely certain as to the quality of his product.

Some egg-producers state on their boxes that the eggs they sell are infertile. This is really a strong point, for it is much preferable to have eggs from hens with which no male bird is running. Incubation may start in fertile eggs practically before they are laid and may be kept up when a nest is occupied by one hen after another. Yet it is doubtful if the reference to infertile eggs means much to the consumer with the average city man's knowledge of the subject. It makes no special appeal to him.

Labeling the box with the information that the eggs contained therein were laid by hens kept under the most sanitary conditions and fed only on the cleanest and best of rations may be of considerable value, if the story is told in a few words.

The Package Problem is Being Solved

Delivery of the eggs is sometimes a problem when dealing with private customers, but it is probable that the parcel post will eventually make this a simple matter. Many poultry-keepers are already trying out the system. Several boxes are on the market in which eggs can be sent safely. A manufacturer had an exhibit at the Boston poultry show in January and sold thousands of boxes. One man placed an order for a thousand. Yet the cost of the boxes, plus the cost of mailing, rather militates against the plan.

Boxes holding two dozen are much cheaper in proportion than those holding one dozen, and the boxes can be used several times, so that under favorable conditions the expense is not so great as it seems at first. The boxes are very strong. At the Boston show they were filled with eggs and dropped on the floor without disaster. In fact, they were even kicked about without breaking an egg.

One class of poultry-keepers will be greatly benefited by this parcel-post scheme, and for a time they probably will be the ones to take the greatest advantage of it. They are the people living in suburban sections and keeping comparatively small flocks. These people have a few customers, often personal friends and relatives, who will willingly keep the boxes until they can be called for, or even make a parcel of them and send them back. Within the local zone the eggs may be shipped in baskets if carefully packed in excelsior and properly labeled. But it is foolish to try sending eggs unless they are well packed. Many omelets have been found in the mails already.

When utility eggs for hatching are sent by mail, good sense dictates that they be packed in the most careful manner. There are shipping-boxes holding fifteen eggs so made that breakage is almost impossible. It is only fair to the customer to replace infertile eggs, but the seller has a perfect right to demand that the clear eggs be returned in the original package within fifteen days from the date they are received. This length of time gives ample opportunity to make positive tests of the eggs under incubation, and there is no excuse for waiting until the end of the hatch. Some breeders agree to duplicate any order for hatching eggs at half price in the event of a poor hatch or a hatch which is not satisfactory to the buyer.

Of course the seller wants to ship only fertile eggs which are sure to hatch, and one of the best ways for him to guard his



Well packed eggs can be shipped

reputation in this matter is to ship eggs only from pens shown by his tests to be yielding hatchable eggs. After seven days in an incubator the eggs may be tested and a careful record made. Sales should be made only from pens known to be giving eggs with a satisfactory degree of fertility.

Sometimes a breeder with a reputation for keeping good birds is obliged to sell some of his eggs for table use at market prices and fears that the buyers may be tempted to set some of the eggs with the hope of getting birds of his strain without paying hatching-egg prices. Accordingly,

Chickens may come home to roost, but better train them to stay home to begin with

he renders the eggs unhatchable by one of several means. One of the most common methods is to put a pin prick in the large end of each egg. The hole will seldom be perceived unless the egg is closely examined, but the best plan is to divide the flock and sell table eggs only from hens with which no male is running.

A 25-Year-Old Yellow Hen

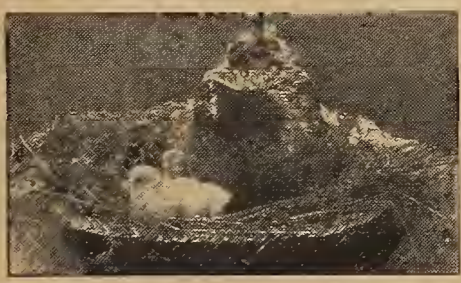
By Elizabeth Grinnell

A HEN owned by the writer, and having quite a remarkable history, has recently joined the majority of her kind. I bought this hen in 1890 for half a dollar. She was just a plebeian yellow hen, without family or reputed pedigree. "Is she young?" I asked of the seller. "She's not old; she's laying," was the reply.

I scanned her feet, as a buyer does a horse's mouth, to guess her age. I concluded she had seen a couple of summers or more. I therefore believe her to be at the time of her death, in April, 1913, about twenty-five years of age. She made good her reputation as a "fair layer."

The newspaper reports that she laid during her life 7,500 eggs cannot be substantiated. I never kept data, nor gave a probable estimate to anyone. Newspaper reporters love a good story for the shekels it brings, and for the possible promotion to higher honors. I forgive them, as everyone should, and laugh at their yarns. It was the reporter who named the hen "Theodosia Roosevelt," just for fun. She was simply "Hen" all her life.

She began to fail in strength when about ten years old. But she kept on laying and rearing her broods. That is, she laid irregularly until in 1911 she produced but four eggs, and in 1912 one egg only. Her eggs had ceased to be fertile for several years, or after she began to look old. Not that she herself lost the mating instinct, but that she was no longer pleasing to more youthful admirers of the biddy world. It was pathetic, if not sad, to see the cock of the yard side toward this aged person with the usual demonstrations of tender feeling



The venerable hen with a brood

and then suddenly sneak away with a look of disdain amounting to a blush on his crimson crown.

The Mental Qualities of the Hen

When about ten years old she began to show symptoms of locomotor ataxia, or such was the professional opinion of experts invited to attend her. Hers was the first accredited case of the disease which, among humans, attacks the individual in declining years. Her vitality also began to lessen so that she could no longer incubate. During her eight last years she was not on a roost with other fowls. Once falling on her back it was impossible for her to regain her feet. More than once she was found semi-conscious and was resuscitated only by tablets of nitro-glycerin. You ask me, "Why was her life prolonged?" I answer, "For the mental qualities in her." "The mental qualities of a hen?" Yes. These alone endeared her to the family and made her a sort of divine curiosity to science.

Aside from these mental qualities, the hen was a useful member of society. She would mother any brood from quail to turkeys, at any age offered, even after she was too crippled to scratch for them. In her later years a brood of young fowls was always given her in the autumn to insure her own safe passage through the winter. These chickens thought the mother hen hovered them and were satisfied with the warmth always obtained by cuddling; but it was the vitality of the young which kept the old alive. For some years it was impossible for her to "squat" or to bend the knees; she simply lay flat on one side, and the chicks burrowed in her feathers. Her appetite failed for food other than whole yellow corn.

She molted each year, but for two years following the molt she developed a white fungus on the head and neck. This yielded at once to carbolic oil. The scales of her feet disappeared at about fifteen years of age, and ever after her legs and toes felt as soft as a baby's, and were as pink. Even to the last she seldom looked pale or ill-nourished, her crown being bright with a youthful red. From observing this remarkable hen I have come to the conclusion that the old friends are the best friends, even though they be but denizens of barn-yards.

Tractors

By Ramsey Benson

A TRACTOR is an iron horse with a case of heaves which isn't as bad as it sounds. A tractor will do a number of things, but it is almost equally valuable for what it won't do. For instance, it won't get its tail over the reins.

A tractor pulls ten plows, with only one man to drive, where the soil is clear. Among rocks and stumps, of course, one man could scarcely command as much language as would be required.

A tractor resembles a steam roller in appearance, but its habits are quite different. Particularly, tractors are not in politics.

A tractor may be used in cultivating almost everything but the speed madness.



It always has the heaves

Farmers are not much bothered with having their tractors stolen by joy-riders. Last, but not least, a tractor eats gasoline instead of oats, which is a point of economy.

Ten Acres for Poultry

An Interesting Working Basis for Keeping Fowls Economically

By M. Roberts Conover

THERE are three ways to devote ten acres of land to fowls. I refer especially to the Eastern States. One is to use all the space for the fowls, buying all the food they need. Another is to support fewer fowls entirely from the products of the land, and yet another is to buy part of the food and raise part of it upon the land.

The condition of the land itself, as well as the owner's purse, must determine the course to be pursued. Some land will not produce enough to support even a moderate-sized flock until it has been run over by the fowls for a few seasons. Other land is so fertile that it will readily maintain a good-sized flock from its produce.

While one fowl eats little in one day—a trifle over four ounces—the cost of feeding a large flock for one year is considerable. For instance, a flock of 1,260 laying hens will consume about 16 3/4 tons of corn and wheat, 6 4/5 tons of oats, 4 1/2 tons of green food, 4 1/2 tons of bran, 16 3/4 tons of cut bone, 6 4/5 tons of additional food, meals, etc. Over fifty-six tons of food in one year! One should consider his available capital before going into this, as the poultryman can lose much money for feed alone if his flock should prove below the standard of production or succumb to disease.

Where food can be produced on the farm the beginner is on a safer footing if he raises at least a part of his feed than if he uses all his available space for range and buildings, buying all that he feeds.

After he has become established with sufficient capital, if he knows poultry and has learned how and what to buy, he can increase his stock and his direct outlay for food with less risk.

Land that is used for poultry and cropped alternately is, however, maintained in the best condition for both purposes. Whatever else the poultry-raiser decides to do, he should arrange for frequent change of runs.

On ten acres, allowing one acre for the use of the fowls and nine for growing all food-stuffs, about 150 laying hens may be maintained under the following system of planting: 4 1/2 acres in wheat, producing about 2,730 pounds grain; 3 acres in oats, producing about 2,880 pounds grain; 1 acre in corn, producing about 1,680 pounds grain; 1/20 acre in green food, such as cabbage, and 1/2 acre or less of alfalfa.

One hundred and fifty hens should average at least one hundred and fifty eggs each during the year. If one can dispose of these 1,875 dozen eggs at an average price of thirty cents per dozen, he will receive \$562.50 from the sale of eggs alone—not a get-rich-quick amount by any means, but a substantial return from a small flock.

The sale of wheat and oat straw and corn-stalks should cover the cost of the production of these feeds. If the oats are planted upon ground previously sown to clover or cow-peas no fertilizer will be required.

Where the grain fed is bought the land should be sown to clover, alfalfa, rye or oats, the last-named covers being allowed to get but a few inches high when the fowls are turned upon them. Where this is done over two thousand fowls may be kept.

This plan may be used alternately with the other, one year buying the grain, and the next year raising it and disposing of the older fowls.

Selling Utility Eggs

By E. I. Farrington

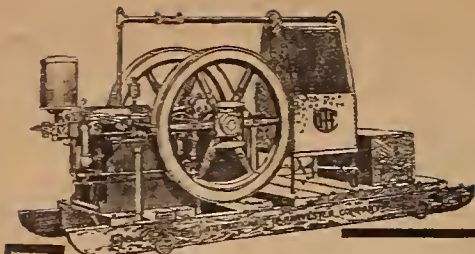
STAMPING eggs with a date-marker has never been a great success. People do not like to have their eggs defaced in any manner, to begin with; besides, the customer had no assurance that the date indicated was the one on which the egg was actually laid. Yet it is of prime importance, when a man is selling to a private trade, that his eggs appeal to the customer as being absolutely fresh and of the highest grade. Much depends upon the way the eggs are sorted. Those which are uniform in size and color should be put together.

It is advisable to handle the eggs as little as possible, for the "bloom" which appears only on strictly fresh eggs is easily destroyed. That is the reason why they should not be washed, but if there is a nest for every four or five hens and plenty of hay is kept in each nest few eggs will need washing. When eggs are kept for a considerable length of time and exposed to the air, they also lose their "bloom."

Market the eggs three times a week, and gather them at least twice a day.

Beware of Too Ornate a Package

Eggs of size and color so nearly alike that the eye can scarcely detect a difference are certain to please the most fastidious customer. Poultrymen who handle the white-egg breeds have rather an advantage in this respect, as they have fewer variations in shade to contend with. The box should be neat, well made and not over-decorated. If there is too much reading matter on it, practically none of it will be read. A strong, significant phrase in bold letters is to be preferred. The box illustrated could hardly be improved upon. A statement that the boxes are sealed at the



Once Upon a Time

Once there was really no way out of it for the farmer. Plodding home from the field, he saw before him the waiting jobs about the house, barn and yard, jobs that took time and labor, and never seemed to end. But that was once upon a time. Today he lets the engine do those jobs.

Every I H C engine is economical, simple, steady and reliable. Whether you want it for sawing, pumping, spraying, for running separator, or repair shop, you have need of an

I H C Oil and Gas Engine

I H C engines are built vertical, horizontal, stationary, portable, skidded, air-cooled and water-cooled; sawing, pumping and spraying outfits. Sizes from 1 to 50 horse power. They operate on gas, gasoline, kerosene, naphtha, distillate and alcohol. I H C oil tractors from 12 to 60 horse power.

Have the I H C local dealer demonstrate the engine to you. Get catalogues from him, or write the

INTERNATIONAL HARVESTER COMPANY OF AMERICA
(Incorporated)
CHICAGO U S A

Ertel's Cyclone—3 Stroke

WILL BALE 20 TONS OR MORE A DAY AT COST OF ONLY 40c A TON. Make big money baling for your neighbors after yours is done.

The Cyclone is powerful, durable, repair-proof—made almost entirely of finest steel. Unbreakable steel baling chamber, adjustable tension, makes smooth, clean, tight bales, 75 to 125 lbs. as desired. Three strokes each circle. Self-feed. Works at stack, barn or windrow.

Here's the biggest money maker you can buy. Low price. Free trial and absolute guarantee on every press. Write today—full information free.

Geo. Ertel Co.,
347 Ky. St., Quincy, Ill.

Self-Feed Hay Press Bales with least labor

1000 Baldwin Trees

71 acres, 12-yr.-old apple orchard in splendid condition; fine location, good air and water drainage; a large steady income is assured purchaser; estimated to be 200,000 ft. timber, 30 cds. wood; only 3 miles to depot and mkt.; cuts 20 tons hay; good house with large veranda; cottage for help; 40x60-ft. barn with cellar; near neighbors; good social advantages; a splendid opportunity for business man to retire, care for orchard and be sure of steady income; price only \$3900, easy terms; for all details, see page 87, our "Mammoth 96-Page Farm Catalogue No. 36"; beautifully illustrated and filled with a wonderful assortment of money-making farms throughout many states; send to-day for your free copy, it will save you lots of time and money. E. A. Strout Farm Agency, Station 2699, 47 West 34th St., New York.

YOUR APPLES WILL NET YOU MORE MONEY

After you have installed a Marshall Hydraulic Cider Press. We are the largest mfrs. of presses, apple-butter cookers, evaporators, etc., in the country.

A. B. Farquhar Co.,
Ltd., Box 105, York, Pa.

Ask for our free 1913 Catalog, telling why.

MARSHALL RAIN-PROOF CORN CRIBS

are built along practical lines, easy to erect and last a lifetime. Made of galvanized iron. Perforated body and ventilating shaft insure well-cured corn. Made in three styles and many sizes.

FREE Illustrated Catalog Fully describes usefulness and construction. Write for it today.

Iron Crib & Bin Co., Box 70 Wooster, O.

Garden and Orchard

Apple Prices May Drop

By Nat T. Frame



ADVERTISE, advertising, advertisements, advertising campaigns and advertising hills—magic words in modern industrial life says the successful manufacturer, and "right" endorses the "ad." man of FARM AND FIRESIDE. And even we farmers are catching on. Didn't John Pick-

ering Ross hit the nail on the head recently when he told the sheepmen not to sell their flocks, but to advertise their mutton? People do not eat mutton because they do not know how good it is when bred right, fed right, hatched right and cooked right. Some keen organization of sheepmen is going to show a number of these people who are at present non-consumers of either lamb, ram, sheep or mutton how short-sighted they are, and by so doing will create a more active demand for their special product.

So, too, we may expect to see the day when even the young clerk who is but beginning his life at the lunch-counter will put up a kick if his buckwheat cakes are not cooked from real buckwheat-flour and his maple syrup did not come from sugar-maple sap. That is, if the buckwheat growers and millers and the maple-grove owners catch on to the value of advertising as early as we think they will.

It is suggested that the apple-growers have already caught on, that Hood River and other sections in the West, and J. H. Hale and other individuals in the East have proved that former non-consumers (of their apples at least) can be induced to eat apples at so much per mouthful. All right, well and good. But how many thousand people have in the last few years planted apple-orchards or bought apple-orchards with the expectation of getting rich by riding in free on the tail end of the advertising campaigns either of Hood River or Mr. Hale?

Ignorance Will Mean a Loss

You will remember that some few centuries since all Holland was growing tulips to perfection. Such wonderful specimens did they develop that enormous prices were obtainable and the whole country was getting rich. But unfortunately there was neither prototype of the Hood River Association, nor of Mr. Hale to educate Eng-



land and the rest of the world to buy tulip-hulhs at so many guilders per pennyweight, and the bubble burst, taking with it into financial non-existence many thousand stout Hollanders.

To show how slipshod and entirely personal these Dutchmen were in their methods of advertising, take the story of the English botanist who happened to see a tulip-hulh lying in the conservatory of a wealthy Dutchman. Ignorant of its value, he took out his penknife and cutting the hulh in two became very much interested in his investigation. Suddenly the owner appeared, and pouncing furiously upon him asked him if he knew what he was doing.

"Peeling a most extraordinary onion," replied the hotanist.

"Hundert toutsat tuyvel," shouted the Dutchman, "it's an Admiral Vander Eyk!"

"Thank you," replied the traveler, writing down the name in his note-book. "Are they common here? This looks fine to me."

"Death and tuyvel," screamed the Dutchman. "Come before the Syndic, and you shall see!"

The poor botanist soon learned to his dismay that he had destroyed a hulh worth \$1,600. He was lodged in prison until securities could be procured for the payment of the sum.

The moral of this illustration, stated boldly that he who runs may read, is this:

If we apple-growers do not soon formulate and put into execution some comprehensive advertising scheme to reach the present non-consumers of apples we may not be able to sell our crops profitably unless, like the Dutch tulip-growers, we put our apple where some millionaire will unwittingly bite into it, and then haul him to court for good, round damages.

Shall We Set Trees This Fall?

By Omer R. Abraham

I HAVE never practised fall setting fruit-trees, yet there are several points that I can name in favor of it, especially when thinking of the peach, gooseberry, currant, plum and cherry. These trees and plants put out their leaves so early that they often come from the nursery in a bad condition for planting. I have known them to start after they were boxed for shipment. Owing to the heat from the packing material, the tender shoots would be as white and tender as bleached celery. These trees might grow, and again they might not. At any rate, when exposed to the rays of the sun after setting, this growth dries up, and it is some time before it starts again. When these are set in the fall this does not occur.

If the roots are carefully pruned before setting in the fall, they will callous over and start new ones immediately in the spring, and all things considered, fall-set trees may be depended upon to give a larger growth the first year. This is due to the fact that they start earlier, and are ready to ripen their wood when the hot, dry weather of mid-summer comes. Often, too, trees received in the spring that have been carried over in cold storage (and that consists of about eighty per cent. of those sent out from large nurseries) are so late in putting out leaves that they make little growth the first season. Being green when freezing weather strikes them, they are in a very poor condition to stand the winter.

Again, peach-trees set in the fall sometimes winter-kill, while if carried through in storage they come out the following spring in good shape. All trees set in the fall are harder to protect from the rabbits and mice, scattered over the orchard as they are, than if carried through in a bundle. Soft ground and heavy winds during the winter get the trees all out of line, and the hole which they work about themselves will stand full of water and freeze as hard as a rock. Both spring and fall setting have their advantages and their disadvantages.

You will naturally, now, wonder what conclusion I have come to in the setting of orchards. If we grow our own trees, which we do in most cases, we wait for the first warm day in the spring when the ground is dry enough to set. Then we dig from the nursery and set immediately. However, if we buy the trees and have them shipped in from some nursery, we prefer to buy them in the fall. We carefully prune the roots, rebundle or retie the trees in small bunches and carefully heel them in. Since we had the mice eat a few for us, we have taken care to work the dirt in around the roots. Mound it up a little, tramp firmly, and see that there is no trash close by. In this way the roots callous over, and they are ready to be set the first day in the spring that the weather and the soil will permit. This I think is by far the better way where trees are to come from a distance, for they are so often exposed during the winter. If you have them as soon as dug from the nursery row you can care for them to suit yourself. However, whatever else is looked after, protection from mice and rabbits must be given young trees.

GARDENING

By T. GREINER

Harvesting Onions

AT LAST summer's meeting of the New York State Vegetable-Growers' Association, Mr. Greffrath, an experienced muck-land gardener of the State, gave his version as follows: "To keep an onion in proper condition for storage, one should not allow it to remain in the ground long after the tops have all dried. If you do that it is going to do one of two things. It is going to take root, or the two outside layers next the root are going to rot. In the latter case it is just as good, but its appearance is not attractive. Don't let the onion lie in the sun until it becomes burned. Red onions when properly harvested are the prettiest onions we can produce. There are some markets that demand the red onion, but the majority favor the yellow. One of the best methods of storing is in the crates."

With the big Spanish onions, especially Giant Gibraltar, it is very important to harvest the crop as soon as the tops have become yellow and are falling over. These onions are more sensitive to weather changes, especially wet weather, and also hot sun, than the ordinary onions grown from seed sown directly in the field. Pull them in a dry time, gather them up soon after, and store under shelter on a dry floor spread out thinly. Then dispose of them without much delay. I have kept well-cured, sound specimens of Prizetaker and Gibraltar, however, stored in shallow crates or trays, in a fairly dry cellar, until near spring in fair condition.

Winter Radish Varieties

Many farmers hardly know what a winter radish is. I have my supply every fall and early winter. We like them sliced and salted to eat with bread and butter. You can have them. The older varieties are black and white Spanish, both long and short rooted. They are of fair size and of rather strong flavors. The Chinese or California winter radish is white, of very large size and quite mild in flavor. I prefer this to the others. It should be grown quickly in well-prepared and very rich soil. Sow the seed in rows fifteen or eighteen inches apart, as you would sow summer radishes, by hand perhaps in a small garden, or with the garden drill if on a larger scale. Winter radishes are often quite salable and, where salable, quite profitable. We use them fresh from the garden; but they can be dug in late fall and stored in sand in a vegetable-cellar until along in the winter, or even until spring.

Pull the Big Weeds

During the latter part of the season we make our daily and perhaps often-repeated trips through the garden. We have to gather Lima beans, tomatoes, cucumbers, melons and other things. For this is our main time of harvest. And among all these crops we encounter, here and there, all sorts of big weeds. Weeds grow fast in hot weather. They are fast ripening seeds, too, if let alone. I never gather even a small basket of tomatoes or a mess of Limas without having an eye open for weeds, and always stop long enough to pull the weeds from among the tomato or other plants from which I gather the produce. This should be done before the seed on the weed-plant is far enough advanced to have a chance to grow; or if it has, then the weed-plant should be removed and destroyed so no seeds will get back on our land.

By culling the small potatoes out and feeding them to the stock and poultry, they will return you their full value, but if left with the better potatoes and sold they will reduce the price of the entire lot.

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The Black-and-White Warbler

By H. W. Weisgerber

THE simplicity of coloration of this bird with his two extremes, black and white, and these so evenly balanced in longitudinal stripes, makes him the beautiful creature that we find during the spring or fall migration as he passes through our country on his northward or southward journey.

The habit of "creeping" like a nuthatch, up or down on the tree-trunks or on the under side of large limbs, makes identification of this charming warbler an easy affair. He passes northward through my section of Ohio, which is near the Pennsylvania line, about the first of April and returns about the first of September. Like all warblers, he may be common or rare in any locality, yet a few can always be found.

Warblers, as a class, are the farmers' unseen and most beneficial assistants. The majority of them glean among the tree-tops for destructive worms. Being small they are rarely observed, and their weak, hisping notes do not attract attention. So they pass by unobserved, and their valuable service is not always appreciated.



The Market Outlook

Market News is Needed

By Nat T. Frame



THE growing of peaches in non-commercial peach-growing sections has become so precarious a proposition by reason of peach-yellow and brown rot and scab and scale and unseasonable frosts, and especially because of the lack of trained hands who know how to combat these difficulties, that the competition from such sections is seldom felt in the larger peach-markets. It is undoubtedly true that if the machinery for distributing the peaches from the large commercial peach-growing sections was more complete, so that every country hamlet could buy peaches on terms that would mean the consumption of much larger quantities, then the peach-growing industry as a whole would benefit, even if it should happen that, in certain favorable seasons, local competition might glut some of these smaller markets.

But as conditions exist in the peach industry it follows that south Georgia is interested only in the crop reports from its own growers and those of Texas, who ship to market at the same time; while western New York figures prospective prices on the crop reports received from the Connecticut Valley and Lake Michigan sections. The securing of fairly accurate information about the crop in competitive sections is not, therefore, so very difficult; nor is this information, when secured, so very valuable. It helps the grower, of course, to most economically plan his selling campaign, and may in some cases determine him to turn his whole crop over to a speculator for a cash consideration, but as most commercial peach-growers continue to have an interest in their peaches until after the fruit has gone past the commission man, the kind of market news that particularly interests the peach-grower is that received by telegraph from his consuming markets day by day. That is a well-known fact.

Co-operation Includes All Parties

The devices now ordinarily in use for collecting and getting out this kind of market news work fairly well except perhaps for the small independent grower who must depend on the newspaper, the express agent or his own imagination for advice as to where to ship. Co-operative exchanges promise the best help to such small growers; but in many sections they are not yet ready to co-operate. As the sum total of such independent and haphazard shipments is often sufficient to upset market conditions, it would seem to be within the province of state or government authorities to arrange bureaus of information where the small grower can get the best disinterested information that wire service and reliable reporters in the consuming markets can furnish. Pretty accurate knowledge is generally available as to what conditions are at the time of shipment. What is not generally known with sufficient accuracy is: who else is shipping to that particular market, and what factors are likely to influence the consumption of peaches in that particular market at the time. It would seem that the right sort of co-operation with the commission men and retailers could devise means of furnishing this information also, so as to more nearly avoid ever glutting markets. The Eastern Fruit-Growers' Association evidently thought about this when they recently appointed a committee to seek

ganda until there are brought together (not for once only, but at regular intervals) representatives from consumers' clubs, retailers' associations, leagues of commission men and fruit-growers' societies with sufficient breadth of vision to formulate marketing plans that will carry to the consumer good peaches in large quantities at the lowest prices compatible with deserved profits to the peach-growers. It is a many-sided proposition, and co-operation only will bring about the best results, not co-operation between growers only, but co-operation between all parties in interest.

Temporary Slump in Hogs

By L. K. Brown

THE cholera scare has again gained a foothold in the corn belt. In western Illinois and eastern Iowa there seems to have been considerable loss from this disease, and there have been reports for some time coming from many districts of heavy losses among spring pigs. This has caused a general lack of confidence, and as a result many thin sows and small pigs have been sent to market. Sharp declines have consequently occurred, as this kind of stuff is decidedly lacking in finish and quality. The choice light-weights which have been selling at the top quotation have suffered the least, but the outlet for this class through the eastern butchers is curtailed because of the high price they have maintained for some weeks.

This demoralized market can be only of a temporary nature. When the stricken districts have cleaned up, the supply will drop, and prices will advance again and go higher than they would have if the run had not occurred, for every thin sow or pig marketed now will not be on the market later in heavy flesh. Every additional pound of pork that could be put on is needed to supply the demand that is sure to come before long, and this liquidation now means an elevation of prices later.

The export demand for lard is good, being forty per cent. greater than one year ago. The South has been a slow buyer for its September and October trade in lard and meats, but is expected to get busy before long. With the marketing of so many "grass widows" in a thin condition, lard accumulation is less and advances are to be expected as soon as buyers become active again.

The condition of the market is of little benefit to either buyer or seller. It places the market on an unstable footing and sale prices lack uniformity. It is difficult to determine a correct value for the hogs on sale.

On the provisions market there has been a general lowering of prices and a lessening of activities. With the disappearance of the thin and half-fat portion of the supply, the market will again find a healthy stride at a higher range of values than had this liquidation not occurred. The consumptive demand will remain strong and the supply will have been lessened.

Attention to details is the watchword of the successful farmer.

Thousands of Small Flocks

By John P. Ross

THE continuance of the long spell of drought and of abnormal heat into the present month had, as might be expected, a very depressing effect on the live-stock market everywhere. The actual shortage of feed in some sections, and the fear of it in others, caused a rush of cattle and sheep to the leading markets, many of them but half fitted. Under these conditions, and with the daily fluctuations caused by them all through July, it is remarkable to note how little lowering effect, having any symptoms of permanence, has occurred in the sheep-market. The following memorandum of the comparative average prices of sheep and lambs in Chicago for that month for the last four years carries with it very convincing proofs of the stability of the sheep-market notwithstanding these depressing circumstances. The figures are from *The Farmers' and Drovers' Journal* and refer to the month of July in each year:

	1913	1912	1911	1910
Sheep	\$4.50	\$4.25	\$3.95	\$4.20
Lambs	7.55	7.25	6.30	7.10

The experience of many years and the study of innumerable experiment station reports have convinced me that, except in some very exceptional years, there is a fair profit in breeding and feeding lambs at \$6 per hundredweight. Look at it in this way: A good breeding two-year-old ewe could be bought in 1910 for about \$4. By the spring of 1914, if bred to a good ram of one of the Down breeds, she should have produced four lambs, and more likely six.

Considering, rightly or otherwise, that, after weaning the last of them, she had seen her best days, she could be fattened up to, say, 140 pounds at very small cost, and be worth, at \$5 per hundredweight, \$7. If any reader of *FARM AND FIRE-SIDE* finds any flaw in these figures or knows of a better live-stock investment we shall be glad to hear from him.

Irrigation of the arid lands of the West is enabling the farmers there to grow luxuriant crops of alfalfa. Want of shipping facilities at times compels them to sell the hay as low as \$3 per ton; so many are turning their attention to lamb-feeding, and in this a solution of their difficulties is likely to be found.

The Breeders' Gazette, in referring to this matter, while deprecating being classed among the prophets of evil, points out that the cheapness with which large numbers of lambs could be thus fattened, combined with the possibility of a big influx of frozen mutton from South America and Australasia, will be apt to handicap the lamb-producer of the corn belt with his more costly methods of feeding, and put him "between the devil and the deep sea."

In this dilemma the corn-belt man must bear in mind that "there is always room at the top." Already we have tried in these columns to dispose of the bugaboo of the frozen meat; and it does not seem likely that the farmers of the arid lands will have a walk-over in this business, at least for some years. Feeders even now are having to pay from \$4.25 to \$4.75 per hundredweight for sheep, and for feeding lambs from \$6.50 to \$7. and not enough of them are to be had at those prices; and good grade breeding ewes are perhaps scarcer than any.

My own view of the matter is that, since the day of the free range-bred lambs is past, the feeder will have, more and more, to be the breeder also, and that the specially well-bred mutton-and-wool lamb will be the kind most in demand, and that the thousands of small flocks will take the place of the flocks of thousands. Discarding the scrub breeders, and growing rape, roots, rye, clover, and the like, the corn-belt man will not only get to the top in the sheep-market, but the increased fertility thus acquired will make that great section still more and more the corn belt, and his lot still more desirable.

A Running Hog-Crate

By C. S. McGugin



A LABOR-SAVING hog-crate is very easily made from an old buggy-axle, two good wheels and a few boards. Bend the axle to go underneath the crate, making the horizontal portion as long as the crate is wide, and fasten to upright.

You can very easily take a calf to town by fastening the handles on the hind axle of your buggy.

The up-to-date farmer keeps his fences and his courage up.

When you live near a town or city find out consumers' wants; supply these just a little better than anyone else is doing, and reap a harvest of coin.

Pass the Secrets Along

By Chesla Sherlock

RECENTLY I received a letter from a young man living on a farm in one of our Mid-Western States, in which he asked advice on starting "in a modest way" with poultry.

An extract from the letter will serve to give the reader a fair idea of what the young man considered "modest." I do not wish to dampen the ardor of anyone concerning poultry, but I do wish to make it plain to everyone that poultry must be considered seriously, if considered at all.

I wish to start in the poultry business, as I have been informed that one can make a good deal of money in that work. As far as I can see, chickens are not very hard to raise, and if there is anything in this talk about \$10,000 hens I would like to raise one myself. I wish to start modestly, of course, but don't want to monkey with chickens if there isn't big money in them. If you have any secrets or know where I could get bold of any of the secret ways of raising swell chickens, I wish you would pass them along.

Putting aside all of the fine and flowery phrases that have been used to express thoughts, isn't that about the limit! Any person with average intelligence, even though he had never seen a hen, on reading the above letter, would advise the writer to let poultry alone. It is plain to be seen that he was not intended for poultry, and poultry was not intended for him.

While I think the above letter is about the limit, I do not consider it any worse than the average view of farmers toward poultry. They "don't want to monkey with chickens if there isn't big money in them." I admit that it is entirely proper to look on the financial side of poultry before venturing into the business, but I also know that there isn't a single person in the whole universe that can make a success with poultry if he goes in looking only to the money side. He must be a lover of fowls, must have a natural-born interest in them that will make him love them, whether they are money-makers or not. Such a man, I claim, is the only true poultryman.

The idea the young man seems to have about raising \$10,000 hens seems to be about the idea everyone has at the time the first stages of "chicken fever" become evident. He seems to think that all he has to do is to set a few eggs, and the result will be half a dozen \$10,000 hens! This is the result of allowing one's imagination to run away with one's reason. The young man might as well expect to make gold dollars out of horseboes.

Possibly the greatest injury that has been done to the poultry business during the past few years is the introduction of various "secrets" on the market, which have had a bad influence on the minds of superstitious people. They seem to believe that successful poultrymen have some sort of secret by which they produce their fine birds. These people are no farther in advanced civilization than the people of the Dark Ages were.

It is time for people to think of poultry in a serious light and to put aside all superstition, prejudiced opinions and false ideas. Poultry is just as serious and requires just as much hard work and thought as any other work.

State Fairs and Expositions for 1913

Fair	Place	Date	Secretary
Arkansas	Hot Springs	Nov. 11-16	Geo. R. Belding
Alabama	Birmingham	Oct. 9-19	S. H. Fowlkes
California	Sacramento	Sept. 13-20	J. L. McCarthy
Colorado	Pueblo	Sept. 15-20	A. L. Price
Connecticut	Hartford	Sept. 1-6	H. A. Walker
Delaware	Wilmington	Sept. 9-12	S. H. Wilson, Jr.
Georgia	Macon	Oct. 21-31	Harry C. Robert
Idaho	Boise	Sept. 22-29	Wm. Krull
Illinois	Springfield	Oct. 3-11	J. K. Dickerson
Indiana	Indianapolis	Sept. 8-12	Charles Downing
Kansas	Hutchinson	Sept. 13-20	A. L. Sponsler
Kentucky	Louisville	Sept. 15-21	J. L. Dent
Louisiana	Shreveport	Nov. 5-11	L. N. Brueggerhoff
Maine	Lewiston	Sept. 1-4	
Maryland	Timonium	Sept. 2-6	J. S. Nussear
Michigan	Detroit	Sept. 15-20	G. W. Dickinson
Minnesota	Hamline	Sept. 1-6	J. C. Simpson
Mississippi	Jackson	Oct. 28-Nov. 7	J. M. McDonald
Missouri	Sedalia	Sept. 27-Oct. 3	John T. Stinson
Montana	Helena	Sept. 22-27	A. J. Breitenstein
Nebraska	Lincoln	Sept. 1-5	W. R. Mellor
New York	Syracuse	Sept. 8-13	Albert E. Browu
New Jersey	Trenton	Sept. 29-Oct. 3	M. R. Margerum
North Carolina	Raleigh	Oct. 20-25	Jos. E. Pogue
Ohio	Columbus	Sept. 1-5	A. P. Sandles
Oklahoma	Oklahoma City	Sept. 23-Oct. 4	I. S. Mahan
Oregon	Salem	Sept. 29-Oct. 4	Frank Meredith
South Carolina	Columbia	Oct. 27-Nov. 1	D. E. Efrid
South Dakota	Huron	Sept. 6-12	C. N. Mellvaine
Tennessee	Nashville	Sept. 29-Oct. 4	J. W. Russwurm
Texas	Dallas	Oct. 18-Nov. 2	W. C. McKamy
Utah	Salt Lake City	Sept. 29-Oct. 4	Horace S. Ensign
Vermont	White River Junc.	Sept. 16-19	F. L. Davis
Virginia	Richmond	Oct. 6-11	A. Warwick
Washington	North Yakima	Sept. 29-Oct. 4	H. B. Averill
West Virginia	Wheeling	Sept. 8-12	Geo. Hook
Wisconsin	Milwaukee	Sept. 8-12	J. C. McKenzie
Wyoming	Douglas	Sept. 30-Oct. 3	Anson Higby



to co-operate with the established marketing agencies for mutual profit. Other horticultural societies and farmers' organizations might well follow up this idea. Active co-operation between organizations of consumers, retailers, commission men, transportation agencies and growers would be the ideal toward which to work. The telegraph companies seem already to be getting ready for their share in such a co-operation by their reported establishment of market bureaus and special service for fruit-growers. What the situation seems particularly to need right now is a man, or a woman, with the nerve and the tact, the acquaintance and the money, and the stick-to-it-iveness who will keep up the propa-

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Live Stock and Dairy

The Young Brood-Sow

By C. J. Griffing



WHATEVER breeds of swine you prefer, be sure the brood-sows are properly reared and of good blood. I select my brood-sows from the spring litters, as the natural feeds of summer are better for producing ideal growths than those of winter. At no time in the young sow's development should a tendency to lay on fat be allowed. The object is not a certain weight at a certain age, but rather a good size, strong bone and muscle, a roomy frame and strong vigorous growth. Exercise is very important for the young sow, and sunlight acts as a tonic. Feed and care for the young sow in such a way that she will be gentle and submissive, if you expect her to produce large litters of fine, vigorous pigs.

The surplus food given her during the period of pregnancy should go toward the development of her offspring. Do not breed a sow that utilizes this food toward laying on fat, as she will give birth to small, weak pigs.

Fat sows often fail to conceive, and if they do are not very prolific. All good breeders agree that it does not pay to breed an immature animal. This practice has a tendency to tear down her constitution, for

The following day give a powder compounded as follows: Prepared chalk, five drams; pulverized catechu, one dram; pulverized opium, ten grains; mix thoroughly. Give three of these powders a day, then skip one day, and give three more. Be sure during the treatment that the horse has plenty of pure water. I cannot promise that this treatment (which is the treatment for acute diarrhea) will effect a cure, but it is worth trying. The best road to a cure, I think, lies in giving the colt a good run at grass and afterward being very careful about his diet, feeding nothing that might irritate the stomach or bowels and using moderately until he seems better.

Nebraska claims the lead in live stock with \$110 value in farm animals per capita of rural population. Iowa comes next, with \$88.

Itching Mane and Tail

By Dr. A. S. Alexander

IDLENESS, overfeeding and lack of grooming are the common causes of tail-rubbing and itchininess of the mane. Often there is itchininess of the entire body associated with the other condition, and the skin will be found covered with daudruff. It is noticeable that these troubles are more liable to affect horses that are kept in dark, damp, dirty stables. Lack of ventilation renders the air of the stable hot and moist. This induces sweating, and by many it is deemed the whole cause of tail-rubbing and its kindred evils. It certainly is a contributing cause; but lack of hygiene, overfeeding and inadequate feeding induce the real cause, which is an impure state of the blood due to sluggish



Good types of Poland China sows, mature and muscular

it prevents the animal from completing her own growth, and the offspring are likely to be small and puny.

If the cows and the horses could they would gladly take part in the fly-swatting campaigns.

The Horse That Scours

By David Buffum

A NEW JERSEY farmer asks concerning a five-year-old road-horse which scours when being driven.

Sometimes this condition seems to be the result, in young horses, of too severe use at either road or draft work. At other times it appears to be a constitutional weakness, always exhibited when the horse is called upon for anything out of the ordinary. "Cut feed"—that is, hay or straw run through a cutting-machine, wet up a little and mixed with meal—will sometimes cause it. The horse should have a reasonable amount of good, sweet hay, fed entirely dry, and his proper ration of grain. Last year I cured a very bad case by simply giving the horse three months' run in good pasture, then feeding as above and using rather moderately for a couple of months. This is what I would advise.

If his feed, however, is what it ought to be it might be well to try the following treatment: First give fifteen or twenty drops of tincture of aconite-root in water.

circulation and inactivity of the excretory organs of the body. The skin is less prone to irritation and eruptions when the horse is fed succulent foods, such as roots or silage. Carrots are especially valuable in this way, and parsnips, turnips and beets come next in value, in the order named. But roots will not perfectly offset the effects of the contributive causes mentioned.

When a horse is affected, therefore, the first remedial step should be to adequately ventilate and light the stable, perfectly groom the skin, enforce ample exercise every day and reduce the rich feed to supply only the actual food requirements of the animal for maintenance and surplus needed for repair of tissues. Corn more especially should be omitted or reduced in quantity, as it is a heating and fattening food. Oats may be fed more sparingly than usual and bran added freely to the ration. In many cases it is well to at once clip the horse; then wash itching parts of the skin with a 1/100 solution of coal-tar dip or disinfectant. At the same time scrub the roots of the mane and tail clean with soap and hot water. When dry pour on a mixture of equal quantities of kerosene and machine-oil, and rub it in with a brush. Repeat the application as often as found necessary. Before rubbing in the lotion it is well to wrap lock after lock of the upstanding hair of the root of the tail around the fingers and pull until the skin "gives" with a snapping noise. This is a Southern notion as to treatment, but many horsemen have reported it as effective.

Other Remedies May be Effective

Another good lotion for the cure of tail-rubbing is a mixture of four ounces of flowers of sulphur, half an ounce of coal-tar dip and sweet-oil enough to make a pint. Shake well and rub in every three days. Do not wash the parts after the preliminary washing. As internal treatment mix half an ounce of granular hyposulphite of soda in the feed night and morning. The cause of tail-rubbing in some mares is a collection of sebulous substance about the udder, and this should be removed. Presence of pinworms in the rectum, or bots passing off in the spring, or foul condition of the sheath in geldings and stallions, also are causes of irritation requiring attention. In some cases parasites are present; but they are readily destroyed by the sulphur-oil lotion. Lastly, remember that chicken-lice are always to be suspected as a possible cause when horses rub, gnaw and scratch any part of the body.

"Curing Broken Wind"

By Dr. A. S. Alexander

HEAVES, or "broken wind," is not contagious. That being the case, it is likely that if the other horses are coughing it is the result of influenza, strangles or possibly from irritation due to dust in the hay or noxious gases in the atmosphere of the stable.

I would treat a horse affected with heaves as follows: Wet all feed. Feed no bulky feed at noon. Do not work horse soon after a meal. Give the drinking-water before feeding. Night and morning give one-half ounce (tablespoonful) of Fowler's solution of arsenic until one quart has been used; then gradually discontinue the medicine, taking a week or so to the job.

If the cough does not quickly subside have the teeth attended to by a veterinarian, stop giving the arsenic solution, and substitute one-half to one ounce of glycoheroin, two or three times a day, as found necessary.

Concrete Feeding-Floors

By Marc N. Goodnow

ONE of the most successful farmers in Illinois says of his concrete feeding-floor: "It pays for itself every two weeks." An Ohio State Experiment Station bulletin shows by chemical analysis that manure produced by steers fed on cement floors is worth more per ton than that taken from earthen floors. Besides, under ordinary conditions, a four-inch concrete floor will cost less than an oak floor. With cement at \$2 a barrel and sand and gravel at fifty cents per load of one cubic yard, the material for a concrete floor four inches thick, finished with three-fourths-inch top-dressing, will cost about \$5.50 per one hundred square feet.

Concrete floors for feeding-pens, stables, hog-houses, poultry-houses, milk-houses and dairies can be laid much as if they were sidewalks. An important feature is proper drainage, obtained both by having a dry base upon which to place the concrete and by sloping the floor toward a suitable point one-fourth inch to the foot.

Points of Efficiency

A wise precaution is to excavate to a depth of a foot for the drainage foundation, and around the outside edges of the floor dig a trench about one foot wide and eighteen inches deep. By filling up this trench with concrete, rats cannot burrow underneath and nest. Fill the excavation inside the trench with well-tamped coarse gravel, crushed rock, or broken tiles.

In stables, cow-barns or where animals of considerable weight are to stand, the concrete floor should be at least six inches thick. Feeding floors may be four inches. Stalls and driveways should be six inches.

Use two-inch stuff four and six inches wide for forms. As a general proposition, a mix of one sack of cement to two and one-half cubic feet of clean, coarse sand and four cubic feet of screened gravel or crushed stone will answer the purpose. The mixture should be wet enough to show moisture on its surface, and should never be allowed to stand longer than half an hour.

A gutter form should be constructed so that it can be placed in position while the floor is being poured. Four by six inches is a good size for the gutter, which should connect with the manure-pit by means of a trough or sewer.

Finish the surface of the floor three-fourths inch thick with a mixture of sand



To get the best results the floor should be well drained

and cement. Use a wooden trowel, and mark spaces with a straight-edge not over six feet for either dimension, as in a sidewalk. Four or five days should be devoted to curing the concrete, and it should be covered with a tarpaulin or sand or earth. Occasional drenchings will also benefit it.

Concrete barn-yards, feeding-floors and feedways may be constructed in a manner similar to that described for barn floors.

Materials required for a six-inch floor twenty-four by thirty-six feet are:

Crushed rock or gravel, twenty cubic yards, at \$1.10	\$22
Ten cubic yards of sand, at \$1	10
Twenty-eight barrels of Portland cement, at \$2.50	70
	\$102

Five men can lay this floor in two days. The entire cost will be from five to fourteen cents per square foot of surface.

Don't confuse this with ordinary "make-shift" roofings—we guarantee it 15 years and inside each roll furnish modern ideas for laying it artistically.

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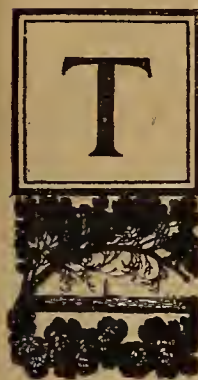


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The FARMERS' LOBBY.



HERE seem to be two main reasons why it is so hard for this country to learn from other countries: First, we have elephantiasis capitis in very acute form; second, we seem to be natural-born grafters anyhow, and any time any of us are sent away to learn something about other countries we turn it into a junket.

Elephantiasis capitis is the real difficulty: swelled head, exaggerated ego, towering and tremendous conceit and self-satisfaction. That's what's mostly the matter with us. When foreigners come here for fifteen minutes to learn all about us, and then hurry back on the same boat, writing en voyage their book on us and our country, they seldom get farther than to survey the outside of this crust of conceit; and so the outside world doesn't really know how many rather good points we have.

On the other hand, when we send somebody abroad to learn what's doing there the disposition is to make it a vacation. That's exactly what happened to the American commission that went abroad last spring and has just lately returned, having "studied" the rural co-operative and marketing systems, and the rural-credit systems, of leading countries.

This is where you laugh. I am so officially assured by members of the "commission" who took the thing seriously. The party contained about sixty "commissioners"; some represented the United States, some the States, some the Southern Commercial Congress and various other organizations. A considerable number of the commissioners had taken along wives, daughters or sweethearts, so that the entire company rounded up a nice American colony of about one hundred. You can see for yourselves the social possibilities of a company like that: it could manage anything from a personally conducted reception at court to a special railroad train across an empire. During its three months on the Continent and in Great Britain it did all these and about everything else you could think of—including getting its picture taken more times than any other known organization since the original Florodora sextette.

If these investigators missed a worth-while cathedral along the route of their researches into rural co-operation and finance, passed up a successful waterfall, a real mountain or a ruin prominent enough to get its name in the guide-books, there was a mistake, and a regretted one. Likewise, if any king, emperor, president, grand duke, governor-general, lord-lieutenant, viceroy, lord mayor, board of aldermen or other notable of whatever quality or caliber got overlooked in the matter of "receiving" this eminent aggregation of agricultural experts—please stop the laughing, we're going to be serious from this on—it was no fault of the press-agent work, which was really bully.

There surely was some class to this junket. From all I can learn about it, the big tour of the Congressional Waterways Commission three or four years ago was the only one that has compared in grandeur to this agricultural swing around the circle. For example, when the company left Italy and struck the boundary of Austria the Austro-Hungarian government was right there at the line, with a special train to drag the party around that interesting and picturesque dual empire! That was the way of it everywhere; the German states had special trains and boats ready most of the time. The natives were a bit vague as to what it was all about; but they understood that it was some American doings, and Americans are the leading purveyors of good tips; therefore a good thing, and to be pushed along. It surely was. The Waterways Commission went to find out about improving our rivers, canals and harbors, and was composed of select members of both houses of Congress. I am reliably informed that the supply of other things was so excellent that the commission never once had to drink water while it was in foreign parts, and thus the waterways of the Continent were so fortunate as to escape absorption by the voracious visitors. The commission didn't pretend to stick "on the water" throughout the entire trip; but it managed to see the Rhine by moonlight, also by daylight; and any other good-looking streams with the right sort of scenery. There were lots of banquetings and speechifying and

Some Investigators Who Went Across the Ocean and What They Found Out

By Judson C. Welliver

felicitations and assurances of mutual esteem with official, semi-official and unofficial personages, all of them possessed of fine capacities for liquids, but small taste for water; and on the whole the trip was a glorious success, save in the insignificant details of finding out about the waterways. On that point a secretary or two, with a stenographer, were able to gather up enough data from guide-books, government documents, and the like, to make up a very respectable job for the government printing-office; and as nobody ever reads such reports anyhow it will probably never be noted that the commission didn't report anything that could possibly be of any use to anybody.

I am able to report that the rural economics junket is going to do a lot better than all that; not that it missed any banquets, ruins, old churches, picnics, excursions or the like, but simply that it had the wisdom to lug along two or three gentlemen who had seen the stained windows and glaciers and Eiffel Tower and all such before, and who honestly wanted to learn about the rural economic things. These gentlemen hustled around and did the work while the rest of the company were sightseeing; and they will presently pull off a report that, according to forecasts at the Department of Agriculture and the Department of Commerce, is going to be very unusual.



RALPH MOSS, chairman of the House committee on agriculture, was one man who took the trip seriously. He missed a lot of allegorical windows, but he wised up on agricultural methods so much that he is getting ready to reorganize his whole system of farming; for Mr. Moss is a sure-enough farmer. He just recently bought a couple of thousand acres of land in Mississippi, and without letting loose from his farms—and constituents—in Indiana he has in mind to apply some foreign methods of management and marketing to the business of raising southern truck for northern consumers. Mr. Moss worked day and night, dodging the social features and getting associated with real farmers and farm organizers and farm financiers. Not being much of a linguist, his experiences were at times amusing. In Italy he could be seen sawing the air, talking very bad French at a bunch of Italian farmers, forgetting that even if his French were usable in France it wouldn't be worth anything in Italy. By the time he got to Germany he had brushed up on a tourist German vocabulary, and with the interpreters and his mixture of indifferent French, very bad German and a few picked-up phrases of Italian he would try desperately to converse with the German farmers. Like every other tourist with a few words of each language, he was sure to get them all mixed up in every conversation, and as a rule the interpreter would have about as much trouble as the farmer in making out what it was all about. But Moss was deadly in earnest about the business, and he got home with the idea that there was a vast work to be done for American agriculture along the lines of adapting European models to American uses. So did the other serious-minded folks who went along for real study; men like John Lee Coulter, author, economist and expert, who has recently been brought from the University of Minnesota to the Department of Commerce, and who is to do a good deal of work in this field of rural organization.

For one thing, the Department of Agriculture will send some experts of its own into the countries that are now esteemed best models for us. These are Ireland, Saxony, Denmark and Belgium. The case of Ireland is just now especially commanding. The recent junket spent a few hours in Ireland, and might well have devoted its entire three months to that country alone. If it had done just that, and had worked hard, it could have brought home a great deal worth while.

Ireland has perhaps 600,000 farmers, and rather more than half of them have been able to become

owners of the land they farm, under the Irish land laws of the last generation. Briefly, the British government, convinced at last that Ireland's prosperity could never be restored until the people had a chance

to own, once more, the land they lived on, adopted a plan by which it advanced the money to farmers who would buy the lands. The landlord was compelled to sell. The farmer got his loan on such terms that by paying a stipulated amount for a fixed period of years—commonly about fifty years—he would discharge the entire debt and own the land. This fixed payment was only about two and one-half per cent. interest on the purchase price of the land; and between getting such low interest rates and such a long-time loan the farmers were easily enough induced to advantage themselves by the plan. As a result the government has thus far advanced about \$650,000,000 for the farmers' purchases under this law, and the Irish government is asking about \$500,000,000 more credit with which to complete the transaction. When the thing is finished the peasant farmers of Ireland will own all the farms, and the English landlord will be an institution of the past. In actual operation this plan has worked with wonderful success. The Irish people are not only buying their land from the alien owners; they are handling it better than ever. Not many years ago the reputation of Irish butter was so bad that the best grades of it, when sent to England, were branded "Danish butter," because Denmark was supposed to produce the world's best. Indeed, a good deal of "Danish butter" also went to London from the United States! The Irish started co-operative butter-making societies and built modern creameries; these societies federated themselves together in big marketing organizations; they established brands, created reputations for the Irish butter, found how to get the best market and get it at the least expense. Other co-operative associations did the same for various other Irish products, and to-day Irish agriculture is in better condition than for a century, and improving constantly. The present effort is all being directed to forcing the people to do for themselves; to keep them out of paternalistic institutions.

Denmark is the country where, out of their own intelligence and their own initiative, the people seem to have developed the most efficient set of institutions for helping the farmer. These co-operative organizations in Denmark originated right down among the people. The government has done almost nothing to push them along. Co-operative rural banks are developed to a high perfection. The dairy associations control practically the whole foreign trade in Danish butter, which the world accepts as standard. These organizations are rich, and their credit is so good that if they wanted to start a line of ocean steamships to haul their products to England they would have no difficulty whatever in getting the money! But they don't. They have been smart enough not to try the impossible things. They confine themselves to the things in which they are pretty certain to succeed and in which they will benefit themselves.



ONE thing which the observers of rural organization noted in all the countries they visited was that the unorganized farmers always benefit by the organization, even though they don't belong. In Denmark, for instance, a hundred farmers may have a co-operative society for handling eggs and poultry. They gather in the produce, pack it, brand it, ship it to their regular selling agency, and distribute among themselves the proceeds. Now, the members of this society handle not only their own business, but that of other people in their territory; nobody is barred. The society becomes a guarantor of the accounts, a collecting agency and selling agency, for those who are not its members. For doing these services it exacts a very small fee, but so small that many farmers find it unnecessary to belong to the societies while using their facilities.

One of the very greatest benefits of co-operation is in the establishment of brands. In this big modern world of credit and of big commercial transactions reputation is about the biggest single institution. Get a trade-mark that is known to stand in the best market for the best goods, and live up [CONCLUDED ON PAGE 15]

IN FRONTENAC CAVE

As Told by One Who Was There, and Edited by Hayden Carruth

Author of "Track's End," "The Voyage of the Rattletrap," Etc.

Illustrated by Edward L. Chase

Synopsis of Preceding Chapters

Judson Pitcher, about eighteen years old, comes to Hawk's Landing, on the Mississippi River in Minnesota. Here he meets Captain Nathan Archway and his daughter Amy and his son Robert. Robert goes with Judson to the Lumberman's Bank, and while there it is attacked by the notorious gang of robbers led by Isaac Liverpool. Robert is shot and killed, and the gang escape to their hiding-place in Frontenac Cave. It is impossible to penetrate this cave by the only entrance known, since the robbers have closed it up. Captain Archway conceives a plan to get into it through a small sink-hole on the prairie a number of miles back from the Zumbro River. He and Judson go there in the night and lower themselves with a long rope. While they are exploring the upper part of the cave a thunder-shower comes up, and the flood carries the rope down the sink-hole and fills the small opening a hundred or more feet above with brush and soil. Before leaving the Captain's home at Hawk's Landing Judson finds, as he reluctantly admits, that he is very much interested in Amy Archway. When the Captain and Judson find there is no hope of getting out of the cave where they got in, they begin to search for another outlet, and keep it up for six days. By this time their food is gone and they are very weak. Since awakening on their first morning in the cave they have been greatly puzzled by a strange beating or throbbing sound which is especially noticeable in the Bedroom near Siuk-Hole Dome. Finally by using their gun-barrel as a crowbar they move a loose stone at the bottom of a small tunnel and get down into the main part of the cave. Looking down a pit, they see a smoldering camp-fire, and the Captain starts back to get their rope, but through haste and weakness falls down another pit into a stream of water. Judson goes after the rope, and, with their only candle down to the last inch, lowers himself into the pit with the aid of the rope and finds the Captain alive and with some cooked fish which he has found by the fire. They eat it, and later get fish from another river which they cook over a fire made of small sticks evidently washed into the cave by freshets. Having no more candles, they use sticks soaked in fish-oil. They continue to search for several days, but find no way out of the cave. On one of their exploring trips Judson stumbles over a man who is sleeping on the ground. He falls and his torch is extinguished. The man grapples with the Captain in the dark, and they try to throw each other over the edge of the pit; when Judson makes a light with his last match they find the man is Gil Dauphin, one of the Liverpool gang. He explains that he has been cast off by the gang and is at war with them, and he tells them that the only way to reach Liverpool's camp is by going up the pit down which he was thrown. They work many days in making a long pole out of dry twigs with which to climb up this pit. They carry the pole down a passage called the Gun-Barrel and suddenly meet the Liverpool gang, who begin firing at them with their revolvers. They all escape up the Pocket-Gopher Hole and hide in an obscure place which they name the Robin's Nest. Here they stay for several days. They find that Dauphin has some powder and caps in a flask, and the Captain makes some large shot from bird-shot and they load the gun. They are driven from the Robin's Nest by hunger, and go to Dauphin's Pit in the hope of getting out through that part of the cave. The Captain climbs the rope and is captured by some other members of the robber band at the top. These men take his gun and fire down the pit at Judson; he is unharmed, but runs into the arms of Isaac Liverpool. Dauphin alone escapes.

Part VI.

I escape from Liverpool and hide in his part of the cave; the return of Dauphin, and our life at the Swallow's Nest; then, at the Fort, we all meet once more, where there is desperate work, and I am forced to drop down a pit, leaving everything and everybody behind.

THERE were two men with Liverpool. When I ran out of the Gun-Barrel he snapped me up like a dog catching a rabbit coming out of its burrow, taking me by the collar and jerking me around without the least ceremony. Then he snatched out his revolver, I thought to shoot me without any more ceremony, but it was only to shoot at Dauphin, which he did not do after all, as the fellow was out of sight along Bat Street in no time at all. Seeing which, Liverpool said, quick as a flash:

"Joe, you and Tom go after him. Don't fetch him back—understand!" They started, and Liverpool said to the other man: "You go back and get Pete. Put out the fire 'fore you leave." Then Liverpool held up his lantern and had a better look at me.

"Yes," he said, "I reckoned I was right. I ain't gener'ly wrong. I've saw you before. This trouble all comes of my being so soft and easy. That friend o' yours in the bank ain't bothering us any, and you wouldn't be neither if I wa'n't a reg'lar old woman. Now, you answer right: What you doing in this here cave?"

"We were exploring it," I answered.

"Yes, you were exploring it! We'll explore you. What was that shooting I heard?"

"One of your men shot at me."

"Oh! If he don't learn to shoot better I'll shoot him. Now, where's that old Cap Archway that's along with you?"

"He climbed up the rope, and I think your men have got him."

"They have, have they? We'll just go up and see. And then we'll just have the two of you give us the particulars, the truthful particulars, 'bout where you got in, and how many there is of you, and what you want. Then mebbe you'll mention—sorter just mention, you understand—how you expect to get out;" and he burst into a laugh and led me down the Gun-Barrel.

When we came to the pit I could see that a light of some sort was burning in the tunnel above. Liverpool called, but got no answer. "Reckon they've took the old man to the Fort," he said. Then he opened his lantern and took out the candle, a very thick one with a large wick, stuck it in a socket on his hat, took hold of the rope and said to me:

"I reckon you can climb this here?"

My hands were raw from having slid down before, and I showed them to him and said that I was afraid I couldn't. "That don't make any difference," he replied. "Just you come along close to me," and he started up. He had not gone two arms' length when he dropped back and said: "If I don't watch out you'll be running away again. Just you go up first, and if you run when you get up there we'll soon find you."

I started up, but the pain was so great from my blistered hands that I could scarce keep my hold on the rope: he kept shouting at me to climb faster, however, or he would shoot at my legs, which helped a good deal, and I got on pretty fast after all.

I scrambled up on the steep incline at the top and stopped to rest, the rope drawn taut under my knees by Liverpool's coming up like a squirrel. I think I was ever slow-minded (I know it, indeed), but this time I did at last, for a wonder, get my stupid wits together: so just as Liverpool's candle came above the edge I snatched out my knife and with one desperate stroke cut the rope. There was a lighted lantern and a basket of food and other things at the top of the incline. I took the lantern on one arm, filled one side pocket with candles and the other with cold meat and cheese, put two boxes of matches in my trousers pockets, tucked a loaf of bread under the other arm and ran away into the cave with all speed. Though I ought to have said just now that after I slashed off the rope I heard Liverpool strike the rocks pretty solid at the bottom of the pit; but I thought it was good enough for such a great scoundrel.

I ran on through the cave, dodging this way and that, without much reason, only going, as I thought, away from the Fort, Dauphin having given me a notion as to where it lay. But all the time I kept thinking of what Liverpool had said about the ease with which they could find me in this part of the cave, the truth of which I did not doubt. When I got a little calmer I stopped and pulled my wits together (being a good deal encouraged at the way they had stood by me at the pit), and soon I worked out a plan which I think was not bad, I being, as you know, no more than a boy.

I ran on, looking with all eyes for a pit or hole, and soon I found one that was exactly what I wanted. It seemed deep, but the sides were slanting and rocky, and I thought a person might, if he had little care for his neck, scramble down it. On the brink of this, then, I set down my lantern and scattered about a few bread-crumbs. I then lit a candle and started back as hard as I could run for the pit out of which I had just come. On coming up to it and looking about I spied a little bench or shelf above my head just at the top of the steep incline where the wall jogged back. It appeared two feet wide and ten long. The only way to reach it seemed to be by leaping up, and I doubted much if I were good for it. Just then I saw the gleam of a light along the tunnel. I puffed out my candle and tossed it and the loaf of bread on to the ledge, stripped off my coat and sent it after the bread and candle. Then, slipping my fingers over the edge, I gave such a leap as I had never given before, landed fairly on top of the coat, and stretched out on the shelf flat as a flounder. All this time I could hear Liverpool roaring below, so I knew he was not dead.

The man with the light came up, holding the candle above his head so that it shone in my left eye as I lay flattened out on my right ear. Then he scrambled down the slide, as I could tell by his giant shadow on the roof, and called to Liverpool and asked what was the matter.

"Get another rope," roared back Liverpool. "I'm hurt. Hurry up!"

The man rushed away, his shadow, dancing all over the roof and side of the pit, growing bigger and bigger till it swallowed up everything. But before he could get back, some of the other men came down below—Pete and the one who had gone after him, as I soon told from what they said.

"Are you much hurt?" asked one of them.

"My left arm is broke and I don't know what else. Give me a lift, and I'll see if I can walk."

He seemed to find that he could walk, then suddenly he broke out in a torrent of abuse of me for cutting the rope, adding that he would hunt me down and pitch me headlong from the top of the highest pit in the cave; and you may perhaps imagine the fit of terror into which this cast me, lying not four feet from where he would soon come, and knowing full well that he would have no scruple in doing as he said.

The other man was soon back with the rope, and after the two below had come up they hauled Liverpool up. He leaned against the rock below me to rest and with his lips not one yard from my ear rolled out the most frightful language about me, ending by swearing to go to the ends of the cave for me and to fling me into the Bottomless Pit, a hole I had heard Dauphin tell of, and the deepest in the cave. So I lay there not daring to breathe.

"Why didn't you hit him when you shot, you lubber?" he demanded at last.

The man broke into the most violent laughter and kept it up till I thought he would never stop. When he could speak he said:

"Why didn't I hit him, hey? Why, hey? Just wait till you get to camp and I'll show you why. I'll stand off and let you shoot at me with that gun," and the man began to laugh again.

"You've got the old Cap'n, have you?" said Liverpool.

"Yes," answered the man.

They all went on, after one of them had made a sling for Liverpool's arm out of the lining of his coat, and I was left on my shelf in the blackest darkness. I turned over into an easier position, but it took me, I verily believe, an hour to get calm enough so I could think. Then I decided I had best eat something, as I knew it was hours since I had done so. And after I got started at the bread and cheese and meat, never, I think, did food taste so good before, and when I thought of fish I wished I might never see any again; nor should I have cared much since if I had had my wish.

When I had done eating I found that I was very thirsty, but I could see no way of getting any drop to drink. I then fell to considering of what was best to do, and at first I thought I would slip down the rope and get back to the part of the cave where we had been so long, but I soon decided against it, and on these grounds, namely: First, I should stand a chance of running plump into the arms of the men who were looking for Dauphin. Second, my hands were so sore that I doubted if I could go down the rope. Third, I was in the only part of the cave where there was any hope of getting out, and if I went down might not be able to get up again (though I had not forgotten the pole). Fourth, I had food and seemed to be fairly safe from being found, and it is always best to leave well enough alone. Fifth and last and most important (I say it who shouldn't, but I defy anyone to show that I am a boaster). I wanted to stay as near poor Captain Archway as I could, hoping that I might be able to do something for him.

Shortly after eating, being pretty tired, I fell asleep and had a very good nap, and one, I suspect, of some hours. When I waked I found all still, and without much waiting began breakfast. But I could do no sort of justice to it, being now half consumed with thirst. I had seen some pools of water not far off, but I was afraid to get down to them, knowing full well that I could never again spring up to my perch, being now stiff and my hands sorer than ever.

I lay there for what I suppose was several hours, though it seemed to me rather like days, my thirst growing all the time greater. Once two of the men stopped at the pit to see if the ones below had come up.

"They ain't up yet," one of them said, "the rope's down."

"Reckon they ain't having no better luck finding Gil than we've had with the young feller."

"Oh, he's gone down the Slide Pit," answered the other. "I knowed it soon's I seen his lantern. But I'll bet he'll never come up again."

They turned to go back, the other saying: "That's so, but Ike would rather of throwed him down."

I should have been again half scared to death had I not been by this time so far gone with thirst that I could pay no attention to anything else. I tried to eat, but could force no morsel down my swollen throat. At last I could stand it no longer. I felt that I must have water or perish miserably where I lay. So I slipped off, blundered along [CONTINUED ON PAGE 19]



I snatched out my knife, and with one desperate stroke cut the rope

Thoughts for Sunday's Quiet Hour

Sinai and the Commandments

By Merle Hutchinson

THE Biblical history was written by Hebrews for Hebrews. It gives us, as no other history could, the point of view of that people, and delivers its spiritual message to mankind the more directly for this very method of treatment. But to understand details that it was needless to explain to the Jews, to picture the historical scenes as they

The Fireside Editor has secured for Sunday reading a valuable series of articles upon Jewish history as it passes before us in the Sunday-school lessons. They will be helpful to teachers and students in the Sunday-school. The series will deal, too, with students connected with the work of young people's societies of national importance.

were His symbols. The messages that their leader brought down from the burning mountain, these were His words. But Him they saw not, were never to see.

Before they left the plain of Sinai their body of laws was well under way; their religious worship, and many of their national customs, settled. The horde of slaves, though it would still for

were, to see these people as their neighbors saw them, we must look in the pages of Josephus or Milman or Eidersheim, or of the fiery and picturesque Stanley.

The Wilderness into which they entered, this company of six hundred thousand people, with their flocks and herds, was not the desert that it is to-day. Even now a scant herbage covers much of the space, and here and there are oases, "wells of water," as they are called in Exodus. But its only roads were then as they are to-day, "wadys," the dry beds of torrents that for a few weeks only in the year are filled with rushing water. A land like this needs great care of its trees and small growth, but in the thousands of years since the Hebrew wanderings its only dwellers have been the careless and ignorant Arab tribes. Even from the accounts of travelers of the last century can be noted the devastating effects of the yearly torrents and the succeeding droughts. Even if less bare than to-day the Wilderness was yet a strange land indeed to eyes accustomed

long years bear the marks of its serfdom, had yet taken the first steps in an ordered national life. It was, and indeed to this day is, a life that can no more be comprehended if the sense of the personal relation with Jehovah be left out of the account, than can the course of the Puritans in England, or of the Mohammedans in Spain.

The Mosaic code has had its influence on all the written codes that have followed. Part of it related wholly to the exigencies of the wandering life of that time. In some of its regulations can be traced likenesses to Egyptian laws, and in some to laws that still exist among the Bedouins. But the ten "words" that came from Sinai to the trembling people below, that Moses brought down from the mount, cut in on both sides of the two tables of red sandstone, these have become the guide of the civilized world. They differ from any other set of laws, in that they set beside the rules of ordinary morality the belief in, and personal reverence for, a divine ruler of the universe. This it is that has kept them a power, long after the tables of stone were lost in the destruction of Jerusalem by Nebuchadnezzar.

Farm Junketers in Europe

[CONTINUED FROM PAGE 13]

to that reputation, and you can raise bananas in Labrador at a profit. Reputation is what has made the Danish farmers rich; reputation carefully cultivated and sedulously maintained in foreign markets.

And reputation, thus acquired and retained, is the very thing that American agricultural interests too much neglect in foreign markets.

The most astoundingly interesting narration I have had from any of the junketers deals with present-day agricultural reforms in Russia. The tale is almost beyond belief. Since the humiliating war with Japan the Russian autocracy, it seems, has been determined to retrieve the national reputation by extension of education and by improving the economic condition of the peasant masses. To this end the Imperial Russian Bank has established branches all over European Russia for the express purpose of financing and encouraging agricultural self-help among the people. A co-operative society, properly organized, can get its capital through the local branch bank: the peasants, however, run the co-operative society themselves, lend the money back and forth, conduct buying and selling agencies, operate all sorts of stores and in fact do the most multifarious kinds of business. At the same time schools are being established, and attendance is being made compulsory.

All over European Russia the government is building elevators and great central warehouses for grain. Now list to how they handle grain over there:

The farmer turns his crop over to his local co-operative, which in turn aggregates it together with that of the other members and sends it to one of these government elevators. In charge of the elevator is an agent of the Imperial Bank's local branch. He takes in the grain and pays for it: when his branch has all its cash invested in grain, certificates of storage are sent out to the central bank, which, on the basis of these certificates, issues currency up to a fixed percentage. There's your old Kansas populist plan of warehouse certificates in use as money! It works in Russia, and it is lifting the Russian peasant toward an economic status, and an intellectual as well, that will make him one of the great figures in the world of agriculture in a very few decades.

Our own secretary of agriculture, Mr. Houston, wants to develop, out of all these studies of foreign experience, a scheme that will be new in essentials and applicable here. We can't take a system from Ireland, Denmark, Russia, Holland or anywhere else. We have other problems, and different ones. What is wanted is to work out adaptations of the co-operative plan of marketing, and of the rural banking schemes, with which the American rural community may help itself. That is going to be the foremost work of the department under this administration. Foreign experience and examples will be useful; but the system developed will at least have to be an American system; and when it is worked out it ought to be the best in the world, because we have here the biggest array of agricultural opportunity, and the biggest population of highly intelligent farmers, in the world.

The Kernel of Truth

By Merle Hutchinson

NOTHING that is wholly and utterly without virtue can keep its hold on civilized men and women, and it is not difficult to find the kernel of truth in the recent developments of religious belief. New Thought and Christian Science. New sects usually arise to emphasize some truth, not new, but neglected or overlooked at the time, and the tenets of these two bodies certainly need more emphasis than they are wont to receive in ordinary life. The Emanuel Movement picked out these truths, but they are those that all physicians, as well as all ethical teachers, had always known. Marcus Aurelius, as well as the writers of the Psalms, Buddhists and Confucious himself, all tell us of the influence of thought on the body. St. Paul's command, "If there be any virtue, if there be any praise, think on these things," is no mere theory of pious duty. It is a practical rule for sane living, striking at the root of envy, discontent, anger, resentment and the thousand shades of unkindly feeling and speech and action that not only degrade life, but endanger mental soundness.

There is a volume, "Personal Responsibility for Mental Disease," which tells, not in the language of the religious teacher, but in that of the scientist, what is the danger of giving thoughts of evil or of fear lodgment. We do not believe that disease is but an imagination, prayer the only treatment for it; or that thinking lovingly of all the universe will remove from us the disasters of life. But we know, even though we may not scientifically analyze, the effect on the character of the prayerful life, the effect of faith on body as on mind, and the extraordinary power of generous and just thought. Think on these things.

Successful Fireless-Cooker Canning—By Mrs. A. R. Finley

ONE evening last summer, while my husband and I were discussing the good qualities of the fireless cooker, the thought came to us that we could use it for canning our vegetables.

Our first trial was with green peas. We canned a few quarts in the fireless cooker and impatiently waited for results. A week or two passed, and we found no cans opening. We then canned string-beans, Lima beans, beets, peas, tomatoes, corn and other vegetables. Later, when the time came to eat them, we found all the vegetables excellent.

The vegetables should be prepared and placed in the jars as indicated below. The jars should be put in a fireless-cooker vessel. Fill the vessel with hot water. Place it on the stove, and heat the water until it boils vigorously. Heat a fireless-cooker radiator until paper will brown upon it. Place the radiator in the fireless cooker. Set the vessel containing the jars on the radiator while the water in the vessel is boiling. Put the cover on the cooker, and leave it about twelve hours.

We think the flavor of beans, peas and asparagus is improved by blanching. Place them in an open kettle, boil for ten minutes, and drain off the water. Gather the vegetables fresh from the garden.

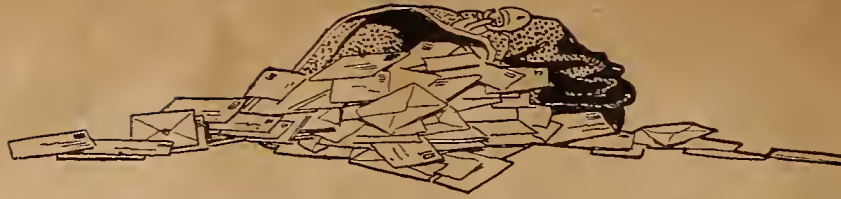
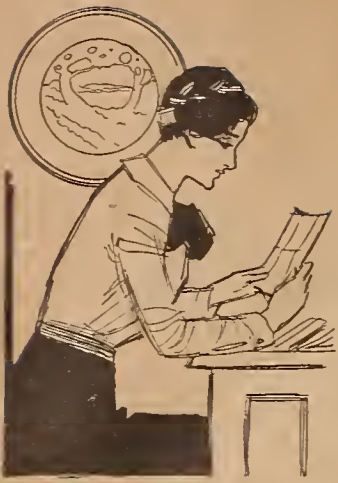
They should not be used when ripe, but should be gathered green, just as if they were to be used on the table. *String-beans* should be cut, not broken, washed and blanched. *Lima beans, peas and asparagus* should be washed and blanched. Pack them solidly in the jars. Fill the jars to overflowing with hot water. Cap the jars, and place them in the fireless-cooker vessel, and proceed as directed above. *Beets*, to make them tender, should be boiled sixty minutes in the fireless cooker. Carefully remove the skins after boiling. Pack the beets in jars. Fill the jars with hot water. Cap the jars, and place in the cooker vessel as above. *Pumpkin* should be peeled and cut in inch cubes. Pack the cubes in the jars. Fill the jars with cold water. Cap the jars, and heat them in the cooker vessel. *Squash* should be baked until soft. While it is hot scrape from shell into jars. Cap the jars and heat for the cooker. *Spinach* should be washed and then boiled about two minutes. Pack in the jars. Fill the jars with hot water, and heat to boiling-point in the cooker vessel. *Corn* should be used before it is too old. Run a sharp knife down each row of kernels. Scrape the pulp into jars. Pack the pulp in the jars to within one inch of the top. Fill the jars with

water to within one-half inch of the top. Be sure to have the water soak to the bottom of the jar. Add one teaspoonful of salt and one teaspoonful of sugar to each pint of water used. Cap the jars, and heat for the cooker. Our corn canned by this method almost a year ago can scarcely be told from fresh corn. *Sweet potatoes* should be washed and packed in jars. Fill the jars with cold water. Cap the jars, and heat them for the cooker. *Tomatoes*, have the finest flavor when canned by this method. They may be canned whole or otherwise. Peel the tomatoes by pouring boiling water over them until the skins begin to slip. Plunge the tomatoes into cold water, and quickly remove the skins. Pack the peeled tomatoes in jars. Mash some tomatoes, and fill the jars with tomato-juice. Add a teaspoonful of salt to each quart of tomatoes. Cap the jars, and heat them for the cooker.

All kinds of fruit may be canned in the fireless cooker. The fruit will hold its shape better, and it will retain more of the true flavor of the fresh fruit than when canned by the old method. The fruit should be selected and prepared as for ordinary canning. Instead of putting the fruit in a kettle, put it in jars. Shake down a few times in order to pack

it in the jar. Have plenty of boiling water. Take the required amount of sugar, put it in a pitcher, and pour a little boiling water over it. Pour the syrup over the fruit in the jar until the jar is full. Do not use too much water at first. If the syrup does not fill the jar add boiling water until the jar is full. Cap the jar, place in the fireless cooker without a heated radiator, and leave for one or two hours. The following gives the required amount of sugar for fruits:

Fruits	Amount of sugar to quart (Use a regular measuring-cup)
Apples (sour)	1 cupful
Blackberries	1 cupful
Cherries (sweet)	¼ cupful
Cherries (sour)	1 cupful
Currants	1¼ cupfuls
Crab-Apples	1 cupful
Gooseberries	1 cupful
Grapes (wild)	1 cupful
Huckleberries	½ cupful
Peaches	1 cupful
Pieplant	1¼ cupfuls
Plums	1 cupful
Pears (Bartlett)	¾ cupful
Pears (sour)	1 cupful
Quinces	1¼ cupfuls
Raspberries	¾ cupful
Strawberries	1 cupful



The Congress of Cousins

Letters from Here, There and Everywhere To Their Cousin Sally

DEAR COUSINS—This Congress of Cousins was planned so that the cousins might better understand how far-reaching and delightful our membership is. Of course it cannot personally introduce each member—there are too many of us, you see—but, like the Congress of our country, it is representative of many sections. And it shows that everywhere, in the Southland, among the Eastern valleys, upon the wide lands of the Central States, in the sturdy North and the mountain-crested West, the consins are charming girls and manly boys.

I wish I were able to tell you how happy it makes me to receive and answer your letters: these letters which tell so many interesting stories. Through them I learn of your school life, your playmates and the nice times you have together: your parents, brothers and sisters, and the dear homes you prize and love.

I find the same spirit of comradeship among all the consins. The spirit of fair play and loving service. The desire to excel and the willingness to study hard and work for that which each boy and girl wishes to become.

When a girl cousin tells me, "Mama says I may be her partner in raising chickeus after school closes," I know at once that when autumn days come Lena will have something to show for her vacation, and her Mama will be still more sure that Leua is learning womanly habits of thrift. And when the letter from Harry comes, telling me he wants to go to an agricultural college some day, "And so, Cousin Sally, I'm learning all I can now on the home place," I can see just as plainly as can be that his mind is growing every day, and that, good as college is, he will learn outside as well as within its walls. For Harry is already realizing that wherever we are we can go to the school of life which is called the "World's University."

Then too, as everyone's life should have play as well as tasks, your letters tell of jolly times. They tell me that while the northern lassie is having the greatest kind of fun skating her southern cousin is going in surf-bathing or having Saturday-afternoon picnics. The boy living among the mountains tells of scenery and the zest of life in the woods, while his cousin of the prairie-lands writes of what fine times he has out in the great open spaces.

From everywhere come the cheery notes of striving, achieving cousins. Lovingly, COUSIN SALLY.

A Few of the Letters Received

DEAR COUSIN SALLY—I will tell you about a pet I had. When my sister would play the piano it would grunt, and when she stopped playing it would stop grunting. It was a pig named Chub. One day while I was playing with it (we were running around the house) I hid from it in the corner by the dining-room. After a while, when it found me, it was so angry it bit me on the hand, so I never play games with it any more. Your cousin, BESSIE GORD, Carlos City, Indiana.

DEAR COUSIN SALLY—My chum and I joined our club last summer and like it very much. I will tell you how to wax autumn leaves. Melt some paraffin in a pie-pan. Dip the leaves in the wax separately, being careful that they are well waxed on both sides. Let them dry. They are very pretty and can be kept indefinitely if handled carefully. Your loving cousin, VIOLET LUCAS, Buffalo, Minnesota.

DEAR COUSIN SALLY—I received my button and like it very much. I love to go to school. We have a little calf which looks just like a little deer; it is just the color and everything. We are going to call it Fawn. Lovingly, LUCILE HOUSTMAN, Wadena, Minnesota.

DEAR COUSIN SALLY—I am a twelve-year-old boy of the Bluegrass State. Although I live in town, I work on a farm every summer. Last summer I helped Papa put up 200,000 pounds of hay. I have a splendid dog named Jack. I had a hog and a calf, but have sold them. Your consin, LAMBERT THOMPSON, Fancy Farm, Kentucky.

DEAR COUSIN SALLY—I am going to write a little history of our life and send it to you. I will illustrate and write it all by myself. If you will send me some physiology subjects to write for you I will be glad to write them. I love physiology and geography best of all my studies. Lovingly, PAUL HART, Longmont, Colorado.

DEAR COUSIN SALLY—I so like to get letters from my cousins and you. I like to hear from those who live in a far-off place. Once Mama came for Sister and I when school was out. When we got started my little sister lost her mitten, and we stopped to get it. When she found it and started to get in the buggy the horse started. Mama could not stop him for a few moments, and my sister was thrown, but escaped being hurt. That was surely an adventure. Your loving cousin, MILDRED WRIGHT, Conneautville, Pa.

DEAR COUSIN SALLY—When I received your letter telling me how to make a kite I had my kindling to split, and so I went to work in earnest. This did not take long, and then I was ready to make my kite. I used pine, which I got from an old shutter, for the frame, and macramé cord for the string. I used cambric for covering. At first I had on about five foot of tail, but, as it dived after rising twenty or thirty feet, I kept on adding more tail till at last I had eight feet. On Saturday, March 29th, there was a steady breeze, and I tried my kite. It rose slowly. I hadn't learned to keep jerking on the string, and so the kite dropped to the ground. At last I got onto the knack and could handle my kite pretty well. I thank you ever so much for telling me how to make it. It stays up so well. Your cousin, JOSEPH HOWEY, West Salem, Ohio.



Cousin Sally

DEAR COUSIN SALLY—Mother took me to see a humming-bird's nest on the bough of an apple-tree. The young birds were about as large as small bumble-bees. They looked strange with their fuzzy skins and long bills. The nest looked like a knot on the tree. It was about as large around as a silver dollar and was lined with a sort of down. I did not see any eggs, but Mother says they are pearl-colored and about as large as peas. I help Mother with the housework; I wash dishes, sweep, iron, make beds, and one day I mixed bread. I also carry water and lunch to my father. I am twelve years old. Lovingly, GRACE FORD SINCLAIR, Coat's Grove, Michigan.

DEAR COUSIN SALLY—I had a great deal of fun last month, and I am going to tell you a secret; I had the most fun helping others. I wonder if you know how much fun one can have with a broom? Sometimes I make believe that the broom is alive and can understand when I talk to it. Then I get the sweeping done in no time. Mother hasn't been very well, and while she is away recovering her health I do the work around the house. I suppose it isn't done very well, but I do the best I can. Father gave me a bicycle for a birthday gift last year, and when Mother wants anything from the store I jump on my wheel and away I go. But that isn't work; it's fun, for I like to ride. Well, I must be getting dinner, so good-by. Your faithful cousin, DONIS BUSKIRK, La Fargeville, New York.



DEAR COUSIN SALLY—I am in Chicago now. Down South, where my home was, the weather was always warm, and I tired of it. The snow and cold weather are uicest, I think. I went in bathing in Lake Michigan. It was nice, but not so nice as Tampa Bay, where the water is salty and which held one up when floating and was easy to swim in. I visited in Lincoln Park many times before we went down South, but I shall often go again, for I never get tired looking at the animals. No one would. I have been to Chicago's Washington Park, River View Park, White City Park, Forest and Lincoln Parks. I went to River View Park, where my sisters, Hazel and Mamie, took me down "The Derby." Cousin Sally, "The Derby" chute-the-chntes is so steep and has so many loops to loop that I lost my breath and was as white as a ghost when I got to the bottom. I was so frightened. Sincerely, DOROTHY WOODCOT, Chicago, Illinois.

DEAR COUSIN SALLY—Will you step over just a wee bit and let a little North Carolina cousin in for a little chat? I live in the country on a farm of one hundred and ninety acres. I am a little housekeeper. I keep house for my two brothers and my grandmother, who is an invalid. As I take care of her, I have to stay home most of the time. I get very lonesome sometimes, so I would like to receive letters and post-cards from the consins. Your affectionate cousin, SWANNA BUCKNER, Siler City, North Carolina.

DEAR COUSIN SALLY—I am a farmer boy ten years of age. I have three brothers, two older than myself. Both these are away from home, one going to school, and the other a grown man working for himself. My little brother is three years of age, and my sister seven. Our little farm is about two hundred yards from the railroad and the post-office. I have quite a bit of work to do helping on the farm, in the garden, doing chores, etc., but my greatest puzzle is to think up something for play and amusement when my work is done. We are alone so much of the time and have to amuse ourselves. Cousin Sally, if you could give me a dot on this I would appreciate it very much. Your cousin, C. M. TRACY, Boulogne, Florida.

DEAR COUSIN SALLY—We got the letters to-day and were glad to hear from you. Indeed we do like those buttons, they are so pretty. We have a nice little kirtten two weeks old. It is very cute. Its name is Floss. We also have a dog called Coou. Our pony's name is Sunday May; he is very pretty and is gentle enough for us to ride. We have lots of fun. With lots and lots of love from Your cousins, MIRIAM, GLADYS and DOVE DAWSON, Hayden, Colorado.

DEAR COUSIN SALLY—I am a little fourteen-year-old girl living in New York State. It is, I think, one of the nicest States in our country. Don't you? I would like to exchange postals or letters with the cousins. Being a cripple I am not very stroug, so I just have quiet pleasures. Your cousin, MABEL LANDERS, Hague, New York.

DEAR COUSIN SALLY—During the winter vacation I made a quilt and did lots of other things. I am ten years of age. I have three brothers; two of them are older than I. I live on a farm. I have a pretty shepherd dog whose name is "Watch." I go to school. I am in the sixth grade. Yours lovingly, ZENA TOOTHACKER, Strong, Maine.

DEAR COUSIN SALLY—Brother Jim is writing to you, so I want to write too. I am seven years old and in the second grade. I have two nice little nephews and a little niece. My sister takes care of my two brothers and I. We have ten little chickeus and some ducks. We will have more, for we have chickeu and duck eggs for settings. Your cousin, CALVIN RILEY, Olympia, Washington.

DEAR COUSIN SALLY—I am ten years old and in the fourth grade. I live ten miles from Olympia, not on a farm, but in a lumber camp. They cut the trees down in the woods and bring them in on iron trucks pulled by a small locomotive, to be unloaded into the mill where they are sawed into lumber. It is a very interesting sight. Your friend, LUCILE BATES, Tumwater, Washington.

DEAR COUSIN SALLY—I am a little boy nine years old. I go to school every day. I am in the fifth grade. I love my school work, and when I get home from school I jump around and do chores, such as getting coal, kindling and water for morning and running errands. I have two dear sisters aged seven and eight. Your cousin, ORVILLE WALTERS, Enid, Oklahoma.

DEAR COUSIN SALLY—I am in the sixth grade. All of the school children gave their money to buy clothes for the children of Indianapolis who have had their homes destroyed by the flood. The teachers took the money and bought dressgoods which we made into dresses. It is nice to feel you are helping. Your loving cousin, SUSIE GOOD, Whitestown, Indiana.

The First Autumn School Clothes

Designs by Grace Margaret Gould

Woman's Home Companion patterns are not sold in stores or through agents. They are exclusive patterns. They may only be ordered from our three pattern depots. Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio; Pattern Department, Farm and Fireside, 1554 California Street, Denver, Colorado



No. 2343

No. 2341

No. 2343—Buttoned-on-the-Shoulder Dress with Guimpe
2 to 10 years. Material for six years, two and one-fourth yards of thirty-six-inch material, one fourth of a yard of contrasting material and one yard of thirty-six-inch material for the long sleeve guimpe. The price of this pattern is ten cents

No. 2341—Boy's Slip-Over Russian-Blouse Suit
1 to 6 years. Material for 2 years, one and three-fourths yards of fifty-four-inch material, with one-fourth yard of thirty-six-inch contrasting material for the trimming and the collar and cuffs. The price of this blouse pattern is ten cents

No. 2330—Russian Suit in Panel Effect
2 to 6 years. Material for 5 years, three and three-fourths yards of thirty-two-inch material, or two and one-fourth yards of forty-five-inch material. The panel may be trimmed with braid. The price of this Russian suit pattern is ten cents

No. 2149—Boy's Box-Plaited Suit: Side-Closing
2 to 8 years. Quantity of material required for 4 years, four and one-fourth yards of twenty-four-inch material, or three yards of thirty-six-inch material. Serge or worsted may be used for this suit. The price of this suit pattern is ten cents



No. 2330

No. 2149

No. 2372—Misses' Cossack Blouse
12 to 18 years. Material for 14 years, three and seven-eighths yards of twenty-two-inch material, with three fourths of a yard of twenty-seven-inch contrasting material. The Russian, or Cossack, blouse is very comfortable as well as exceedingly stylish for school wear developed in any of the serviceable woolen or heavy wash fabrics. The price of this misses' blouse pattern is ten cents

No. 2326—Misses' Three-Piece Skirt
12 to 18 years. Material for 14 years, four yards of twenty-two-inch material, or two and one-eighth yards of thirty-six-inch material. For every-day wear the three-piece skirt model with seams over the hips and front-opening is much favored this season, and is often trimmed with buttons to give added style. Pattern, ten cents

No. 2373—Misses' Waist: Side-Fastening
12 to 18 years. Material for 14 years, one and one-eighth yards of fifty-four-inch material, with five eighths of a yard of twenty-seven-inch silk and one eighth of a yard of tucked net for the collar. A bright-colored tie gives an added note of smartness to this waist. Pattern, ten cents



No. 2372
No. 2326

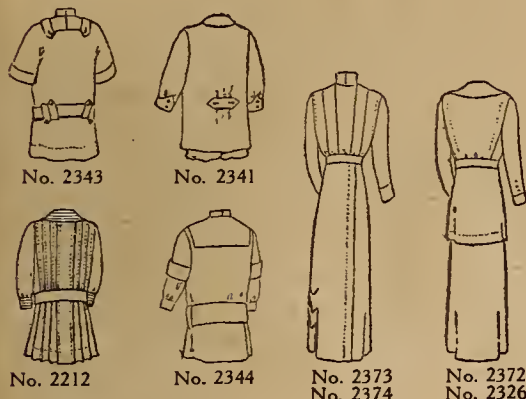
No. 2373
No. 2374

No. 2235
No. 2236

No. 2235—Misses' Waist: Large Armholes
12 to 18 years. Material for 14 years, one and five-eighths yards of thirty-six-inch material, with one-half yard of contrasting material thirty-six-inches wide for collar and cuffs, which may be embroidered in a simple design with two or three brightly colored cottons. Price of pattern, ten cents

No. 2236—Misses' Three-Piece Skirt
12 to 18 years. Material for 14 years, four and one-half yards of twenty-two-inch material, or two and three-fourths yards of thirty-six-inch material. This skirt is a little high-waisted, making it particularly graceful for the growing girl, especially if she is inclined to be stout. The price of this three-piece skirt pattern is ten cents

No. 2374—Misses' Draped Skirt
12 to 18 years. Material for 14 years, one and one-fourth yards of fifty-four-inch material, with seven eighths of a yard of silk for the band, which may be some contrasting material in a matching or harmonizing tone. The trimming on the waist and the belt should be of the same material. The price of this draped skirt pattern is ten cents



No. 2343

No. 2341

No. 2373
No. 2374

No. 2372
No. 2326

No. 2212

No. 2344

No. 2373
No. 2374

No. 2372
No. 2326

No. 2235
No. 2236

No. 2329

No. 2330

No. 2149

No. 2214

No. 2342

Three smart but simple dresses for the girl in her teens



No. 2212—Plaited Dress: Tucked Collar and Cuffs
6 to 12 years. Material for 8 years, five and three-fourths yards of twenty-seven-inch, or four yards of thirty-six-inch, one-half yard of material for collar and cuffs and one eighth of a yard for belt. The price of this pattern is ten cents

No. 2344—Double-Breasted One-Piece Dress with Guimpe
4 to 12 years. Material for 8 years, two and one-fourth yards of forty-five-inch, five eighths of a yard of forty-five-inch contrasting material and one and one-eighth yards of thirty-six-inch material for guimpe. The price of this pattern is ten cents



No. 2329—Boy's Blouse and Knickerbockers

6 to 12 years. Material for 8 years, four and one-fourth yards of twenty-seven-inch material, or two yards of forty-five-inch material. This suit is a stylish one for the older boy to wear to school. It can be made of a worsted, mixture serge, homespun or diagonal suiting in dark tone. Price of this suit pattern, ten cents



No. 2214—Girl's Box Coat

2 to 12 years. Material for 6 years, two and five-eighths yards of forty-four-inch, one yard of contrasting material. Price of pattern, ten cents

No. 2342—Long-Waisted Dress with Kilted Skirt

2 to 12 years. Material for 8 years, three and one-fourth yards of twenty-seven-inch material, or two and one-eighth yards of forty-five-inch material, with five eighths of a yard of forty-five-inch contrasting material. Price of pattern, ten cents



Miss Daisy Field—"Well, Anty Drudge, I told Silas last night that I would marry him and stay here in the country. Since you told me how easy Fels-Naptha Soap makes the work, I've decided not to go to the city."

Anty Drudge—"I know you are going to be happy, and I'm sure you'll never regret your choice. Love and Fels-Naptha Soap make happy homes."

Housework need not have any terrors for any woman, if she will do it the new, cool-water, no-hard-rubbing, easy way.

Use Fels-Naptha Soap for your weekly wash. It will be on the line half a day earlier, and will be cleaner, sweeter and whiter than ever before. Fels-Naptha does the best work in cool or lukewarm water, without hard rubbing and scrubbing. It dissolves dirt and grease, and takes out stains.

Follow the directions on the Red and Green Wrapper.

Fels & Co., Philadelphia



A Few Delicious Peach Recipes

By Jessie V. K. Burchard

IT SEEMS like painting the lily to cook peaches, which are so delicious in their natural state, when ripe and mellow, and yet there are a great many delightful dishes which have peaches for a foundation, and which will make variety in the daily bill of fare.

One very good way to use fruit that is not of the very choicest is in peach teacake. Take a mixing-spoon full of lard and butter, half a cupful of sugar, one beaten egg, half a cupful of milk and two cupfuls of flour, sifted with a heaping teaspoonful of baking-powder. Spread this batter about half an inch thick in a dripping-pan, and cover with pared and sliced peaches. Sprinkle with sugar and a little cinnamon, and bake half an hour in a brisk oven. Serve with cream or with a liquid sauce flavored with almond.

An unusual peach pie is made thus: line a tin with good pastry, and set pared and pitted halves of ripe, soft peaches close together on it, with the hollow side uppermost. Sprinkle thickly with sugar, and cover well with thick, sour cream. Bake in a slow oven, and serve either warm or cold. This has a fine flavor, though the recipe may sound peculiar.

Peach foam is excellent when peaches are scarce and eggs are plenty. Put ripe peaches through a sieve till you have two cupfuls. Put in a bowl with four egg-whites, and whip slowly and steadily till the whole is a mass of foam. It will take from ten to twenty minutes, and must be served at once in tall glasses. Sugar to taste should be added while beating.

Peach sponge is a delicious dessert for a warm Sunday, as it may be prepared the day before it is to be eaten. Pare, and remove stones from one pound of nice peaches. Boil half a pound of sugar with a cupful of water for a minute, add the peaches, and cook two minutes. Take off the fire, press through a sieve, and add the juice of one lemon. Have half a box of gelatin soaked in cold water, stir it into the peach mixture, and then fold in the well-beaten whites of three eggs. Pour into a mold, and put at once into a cool place, preferably in the ice-box. Serve with plain or whipped cream, or with a soft custard.

For peach puffs make a rich biscuit-dough soft enough to drop from a spoon, put half a pared and pitted peach in each custard-cup, and drop in a spoonful of the dough, so the cups are a little more than

half full. Steam for half an hour, and serve with cream or hard sauce.

For peach dumplings make the biscuit-dough stiff enough to roll out, and put a whole peach in each dumpling. Pare the peaches, but leave the stones in them. Bake or steam the dumplings for an hour, and serve with a liquid sauce.

By slicing the peaches and filling a baking-dish half full, then covering with a rolled-out crust and baking for about an hour we achieve a peach cobbler. Of course the peaches must be well sweet-

ened and the cobbler eaten with cream. Again, roll out the same sort of biscuit-dough to the thickness of one inch, bake in jelly-cake tins, split, butter the halves, and pile with chopped and sugared peaches. Serve with cream or sauce.

For variety wash half a pound of rice through several waters, drain, put into rapidly boiling water, and boil for twenty minutes. Drain, and spread in a thin layer on cloths about eight inches square. Place a small, soft, pared peach in the center of the rice, fold the rice over, tie tight, throw the dumplings into boiling water, and boil rapidly for fifteen minutes. Serve warm with cream or sauce.

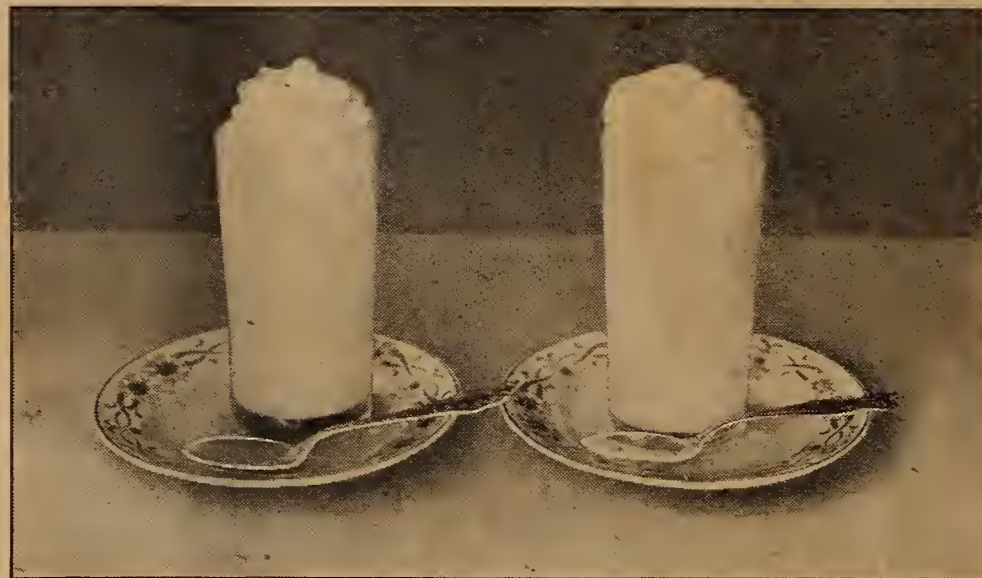
Another good combination with rice is rice compote, which can be made from cold rice reheated in a double boiler. Pare peaches, cut them in half, and remove the stones. Put the hot rice on the platter, cover with the peaches, dust with powdered sugar, and serve at once with cream.

A very delicious and pretty dessert is peach sponge-cake. Bake a sponge-cake in a round pan, and cut out the center, leaving the sides an inch thick. Pare and slice ripe peaches, sweeten with powdered sugar, and chill on ice. Beat a cupful of heavy cream till solid, sweeten slightly, and flavor with vanilla. Just before serving fill the cake about two-thirds full of the sliced peaches, and pile the whipped cream over the fruit, so as to hide it.

For a plain dessert, but one by no means to be despised, wipe large, ripe peaches carefully, put in a baking-dish with a little water, and bake in a slow oven. When done, but still warm, serve with a sweet sauce.

For a simple peach ice-cream, put enough ripe, soft peaches through a sieve to make one quart, sweeten with one pint of sugar, add one quart of thin cream, mix thoroughly, and freeze.

Those who prefer a water ice will like this one. Press half a dozen soft peaches through a sieve, and sweeten the pulp very sweet. Beat the whites of two eggs very stiff, add to the peaches with the juice of a lemon and a very little of the grated rind, put in a quart of water, be sure it is sweet enough, and freeze.



Peach foam

ened and the cobbler eaten with cream. Again, roll out the same sort of biscuit-



Peach pie

dough to the thickness of one inch, bake in jelly-cake tins, split, butter the halves,



Peach puffs

and pile with chopped and sugared peaches. Serve with cream or sauce.

it for two or three months,—then "rack" it off into bottles, avoiding sediment.

Tomato Wine

By Niel Havelock

AN EXCELLENT way to utilize the last tomatoes of a crop is to crush the clean, ripe ones in a fruit-press, and to add one pound of sugar to each quart of juice. Use no water. Put the sugar in before fermentation has begun. Let the wine stand in a wide-mouthed jar with a piece of gauze over the top. It is ready to use in a few days. It is a very good tonic, and is especially good for the stomach.

How One Farm Woman Earned Pin-Money

ONE of the chief reasons for the large amount of the present-day discontent upon the farm among the women is that they are very limited in ways to earn, or think they are. All day they labor from sunrise until long after dark, at monotonous work which brings them nothing at all beyond a few dollars for the selling of chickens, eggs or milk once or twice a week.

It is both pitiful and absurd that the women and girls in so many farm homes are deprived of ready money, when they might easily earn it by putting forth a little effort to help themselves.

One woman whom I knew solved the problem simply and cleverly. She lived in a community where her neighbors all prided themselves on their fine gardens. Each year she saw them buy seed from

towns, and she thought: "Why should I not save seeds from father's garden, and sell them? A great quantity is wasted which might be saved." She set to work. The seeds of muskmelons, watermelons, beans, peas, okra, cabbage, and in fact of everything that grew in that garden fell to her, and she carefully dried and put them in large glass jars until spring, when they were taken out, made into packages and labeled carefully. Her neighbors gladly bought from her, as they got fresher seed and a greater quantity for the same money than when buying from a town florist. In a short time she had a nice little business.

Later she added another department, that of growing young plants. She made several small hotbeds about the place in

sheltered spots and planted her seed in these so as to have them ready for the market as soon as frost was over. This proved to be very profitable indeed, as few people care to be troubled with hotbeds or cold-frames, when for a moderate sum the home-grown plants can be bought. She could hardly supply the demand for cabbage and tomato plants, besides collards, artichokes, cauliflowers and asparagus. Lettuce, onion-sets, peppers and even sweet-potato slips could all be bought from her, and she was well paid for the work.

For those who have ears to hear, the world is fairly shouting its wants and needs. The farm woman with health, imagination and energy has no cause to bemoan her lack of opportunity to earn pin-money. Wealth is under her feet.

IN FRONTENAC CAVE

[CONTINUED FROM PAGE 14]

to the pools and, I make bold to say, frank half enough for a horse.

I crept back and, as I crawled across the rope, having a care for the edge of the pit, I felt it taut under my knees, and on putting my hand on it could clearly feel that someone was climbing up it. My first thought was that the two men had got back, and I whipped out my knife to repeat my plan of rope-cutting. I had the blade fairly under it and ready to pull, when I reflected that I heard no voices and all was dark, and paused. Just then the man reached the top, breathing very hard from the work of climbing, and (you may smile if you please) I knew from this breathing that it was Dauphin. Indeed, I had been so much in the dark that I was becoming like a very bat, with no least need for eyes, and I knew both the Captain's and Dauphin's manner of breathing as well as their voices. When he had pulled himself up I spoke to him in a whisper.

"Is that you, Judson?" he said, much surprised. I answered "Yes," and then as fast as I could told him what had happened since I had come up, and how matters stood. He then told me that he had first gone up the Gopher-Hole, but, being scared by the throbbing sound, which now filled the whole cave beyond the Trap-Door, he had retreated back toward Rope Pit and had like to have been caught by the men, they having come up the pole. I got what was left of the bread, which I gave him, together with some meat and cheese.

"Come on, Judson," he said. "Down here is no place for a white man or an honest man to live, but it's safer'n this s. Though if we could get more such grub as that I'd say stay. We can get along without the Cap'n. The Cap'n is a good man in some ways but he's ever too free with 'Dauphin, hold your tongue' or 'Dauphin, you'll be hanged by the neck some day.' He ain't got no feelings for a mau what's been unlucky."

"I'll not listen to such talk about the Captain," I said. "You may go down if you choose, but I mean to stay and see if I can't do something for him. You'd best stay too, and maybe we can get out. You ought to know some place here where we can hide till they give up the hunt for us and then we can see what we can do."

"Oh, for the matter of what you say I do know an uncommon snug place to stop ourselves," answered Dauphin.

"Come, show me that place," I said. We went only a little ways, and then he pointed to a hole not much bigger than a barrel-head in the ceiling; "up there is a place which'll make you say you're in the Robin's Nest again, it is so like it, barring the hole in the bottom."

It was beyond our reach, but he stooped over and I stood on his back; then as he slowly straightened up I got

hold of the edge and drew myself up, with his pushing on my feet. Then he tossed up the candle and the last of the bread, and I lay on my face and, catching my toes in a crack, reached down and hauled him up by the arms, though the lift went close to pulling me in two. The place, as he had said, was very like the Robin's Nest, and being, in a way, hung up, I called it the Swallow's Nest.

"If Ike Liverpool shoves his head up that there hole he'll need liniment for it," chuckled Dauphin. Then he broke off a stalagmite shaped like a teacup, which must have weighed five pounds, and, tearing a sleeve from his coat, he tied it in one end of the sleeve with leather strings from his boot tops, winding it all tightly, and making a most horrible weapon; and he was that cheerful about it, chuckling to himself and talking of Liverpool's head, that it made me shudder to watch him.

But no head was thrust up the hole, though some of the men went through the room below several times. From a few words we caught I concluded that they had given up the hunt for us.

It must have gone near to being two days that we stayed at the Swallow's Nest; then our victuals being gone and our candles down to one small bit, something had to be done; I decided that we had best scout about a little and see what it should be; so we started. We soon came up near the Fort, creeping like cats. Over a rock at the end of a small hole we got a view of it down a larger tunnel. Thus I may describe it in two dozen words: Large room, nearly round, maybe one hundred feet across, floor mostly level and sandy. Bright fire in middle, with smoke going straight up, as if it were under a dome, as Dauphin (indeed) said it was. The outlaws were sitting about the fire drinking and smoking, Liverpool still with his arm in a sling. My heart gave a glad leap as I saw the Captain sitting a little to one side.

The liquor they were drinking was in bottles, which they passed about freely enough. We watched them for some time. Dauphin growling every time he saw them drink. "See there," he would whisper to me, "see them smoking and drinking as mighty fine as lords. And here honest men like me and you, Judson, must live with bats and have nothing but cold cave-water with chills and fever and rheumatiz in every drop of it." I had hard work to keep him still, and was on the point of going back to the Swallow's Nest, when one of the men rolled up in his blanket by the fire as if to sleep for the night. Soon the others began to do likewise, being, I think, two-thirds drunk, and I thought there would never be a better time to do what I had planned. By and by they were all in their blankets except Liverpool and one other. At this Liverpool got up and snapped a pair of handcuffs on the Cap-

tain's wrists, who then himself lay down with a blanket, while Liverpool went back and did the same.

But I was a good deal disheartened to see that the other man intended to stay on guard. He sat down on a rock, a candle burning beside him and with his revolver in his lap. But soon he began to drink out of a big flat bottle which he took from his pocket, and I had hopes. And my hopes used me well, too, because after some time he rolled over on the bare ground and went as sound to sleep as the others, leaving the fire burning.

"Now is our time," I whispered to Dauphin. "I will creep up to the Captain and waken him. You go to the guard and get his candle. Then you can show us the way to the opening, and in two hours we can be out."

"I'll get his barker, too, Judson—leave me alone for that. We might need it, and Gil Dauphin is the feller that knows how to use it."

He dropped his sleeve and stalagmite and we crept down among the men without making a sound. I got to the Captain and touched him on the shoulder. He sat up instantly, cool as was ever his way. He held up his shackled hands, but I pointed toward the tunnel which led out of the cave, and he nodded his head. I looked at Dauphin. He had got the candle and pistol, and had them in his left hand. Then he reached over, and my heart stood still as I saw him tugging at the bottle in the sleeping guard's pocket. I motioned him to come on, but he paid no attention to me. It seemed an age that he worked at that bottle to get it out, as the man lay half on it. I thought I should go wild to see him taking the chance he was and wasting our precious time. At last he got it out, and the Captain and I took a step toward the tunnel. But instead of coming he pulled the cork with his teeth and began drinking out of the bottle. Just then Liverpool turned over, opened his eyes and saw him standing there with the bottle to his lips. Liverpool seized his pistol and bounded to his feet. Dauphin's bottle crashed on the rocks and he took the guard's pistol in his right hand. For one second the two men glared at each other across the fire, then there was a report which stunned my ears, for they had both fired at once; and they both fell as near together as they had fired. The Captain dropped back on the ground, while I ran away toward the pit where the rope was. Some of the men came behind with a light. The rope was coiled on the briuk. I pushed it over, but it was unfastened from the point of rock and the end snapped in my face as it all went down. The men were too close for me to spring on the ledge. There was nothing to do but to follow the rope, hoping for as good luck as the two others had had at this pit; so down I went.

[CONCLUDED IN THE NEXT ISSUE]

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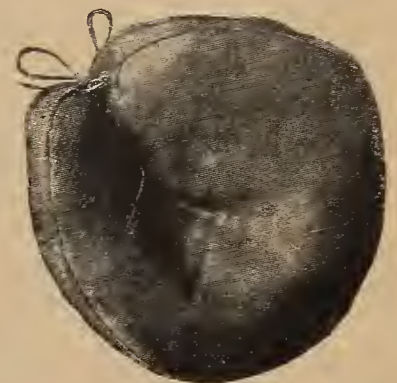
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Common-Sense Meals on Thrashing-Day—By Helen Waugh

THE question of what to serve thrashers is one that all farmers' wives have to settle. In some sections the women have settled the question by refusing to cook for the thrashers at all. They argue that thrashers are all paid, that the exchange of work at thrashing-time is a business matter, not a social affair at all, consequently they will neither weary themselves, nor tax their purses by serving meals. This is indeed a revolution, perhaps too radical a one, but, considering the scarcity of help, the high cost of meat and groceries, I think we shall all admit that some radical change is imperative.

Last year our men had a three-days' thrashing siege at one place. They still remember those very elegant "eats." If anything were omitted from that bill of fare in the line of meats, vegetables, breads, pastries, preserves or jellies it was only because the tables would hold no more. Everybody present enjoyed those meals, I know; but there is another side to the question that overbalances mere enjoyment. First, such elaborate repasts tax a woman's strength too greatly. Second, expensive meals make heavy inroads into the profits from the crop. When a man comes to help work he is a workman, not a guest, even though he be your most honored friend.

For years we have planned to have wholesome, substantial meals that will not leave the cooks worn to a "frazzle" when the machine has gone. We usually serve a beef roast with noodles or dumplings and plenty of gravy. This usually tastes better than chicken, for nearly everyone else in the neighborhood prepares chicken instead. Besides, there is no comparison in work between prepar-

ing chickens and putting a roast into the oven. We usually serve with this plain boiled potatoes, because they are good when served with gravy. We never serve more than one vegetable, and that usually is tomatoes, because the acid in them seems to cut the dust in the thrashers' throats. Cole-slaw, most pickles, canned cherries, tart jellies, all seem to have nearly the same effect in clearing the throat of dust.

The base of the meal I have given. If we serve more than one meal, we try to vary our menu. All roasts, whether pork or beef or mutton, are easy to prepare, and are all generally well-liked meats. Stewed beets or cabbage or cauliflower are well-liked vegetables. Bread is more easily prepared than buns or hot biscuits. Cake is easily prepared for supper. Men like a simple cake that is fresh from the oven better than a more elaborate concoction. We never try to serve more than one kind of pie. Of that we serve each man a generous slice. Both cake and pie are never served at the same meal. Both are "frills" and require too much work in preparation, when their food value is so low.

Plenty of Wholesome Food

Perhaps our plan may seem too conservative to many, but I know that to us thrashings have never been the burdensome affairs that they have been to many of our neighbors. We have always tried to serve plenty of good, wholesome food. We have tried to vary our meals. We have served hot things hot and cold things cold. We have been tired when the ordeal was over, but we have not been worn to the bone.

Economic conditions, now, are such that women who wish to live in the coun-

try must learn that it is neither good form nor good sense to serve the old-fashioned everybody-come-in-and-eat thrashing dinners. Serve a good, wholesome, sensible meal, and take the extra time to rest for the next meal instead of preparing frilly party-things, then things will adjust themselves, and our own farmer-men will not need to eat a cold lunch from a tin dinner-pail on thrashing-day.

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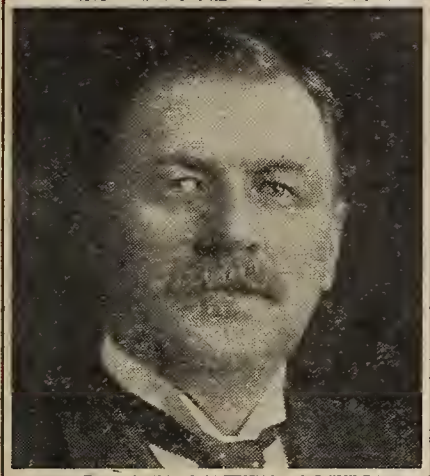
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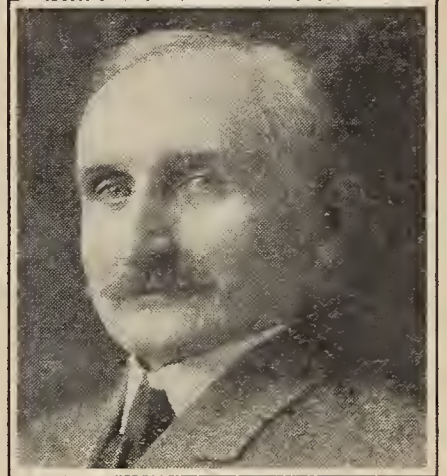
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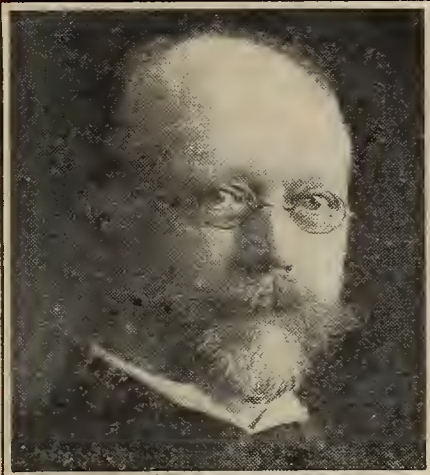
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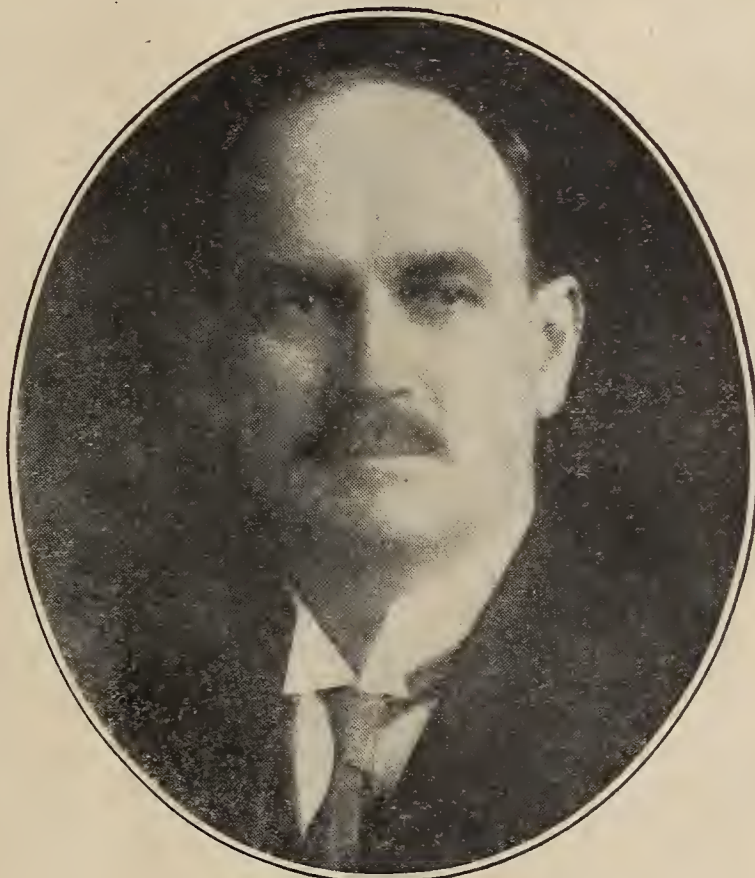
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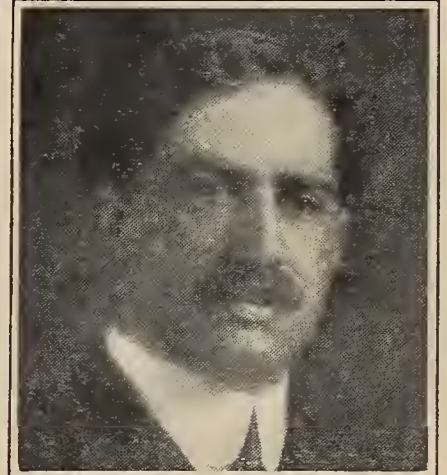
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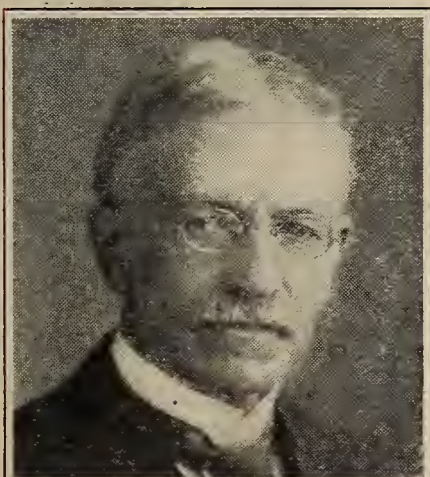
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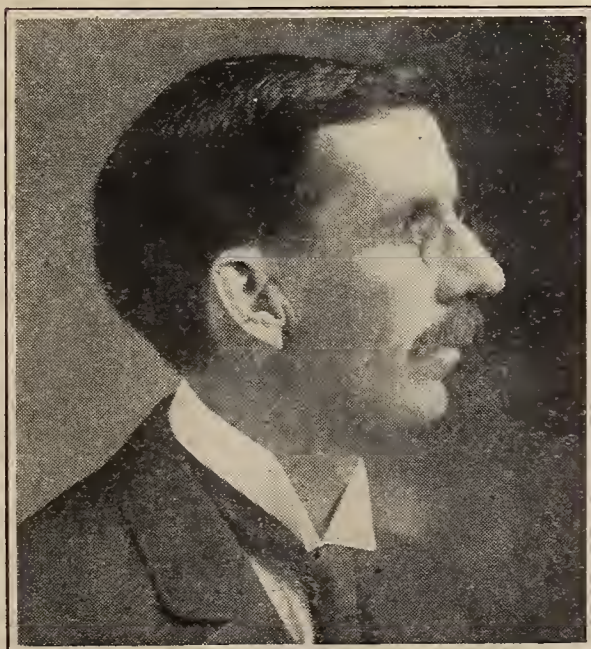
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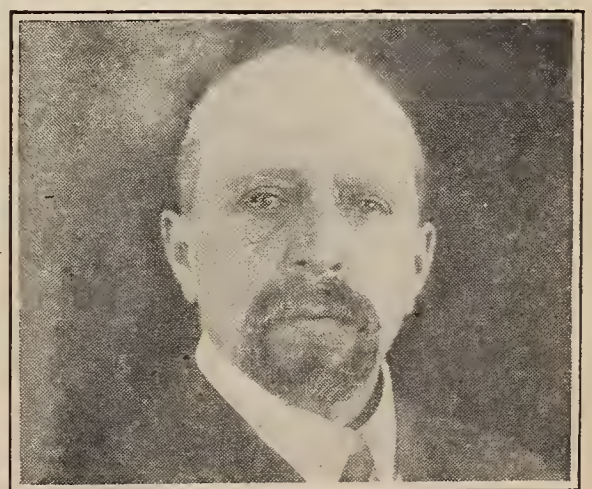
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THE POINTS OF INTEREST IN THE COMING NUMBER

Special Articles

Page 4 of the next issue will bear a story about a man who started to flimflam a girl out of the farm she owned. The story bristles with interest from start to finish. Page 5 will completely outline some modern methods of storing corn and small grain.

Farm Notes

Perhaps you have had trouble in securing the right title to your land. Perhaps some agreement which you thought was closed proved otherwise. There are important angles of the law on this very point, and a real lawyer, a man who knows the subject, will give the facts—not in the long phrases of law but in language we can understand.

Crops and Soils

Fertilizers are always demanded on the most successful farms. Of course in some of our western plains fertilizers do not seem to be needed yet, but wherever land has been cropped steadily for years the demand for plant food has become strong. Each issue of FARM AND FIRESIDE has something about this important practical question. The next issue will have something on potash. Look for it.

Garden and Orchard

Every farm should have a small grove upon it. There are many reasons. FARM AND FIRESIDE has discussed them time and again. In the next issue a reader who has been successful with one small grove will tell how he did it.

Live Stock and Dairy

If you have a horse that does not respond to your treatment as you think he should, there is probably some item you have overlooked. A balky horse is a common difficulty. David Buffum will tell how he manages such horses.

The Market Outlook

Much of the profit on the farm nowadays depends upon the system of selling. Practically every farmer has a different system of selling and of keeping his accounts, but it is never tiresome to listen to a story of success. The Market page will have a story of a man who succeeded.

Lean Years

Here are some young people who can not see behind or beyond the dilapidation of the farm they have inherited. Instead of seeing their opportunity they fly from it—to the city. Just as we long in July for snowdrifts and in January for roses, so on the pavements they begin to long for the plowed fields. Then something almost miraculous happens.

Winter Bulbs

Heavy skies and short days are approaching. Let us learn how to make our windows bloom all winter with the flowers of spring.

Vegetarian Suppers

It is an ill wind that blows nobody good. The high cost of living is teaching us about new foods and new combinations of foods. The higher meat soars the fewer rheumatic invalids there will be. Mrs. Burchard invites us to some delicious vegetable suppers. Let us go and eat them.

Pin-Money Under Your Noses

Why be poor? FARM AND FIRESIDE is interfering with that old hobby and urging you to earn a little money, whether you like money or not.

Housewife's Letter Box

The Housewife's Letter Box answers and asks many interesting questions. The Housewife's Club is full of new energy and serviceableness and will be more alert and helpful than ever during the coming year.

WITH THE EDITOR

We All Need Sheep

I am not one of those who fear the effects of free wool. In view of the fact that myself and family wear clothes, I am in favor of it. And to show that I believe in sheep, free wool or no free wool, I drove up the valley a few miles the other day to buy a small flock. Almost every farm needs sheep, no matter what the price of wool may be. My farm is in especial need of them. For years I have been chopping and cutting and hacking at the sprouts and suckers in our newly cleared fields until I have struck. This fall we are seeding down forty-six acres of this in rye and orchard-grass, and shall sow clover in it in the spring as the frost comes out. Then we shall stock it with sheep and let them wrestle with the sprouts. I'm going to leave the killing off of the locusts, redbuds, dogwoods, greenbrier, sassafras and the rest to the Woolly Hired Man—the hired man who will board himself on the sprouts he cuts, and turn them into wool and mutton.

So I drove up the valley to buy fifty sheep. And as I went along, at every house was one or more dogs. I spoke to one or two men about the dog problem. "I tell you," said one, whose attitude was about the same as that of the others, "the worthless curs folks keep around are what makes it risky to keep sheep. The dog tax"—this is in West Virginia—"is fifty cents a year, and I pay mine. I wouldn't pay it on my dog if he wasn't such a good dog. He wouldn't touch a sheep, and he's mighty good to the children. Why, if the children start off anywhere, that dog marches right along with 'em, and I'd like to see the varmint that could harm 'em. And he's right smart of company for us all."

Each Man Trusts His Own Dog

This "good dog" may have his teeth full of wool at this very moment for all I know—or his owner either. The dog problem lies right in that disposition of every man to believe in his own dog. It lies in the fact that a dog is kind to children, and guards them, and licks their hands, and is a friend to them. It lies in the centuries of companionship between the man and the dog. A dog is a lower sort of child of the family. Every man, woman and child believes in his own dog, no matter how sneaking, mangy and worthless he is, just as every parent believes in his own child. I don't blame people for this. I have felt my own eyes full of tears myself at the tragic death of a dog which had owned me during his life. And he was just a plain worthless dog of doubtful pedigree and no virtue except that of loving and serving me.

The man of whom I bought the sheep told me that he has been, for the past year or so, troubled a great deal less by the depredations of dogs than formerly. He thinks that the fifty-cent dog tax is doing some good. But that doesn't correspond with the experiences of others. The dog question is a far more serious thing for the farm flock of sheep than the tariff question. The sheep is needed on every farm. He is needed to use up things which other animals will not consume. He fills in between other animals like peas in an apple-barrel. A certain number of sheep can be kept without decreasing the supply of feed for the other stock. And he supplies meat as well as clothes for the world. I therefore impeach the dog of high crimes and misdemeanors, in that he kills thousands of sheep directly, and indirectly he kills millions by so wearing out the patience of sheep-owners that their flocks are sacrificed, and by keeping thousands of others from growing sheep. I impeach the dog, therefore, of causing scarcity of meat in a hungry world, and scarcity of clothes in a shivering one. I impeach him of high treason in causing the waste of all those natural resources which would be utilized if it were not for dogs and the fear of dogs.

And yet, when he comes wagging his tail and fawning on me, my compassion is his—for I love him—darn him!

Where the Lawmakers Failed

Lawmakers have made rather bad work of this matter of getting rid of dogs. They levy taxes upon them—and the taxes are either enforced or not enforced. If they are low enough to be collectible they are paid, and the number of dogs is just as great as ever. If they are too high the tax-collector lets them go free—killing sheep as they escape.

The trouble with the lawmakers is that they haven't studied the human nature of the problem. Every man and every man's family love the dog they have now. They care nothing about the dog they are going to have when he dies. It's not the principle of dog-ownership that is dear to us; it's good old Fido, who waked us up the night old Flora got cast in her stall, and who frightens tramps away from the gate, besides going to school with little Willie when he is afraid to go alone.

So here is my law for the extirpation of the dog plague. I would not increase the present tax at all, unless it is lower than in most States with the laws of which I am familiar. I would let the Pontoes, Fidoes, Neroes, Gyps, Sheps and Rovers all live out their days. But I would have all dogs strictly listed by the public officers, with such descriptions as would enable the fact to be proven when a new dog should be incurred by the family.

Why Do You Own a Dog?

And I would make it expensive and burdensome for anyone to acquire or keep a new dog. I would not make any exception—I would make the tax so high and the regulations so strict that nobody would ever get a new dog except for a very good reason. I think I should make it necessary for every man acquiring a new dog to get a license and pay for it. I don't claim to have this law worked out in detail, but anyone able to draw a bill can do it with the idea in his possession. The idea is—respect the love and affection which people have for their dogs, and allow these friends of the family to grow old and die in peace; but shut off the everlasting supply of new dogs which take their places. Such a law would work. It could be passed without opposition. It is a move in the direction all true reforms are to take—the direction of flowing around obstacles instead of sweeping them away. I am quite pleased with it. Won't someone tell me what's the matter with the idea?

Robert L. Smith

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BI-WEEKLY

Mid-West Corn

CORN went into the ground late this year. Over much of the corn belt it was planted in June. Then came hot weather and timely rains, and the crop grew at a rate which was simply wonderful. By July 4th it had made up for lost time, and a big crop was promised. But the heat kept up while the rains ceased, and by August 5th, in much of the rich corn country in Kansas and surrounding States, the crop was burned up. And yet our city friends cannot understand why we who depend so much on weather are in the habit of "looking for calamity!" We look for it because it is always hovering over us—and frequently swoops down.

A Ton a Day!

IF a man had to pitch a ton of hay every day he would think it quite a chore. And if he had to move the hay in dribbles and small bunches while doing his other work he would be tired out and annoyed by the task until he would begin to look for some way of avoiding it. If he found that he could avoid it by some article purchasable for two or three hundred dollars, he would buy the machine instantly, knowing that it would pay for itself every year.

The president of the Mississippi Normal College is reported to have said recently that the average woman doing her own work in a house without a modern water-supply lifts a ton of water every day. This is the way he figures it out: A bucket of water weighs twenty pounds. It is lifted from the well, carried to the kitchen, poured out there for various uses and emptied out of doors. He counts the number of times it is lifted on the average at six times. Three meals a day call for ten bucketfuls, which lifted six times amount to 1,200 pounds of lifting. Add the water for washing, mopping, bathing and drinking, and the ton is easily accounted for.

This assumed a well supply at the door. But it is often rods away from the door. It is often down a hill to a well or spring. In such cases the water-supply rests much more heavily on the woman than would the ton of hay on the man.

The water-supply in the house is the best first step toward improved conditions for the house which does not possess it. Many good systems are available and at reasonable prices—say from two hundred to three hundred dollars for an ordinary isolated farmhouse.

The outdoor water-supply is the chief of all woman-killers and home-destroyers.

Sore mouth in pigs is apt to be caused by bad or ill-shaped teeth. Whatever the cause, the diseased mouth should be treated by nipping off the sharp ends of teeth which cause sores, and the diseased tissues should be removed and the sores washed with a permanganate-of-potash solution prepared by a druggist. Then sift powdered borax over the cleansed sores.

Should Child Teach Children?

STATE Superintendent Hannifan of West Virginia discusses the question as to whether the rural schools are better or worse than they were twenty years ago. The fact that the thing can be discussed at all is a confession. Not that they are worse than then, but that they are not what they should be.

Mr. Hannifan calls attention to the fact that the teachers are younger than then, and that more of them are women—or rather girls. This is true all over the Nation, and is in itself an admission that the schools cannot be better than then. Teaching is work for men and women, not for boys and girls. Book-learning, strict examinations, supervision—not all of these can make good teachers of a lot of immature kids.

The remedy is not to find fault with the children who are allowed to do what we call teaching, but to make the job of the country teacher a job for men and women—a job of profit to the community, and of such importance that real men and women will devote themselves to it for life. Impracticable? Well, there is a country school in Wisconsin where the teacher has organized the farmers of his district into a co-operative cheese-factory. He runs the cheese-factory as well as the school. The children are brought in with the morning's milk, and taken home with the evening's. The factory is closely related to the work of the school, and some of its office work is said to be done by the pupils as a part of their school work. No doubt the cheese-factory is more or less of an education to the children of dairymen, and that it can be used for both education and profit.

And this teacher has saved the people of the district in the first year of its operation \$300 more than his salary. This has been through the better prices they have been able to get for their milk. Here's a man's job for a country teacher. It is only a shadow cast before by the coming new kind of rural school. In the full development of that school the center of the district's life will be in it, for both parents and teachers. It will be doing the most profitable work of the community in dollars and cents, besides educating the children. And it will be in the hands of well-paid, well-educated men and women—the real leaders of their communities—just where it ought to be.

Money and Crops

WHEN Secretary McAdoo notified the banks of the country that they would have to pay the Government two per cent. on government deposits many bankers declared the demand unjust and said that it made government deposits unprofitable to them. But when, about August 1st, the secretary offered fifty millions of this money at the two per cent. rate, for use in moving the crops, the western and southern banks called for two fifths of the entire sum in a few days. Most of this money went into the farming States and sifted through the banks into—and out of—the pockets of those who had crops to sell.

Some bankers now express the fear that this money will "open a door for farmers to store their harvests for higher prices instead of actually carrying the crops to market." Are we to understand from this that these gentlemen regard the hauling of harvests from "the machine" to the grain-buyer as an ideal practice? It certainly is ideal for the speculator; but it keeps the farmer's notes overdue.

Fourteen for One

IT COSTS fifty cents a head to get rid of the Southern cattle-tick. That is not a guess, but the actual results in the experience of the United States Government in fighting this pest, according to a report on certain counties in Mississippi. The extirpation of these ticks—the "bug" that causes Texas fever—has added seven dollars each to the value of the cattle of these counties—on an average. Here's an investment which brings back a return of fourteen dollars for every dollar spent. This is about the most profitable business done exclusively "on tick" of which we have any record.

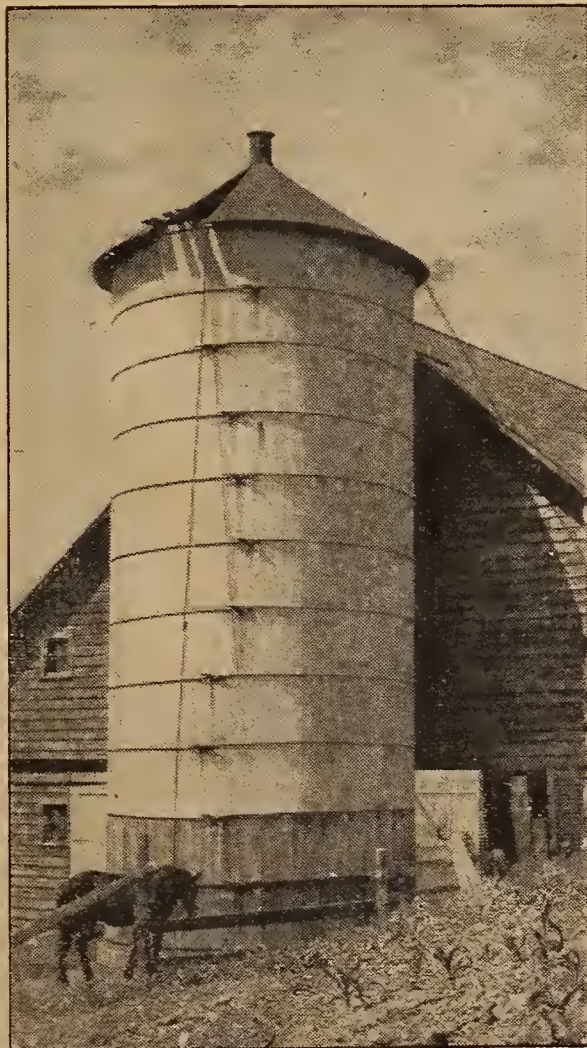
There is just one thing which keeps the South from leading the country in cattle production, and that one thing is the fever-tick. The Southern people are progressive and up-to-date. And progressive and up-to-date people are not going to allow their cattle to be seven dollars a head cheaper than they ought to be when they can be given full value by spending fifty cents a head. The meat-supply of the future will come from our own Dixie, rather than from Argentina, Australia or Mexico.

Tests recently completed by A. Grittner on the subject of making concrete water-proof have resulted in the announcement that by an application of an eight-per-cent. solution of potash soap, instead of water, in mixing, the concrete can be rendered sufficiently water-proof to satisfy all requirements. This strength of solution means eight pounds of potash to one hundred pounds of water.

Thrashing the Beans

THE soy-bean promises to become a great grain crop. The thrashing of the beans is a problem not yet worked out in a settled way. There are bean-hullers which ought to do the work well; but who will write us their actual experiences with them? A Williams County, Ohio, man attached the belt of a gasoline-engine to the cylinder of a manure-spreader and thrashed soy-beans successfully with the combination. Has anyone else tried this plan? A Colorado grower of cow-peas who is an old thrasher says that if the concaves of any ordinary thrashing-machine are taken and their places filled with pieces of two-by-four bolted in solidly it will thrash cow-peas without cracking any. The machine should be run slowly if the peas are dry, and somewhat faster if they are damp. Do any of our readers know whether or not this method will work with soy-beans? It is used sometimes with ordinary beans. Please lift your hands and recite on the day's lesson—thrashing soy-beans!

I Guard a Nation's Wealth



Poverty, worn-out soil and mortgages are not found where I work.

I have saved enough money, for those who have employed me, to build two Panama Canals.

I solve the summer-pasturage problems.

I have made automobiles popular on the farm.

I know no master! I cannot be monopolized or organized into a trust. I belong to the people. They are my trust!

Chesla Sherlock.



A Big Work the Farmer Has to Do

By Wilhelmine J. Fulton

UNDoubtedly much could be accomplished toward solving the "producer to consumer" problem by co-operation, a working together; but it seems to me that the first and greatest necessity at present is for the farmer to come to a more complete realization of the fact that he himself is the merchant supplying the household needs, and that his commodities must be arranged and adapted to those needs.

It may seem like an absurdity to imply that the farmer lacks such realization; but just give the matter a few minutes' thought. It seems to be rather that the farmer considers himself, in the vast majority of cases, as the agent whose business it is to grow the vegetables and fruit, to the best of his ability of course, and ship them, more or less as Mother Nature brought them forth, to those whom he regards as the real sellers, the commission men or wholesalers.

All this causes waste and, worse still, misunderstanding. It is the farmer's business, and to his best interest, to look upon himself as the real merchant, the producer of certain goods, with all the near-by population as his customers, and to look upon the others who handle his goods, commission man, wholesaler, jobber and retailer, as merely the farmer's agents; and the farmer should study the needs of his customers and make every reasonable effort to supply them economically, without unnecessary handling and without waste. Then he would be entitled to, could demand and would undoubtedly receive more nearly his just portion of the value of his produce, instead of, as at present, only about one third.

The Jobber Always Protects Himself

There are a number of ways in which the farmer might help to improve existing conditions. The first point is the great benefit that would accrue to the farmer from more uniform packing. I mean uniformity of both size and quality. For example, take a barrel of apples. The commission men complain that in the majority of cases the apples in any one barrel will run about sixty per cent. the size that first appears on opening the barrel, and the remaining forty per cent. will be of inferior grade and size. Naturally, the purchaser, a wholesaler or jobber, knowing from experience that such is the case, takes care that the price which he pays is low enough to more than cover this inequality, or, in other words, to be on the safe side, assumes that the contents are only forty or fifty per cent. as they appear on surface inspection. In a comparatively few cases only, where the farmer has established a reputation for absolutely uniform packing, is this reduction not made.

Another thing, for certain lines of the business, the wholesaler or jobber is compelled to find two different markets for these two grades, as it is often impossible to sell the inferior grade at a fairly high-class retail

store, and if he is not absolutely sure of an outlet he reduces the price that he will pay still further to cover this uncertainty.

It is the same with lettuce, with potatoes, with practically all farm produce. Any particular size and grade of lettuce will have a certain retail value at a given season; and if the lettuce reaches the commission man or wholesaler so graded that he can compute the exact retail value of a case, it is a simple matter to demand and receive for the farmer that amount less the legitimate expense involved in the various steps through which it passes from commission man to consumer. In fact, that is precisely what is done in the somewhat rare cases where the farmer does so grade and pack his goods.

The Quart Measure, Wholesale and Retail

I have been so fortunate as to meet some of these progressive farmers, and not one of them has expressed the slightest dissatisfaction with the amount returned to him for his produce, sold through the ordinary channels of the commission man.

In the matter of potatoes, in the early fall, when the greatest inequalities are possible, I have seen sack after sack opened, containing potatoes varying in size from three inches to one inch in diameter. All had to be sorted out and graded before they were fit for ordinary retail sale, and a great deal could not be sold at all. Do you wonder that the wholesaler or jobber paid as little as possible for these sacks, knowing the contents from experience?

Then there is a second condition of the retail handling and sale which the farmer would do well to consider, in order to establish a closer relationship between himself and the ultimate consumer. The more clear the resemblance between the terms and conditions at the shipping point and those at the final selling point, the less the opportunity to withhold from the farmer his just portion of what his produce brings. A barrel of apples will serve for an illustration of another point of divergence between wholesale and retail. A barrel is considered, in wholesale terms, to contain ninety-six quarts. But when the apples are measured out into a quart measure they must be piled high in accordance with the demands of the retail pur-

Begin Right! Mrs. Fulton understands the retail handling of farm produce. She has been dealing with the middleman and the farmer from her market under Queensboro Bridge, New York City, for over a year. Her market was started after an investigation of food prices had been made by a committee of which she was chairman. She believes that consumers' prices may be made lower and producers' prices higher if we get our products started to the market in the right way. The Editor.

chaser, and this, supposing all other conditions to be perfect, results in only about sixty quarts being measured out of a barrel. One result of this is that the farmer hears that the apples for which he was paid two dollars a barrel have been sold at, say, ten cents a quart, and he makes a mental computation of ninety-six quarts at ten cents a quart, and feels that he has not received his just return. And another and, in my opinion, more harmful result is that the whole matter lies in a confused and chaotic state, with producers thinking and talking of certain conditions, and consumers knowing only certain different conditions, and both attributing unfair methods and even dishonesty to the middleman.

The middleman meanwhile, because of this confusion, is free to take an unfair advantage of the situation, and indeed very often does, just because neither of the directly interested parties knows exactly what the other is talking about.

The remedy for this is very simple, but can only be brought about by uniform action all along the line. But the farmer can at least start the ball rolling. All farm produce should be sold by weight, both at wholesale and retail, and if the farmer will always designate so many pounds of any given grade of any given produce, and sell it and consider it always by weight, the wholesaler and retailer will very soon acquire the same habit.

But just think of the simplification of the whole matter if all produce were considered in terms of weight, from the farm to the household, from producer to consumer.

Both Sides Should Make a Profit

The third point I would like to bring out is the necessity, on the part of the farmer, of being able to place a retail value on his goods. It ought to be possible for a consumer to obtain his goods direct if he so desires, and it ought to be possible for the farmer to supply a limited number of customers direct, or certainly in a few lines at least, notably eggs. But the farmer should bear in mind that if a consumer applies to him for a shipment of eggs direct he does so because he expects either better eggs or a lower price than he has been getting. After all, the most convenient way for the city dweller to buy eggs is in the city, and if he applies to the farmer it is with the hope of some improvement, either in quality or price. The consumer reads in the newspaper that the farmer gets only so much for his eggs. The farmer reads that the city people are paying some exorbitant price for eggs. Then, if consumer and farmer try to make a deal on the basis of these two widely separated prices, there is bound to be disappointment on both sides, both having failed to take into account the candling, grading, shipping, retail packing, waste, etc., that take place after the eggs leave the farm. [CONCLUDED ON PAGE 13]

What One Attempt to Lower Prices Proved

By H. N. Bartlett

AN ATTEMPT was made in the spring of 1912 by the Bessemer & Lake Erie Railroad to reduce the cost of living of the vast army of working men and their families living in East Pittsburgh and vicinity by inaugurating a special train service that would bring fresh milk and vegetables direct from the farm each day, except Sunday, to the center of a great food-consuming community.

Although the attempt was not entirely satisfactory, from the railroad company's point of view, to a large proportion of the residents in and about East Pittsburgh, it was hailed as a blessed deliverance from the high prices and questionable products with which they had been familiar. There are good reasons for believing that the scheme, in a general way, was a good one and is worthy of consideration in view of the great need of something of the kind to give the farmer a better market and the consumer better foods and at a lower first cost than is now possible under the present system to obtain.

A representative of the Bessemer Road, who had been for years a student of economics as related to production and consumption of foodstuffs, and into whose hands the responsibility of organization and operation was placed, visited the farming sections along the line of the railroad and organized the farmers into what is known as the "Conneaut Valley Exchange." Eighteen of these exchanges were formed with an average membership of about one hundred. Each exchange had its regularly elected officials and was represented by one member on the executive board which standardized all produce to be shipped and set prices based on market conditions. Every member of the exchange had the privilege of being a shipper, providing he adhered to the rules and regulations formulated for his guidance by the executive board. As an example, a dozen eggs had to be of a certain weight, or be classed as seconds, which meant a lower price per dozen. Every shipment was marked with the owner's name in order that anything below the required standard could be traced back to the shipper and he forced to refund or make good under penalty of expulsion from the exchange.

A refrigerator car was attached to an afternoon passenger-train en route to East Pittsburgh and loaded while passengers were getting off and on at the regular stopping stations. An invoice accompanied each ship-

ment for the convenience of the agent who took charge of the car at its destination and sold the produce for the farmers the following morning. After deducting all freight charges and his commission for selling, the agent sent a statement and check to each shipper.

Unfortunately the facilities for handling and housing the produce on its arrival at East Pittsburgh had not been properly provided, and as the railroad people were not disposed to assist in providing better accommodations, the agent was obliged to retail everything direct from the car.

Very little green-stuff was grown during April and May, the two months during which the experiment was tried, but milk, butter, potatoes, apples, eggs and what green stuff was available were shipped each day in large quantities. The first day's sales amounted to \$75 and quickly increased, as soon as the farmers came to appreciate the privilege, to \$150 and \$200 each day. Eggs and butter were sold from five to ten cents below the market price, and the quality was superior. Milk, that had to indicate a high percentage of butter-fat, was sold for five cents per quart, while the regular retail price was eight cents.

The farmer was obtaining far more for his produce than he could obtain at his local markets, and the consumer was paying a good deal less for what was better in quality and received in better condition than through the questionable methods of the average grocer.

Two Prosperous Months and Then Defeat

The service was discontinued after a two-months' trial by order of the general freight agent without any satisfactory reason being given. The public was highly incensed, and the president of the road was burdened with petitions and letters from clubs and individuals, all begging him to reconsider his order to discontinue the service or give an adequate reason for his action. No one received the courtesy of a reply.

The taking off of the produce-car by the railroad company entailed considerable hardship to many of the farmers, as they were urged to plant more than usual for a market which they were led to believe had been provided. The secretary of the exchange said

recently: "Tomatoes which were planted because I advised the farmers to plant them for the East Pittsburgh market are now rotting by the bushel; sweet corn that should be sold at a fair price in your market is being fed to the hogs. Fruit is rotting on the trees because it does not pay to gather it."

There probably is no city whose markets are more largely under the control of speculators than Pittsburgh, due partially perhaps to this not being a farming district and being dependent upon railroads to transport practically all of its food-supplies. The iron industry has crowded out the farmer and market gardener to a very large extent, only a very few remaining who can convey the produce of their farms and gardens to the markets without assistance from the railroads.

In starting the market-car the Bessemer Road did not evidently fully comprehend the injury to the commission men that such a procedure would entail when the development of the idea had reached something like the proportions that the exchange had contemplated. The commission men and the retail grocers are more strongly organized than the producers, and with the advantage of both means and experience they have the upper hand of the situation at present, and, furthermore, everything goes to show that they will continue to have it until such time as the consumer realizes that it will be to his advantage to co-operate in some way with the producer and thereby eliminate many of the middlemen who are now living on the profits which should be divided between the producer and the consumer.

Individuals cannot send their produce to the markets in small quantities, as the carrier charges are prohibitive, and, furthermore, they have little or no confidence in the average produce merchant.

It is perhaps too much to expect railroads to enter into a proposition of furnishing transportation similar to that attempted by the Bessemer Road, especially when a very considerable part of their revenue comes from shipments consigned to the commission merchants and from whom a vigorous protest would be sure to come. If more than the usual service between producer and consumer is attempted, but it does seem as though the farmers through an efficient organization, along the lines of the one briefly described, might furnish farm produce to a similar organization of consumers and thus both parties share the benefits.

Real Co-operation at the Laundry

A Connecticut Fulling-Mill That Was Transformed Into a Golden Rule Laundry

By B. S. Johnson

IN THE town of Bethlehem, a Connecticut community of five hundred inhabitants, there is a splendid example of what co-operative methods can do to help the women. No premeditated effort or organization of any kind brought about this condition. But fifty years ago Deacon Theodore Bird, who operated one of the many small woolen mills scattered about New England at that time, discovered that his fulling-mill made an ideal place to do the family washing. The turbine-wheel furnished a cheap and unflinching power. An abundance of cold running water and big dye-kettles full of hot water were the essentials needed to convert the fulling-mill into a power laundry.

The advantages of the mill as a place for doing the big washings of the country households were soon recognized in the surrounding territory and even in the adjoining towns, farmers living six miles distant being numbered among the patrons of the mill. A few brought a lunch with them. In a short time the deacon had a considerable number of patrons who brought their dirty clothes to the mill on Mondays and Tuesdays, known as wash-days. The fulling-mill was used on the other days of the week for fulling the cloth manufactured at the factory. The fulling-machine was made by the deacon himself. It is simple in construction and substantial, being made of hardwood.

How the Washing-Machine Works

Two blocks of wood move back and forth in a water-tight box, rolling and pounding the cloth or family washing. The rear of the box is lower than the sides or other end, permitting the cold water to flow out in the rinsing process. The movement of the blocks of wood gradually forces the hot water and soap out also, but the box is not emptied of the hot water in the process until it is time for the turning on of the cold water. Heavy rag and ingrain carpets are washed in the mill without hot water, the carpets being placed in the mill, and the cold water allowed to run until it is clear and the dirt all pounded out. It was against the rules to stop the power to remove the clothes from the mill, but it has sometimes been necessary, as the larger washings would get badly tangled and could not be removed readily while the mill was in operation. To make the mill complete for a laundry it was necessary to install a wringer which could be propelled by power. The wringer, with tubs and pails, was all the equipment needed to make the fulling-mill into a laundry. Fiber pails were at first used, but the carelessness of the patrons in turning boiling water into them made it necessary to equip the laundry with heavy oak pails. For those who desired to soak their clothes and lessen the time in the mill, movable tubs were provided which could be rolled on a truck when full of water and a heavy washing.

Like most other small woolen mills, Bird's factory ceased its manufacturing operations years ago, and later the good deacon passed on to his rest; but the power laundry still continues and is substantial evidence of the labor that can be saved by the proper form of a co-operative laundry in a rural community.

Though the patrons may not have recognized it, Bird's mill is probably the first co-operative laundry in the United States. It was established strictly on the Golden Rule policy, which has assured its permanency and made it co-operative in the fullest sense of the word. The deacon soon discovered that it was necessary to have a printed set of rules for the patrons to follow, the substance of them being summed up in a phrase printed in large type at the bottom: "Try to Follow the Golden Rule." The excellent admonition has been followed, for since the deacon gave up his labors the wash-days at the mill have continued practically in charge of the patrons, the mill being used chiefly for laundry purposes. The machinery for the manufacturing of woollens was removed and sold by the deacon before his death. The water rights and mill practically became valueless and unsalable. The deacon willed that his residence be used as a home for returned missionaries.

The Patrons Maintain the Laundry

The mill could not be as easily disposed of. He equipped it with a new turbine shortly before his death and took evident satisfaction in seeing the laundry business flourish, although it was not a source of profit to him. It was conducted only to accommodate his townspeople. Since the death of the deacon, over ten years ago, the laundry has been maintained by the patrons. A neighbor, for the privilege of having a saw and planing-machine in the building operated by power from the turbine, attends to the necessary repairs and the keeping of fires for the heating of water. He has general oversight of the mill. The original cost of the equipment, including the water-wheel, was less than \$500. As nothing in the way of new equipment or new machinery has been purchased for over ten years, the chief expense of running the mill has been the providing of wood for heating the water. This expense has been paid from the income received from the patrons. A son of Deacon Bird now owns the property, but he resides in a city and is only at the mill for a short time each summer. One of the rules on Deacon Bird's printed list read

"replenish the fire, and keep the kettle full and covered." Every patron was expected to fill the urnace under the big copper dye-kettle with wood every time he washed and put as much water in the kettle as he took out—not a difficult task, as the kettle was filled from a pipe. The turning of a faucet was all the effort required to do that work. There were a few who abused the privileges granted them by the deacon, but the majority of his patrons followed his rules even when he was away from the mill for six months at a time. In the latter part of his life he spent the winters in the South, and the patrons had full charge of the mill. It became co-operative by force of circumstances.

The Husband Helps with the Work

Those living near the mill arrive early during the busy season in summer. The farmers during the summer season of the year have extra large washings due to the influx of city people and the work in the fields which makes the wash-day at home dreaded by the rural woman. Laundry work at the mill commences as early as four on Monday mornings. Usually the husband and wife come together, but in a few instances the husband comes alone. It requires but a little coaching on the part of the women to show the men how to do the family washing at Bird's Mill. The splashing of the water and wetting of the floor is accepted as one of the privileges accorded the patrons of the laundry. This is one of the reasons why the mill appeals strongly to the housewife, who has a natural dislike to the cleaning up after the washing at home.

The rates at the rural laundry are low. Twenty-five cents pays for the ordinary family washing. Ten cents extra is charged for a big washing or if someone takes more than an hour at the mill. The deacon at first furnished fuller's soft soap without extra cost, but the



The mill that has made "wash-day" a pleasure

fact that the patrons were too free with it made him change his rules. Since then each patron has furnished his own soap.

The social feature of the rural laundry has always helped materially in making the mill popular. Village gossip is just as free as the deacon's soap was before he nailed the barrel-lid on. "I heard it at the mill" has long been established in the parlance of the community.

Feminine nature is not kindly disposed to the presence of men in the wash-room, but the usual order of things is changed at a village laundry. Even country women who are known to have a reverential fear for the village parson are made to understand him better. Closer social relations are established by the informal wash-day meetings. Men assist the women by starting and stopping the power and attending to the clothes in the mill, turning off the hot or cold water, as occasion demands. The women wash out by hand a few choice pieces that are too delicate to stand the severe pounding of the mill. Tubs with hot and cold water—conveniences found in only a few country homes—are also used to get the dirt out of a wristband or some garment that is likely to "run." A few broken buttons or torn garments are not of much consideration when the labor saved is taken into account.

The work is done in the basement of the mill, where in summer it is always cool. There are times, in the busy season when the use of a team and the time of the farmer are given grudgingly, but that is only when he forgets that the mill saves the expense of a hired girl. Of more importance is the overworked rural woman whose household drudgery is too seldom made less by co-operative methods. The home washing-machine may aid if there is a man at the crank-handle, but such helps are not to be likened to a co-operative laundry where practically all the drudgery of the wash-day is taken away.

A grindstone operated by power is also a part of the equipment at the mill and affords satisfaction to the farmer who brings his cutlery to be sharpened. It also prevents many farmers from getting disgruntled over the time spent in co-operative housework.

So popular has the laundry become that the practicability of installing modern laundry drying machinery has been considered. At present the clothes are taken home wet as they come from the wringer.

Co-operative housework in the rural communities is only in its infancy. Its possibilities are unrecognized. One of the hardships of the rural woman is the large amount of housework which falls to her lot, a large part of it being caused by the presence of one or more hired men who are treated as one of the family. The problem is solved when the husband co-operates with his wife. In Hartford County, Connecticut, has this been demonstrated. At Millbrook Farm, Middletown, the problem of extra housework was solved by the employment of Italians for farm labor. A bungalow was built and the Italian farm hands given quarters there. They board themselves and care for their own rooms. They are excellent help. The plan has worked out so successfully that it has been generally adopted in that community.

Advertising Kinks for the Farmer

By William H. Hamby

THE way to get a good price for an article is to have something good and know whom it would exactly suit. One cannot find just the customer for every article by standing in the corner of his field and looking over the neighborhood, nor yet by taking it to town and offering it to the store. True, a farmer can sell everything he raises by this plan. There are always buyers who come to his pasture and take seventy-five head of cattle at so much per head. There are always mills and dealers at town who will buy all the grain he has to sell. And yet there is many a dollar that a good farmer misses unless he cultivates a faculty for advertising. A farmer has a dozen or a score of things during the year that might demand a fancy price if he only knew the customer who wants a fancy article. He hasn't the time to go out and hunt up a fancy customer, but a little judicious advertising will find him at a surprisingly small cost. For instance, a farmer of my acquaintance had a nice Jersey cow that he wished to sell. She was a good cow, about such a cow as ordinarily sold in his community for sixty dollars. He was offered sixty dollars for her. Most farmers would have taken it, but Simpson had learned the art of advertising. He knew that the cow he had would particularly appeal to a town man who wished milk for his family. So he inserted in the little daily paper this ad:

FOR SALE: A beautiful Jersey cow. Fine milker. Just the sort of cow for a man in town. Eats little and gives lots of milk. Address, J. R. Simpson, Rural Route No. 3, or telephone 147R.

Simpson had four inquiries from that ad and sold the cow to a banker for ninety dollars. Another man over in the southeast part of my State raised fifteen acres of cow-peas. They were of an unusually good quality, and he had cleaned them very carefully. He got one hundred and twenty-five bushels from the crop. At his trading point cow-peas sold for a dollar and twenty-five cents per bushel. He knew they were shipped to St. Louis and resold to buyers in parts of the State where cow-peas were not raised, at from two to three dollars a bushel. This farmer also had learned something of the art of advertising. He had at least learned the first principle, and that is, when you do advertise, put your ad in a paper that reaches the people who will be most likely to pay a good price for what you have to sell. He might have advertised in a home paper and never got a bidder, because there are a great many cow-peas in his section of the State, but in the northern part of the State there is a great demand for cow-pea seed and there are very few cow-peas raised.

The Price Comes if You Have the Goods

He also knew the farmers were willing to pay a good price for a good article. He selected an agricultural paper that circulated largely through the northern part of the State and inserted a three-line ad:

FOR SALE: Cow-pea seed of the finest quality. Very sound and clean. Address, William Glore, Popular Bluffs, Missouri.

He had more than a hundred inquiries and sold out his entire stock at two dollars and seventy-five cents per bushel, the buyer paying the freight. The advertising cost him only two dollars.

There are a hundred chances for the thrifty farmer to increase his profits by a little judicious advertising. If he has fifty gallons of cherries that are better than anybody else's cherries, instead of selling them to the store at thirty cents a gallon, a fifty-cent advertisement will sell them for forty cents a gallon. If he has some particularly fine peaches, he need only hunt up the customer by a little want ad, and he can get a dollar and twenty-five cents or a dollar and a half, instead of seventy-five cents on the market. Anything that is worthy of commanding a good price can often be sold at a big profit through an advertisement.

Foolish to Buy Wood Shingles

What's the use of buying common wood shingles now that you can get the original and genuine Edwards STEEL Shingles for LESS MONEY? Don't wood shingles catch fire, don't they rot, don't they cost a lot of time and money to put on?

Nobody ever heard of an Edwards Steel Shingle roof burning up or rotting. And it doesn't take long to put them on. For these steel shingles come in great big clusters of 100 or more.

Edwards STEEL Shingles

Each Edwards Steel Shingle not only has thoroughly galvanized sides, but each EDGE is dipped in MOLTEN ZINC. No chance of rust. All joints are permanently water-tight as a result of our patented Interlocking Device, which takes care of expansion and contraction.

PRICES We sell direct from factory and pay the freight. Our cost of doing business is divided among thousands of sales. Hence our ability to underprice wood shingles. You have been intending to get our prices for some time. Do it this time. Send a postal now—today—and get, by return mail, Catalog 95, the Roofing Offer of the Age. Give dimensions of roof if you can, so we can quote price on the complete job.

THE EDWARDS MANUFACTURING CO.
908-958 Lock St., Cincinnati, Ohio
Largest Makers of Sheet Metal Products in the World



30 Days Full Set of Empire Steel Wheels FREE TRIAL

Let us send you a full set of Empire Steel Wheels for a month's trial free. Just send us measure of wagon skeins—we'll send wheels to fit. Put them to every test, for every kind of hauling; prove for yourself that they are better, stronger, easier running than any wheels you ever used—they

End Drudgery of High Lifting and Save 25% of the Draft

Will make your old wagon good as new. Soon pay for themselves in saving of repair bills. If not all we say, return—trial costs you nothing. Get our big free book and free trial offer; also special offer on Empire Farmers' Handy Wagons—20 styles.

EMPIRE MFG. CO., Box 68A Quincy, Ill.

Kerosene Engine

The SANDOW Stationary Engine runs on kerosene or gasoline. Starts without cranking—throttle governed—hopper cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—portable—light weight—great power—15-day money-back trial. Sizes, 2 to 20 H. P. Send postal for free catalog. Detroit Motor Car Supply Co. 88 Canton Ave., Detroit, Mich.

The Headwork Shop

The Page That Saves an Extra Hired Man

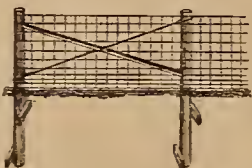
Movable Frames for Vines



A GOOD frame for climbing vines can be made with a peach-basket bottom, a wooden barrel-hoop and a few plaster-laths. Nail the laths to the bottom with small nails; at the other end spread the lath, and nail the hoop about fifteen inches from the ground. This frame can be set over a climbing vine and moved at will.

PAUL SCHULZE.

Two-by-Four Fence-Anchors



THE sketch shows how I used four pieces of two-by-fours as fence-anchors in setting braces for wire fencing. Take two two-by-fours and nail them to each post so that one will be near the top of the hole, and the other near the bottom. The two-by-fours should be about twenty inches long, and the hole four feet in depth. One is placed on one side of each post, and the other two-by-four on the other side, so that the fence will pull the two-by-fours firmly against the solid ground when the fence is stretched.

JOE THOMAS.

You Can't Lose It



I RECENTLY bought a new cultivator, and among the things included was a wrench to fit the numerous bolts contained in the implement. As these bolts might very often jar loose, I thought of this scheme to have the wrench handy. All that is needed is a fence-staple and a harness-snap. Fasten them to the cultivator handle as illustrated, and save valuable time by always having the wrench with you when you need it.

THOMAS C. HULTON.

The Bottle Mouse-Trap



THE other day there was a mouse in my pantry, but I had no mouse-trap on hand. After a little quick studying, I decided to try this kind of a trap: I took a bottle with a mouth one and one-half inches in diameter and placed it as shown in the sketch, supported by three bricks. I placed

a piece of cardboard against the front brick, put some crumbs of cheese on the cardboard and dropped some of the crumbs in the bottle. Mr. Mouse entered the bottle, but found he could not climb out because of the slippery glass, which did not afford any hold for his claws.

MRS. W. D. BOND.

Wedge for Ax-Handle

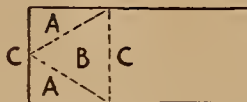


A COMMON wedge in a hammer or an ax handle usually comes loose in time, letting the tool fly off the handle. Use a wedge like the one in the sketch, and you will be through with this trouble forever.

A simple wedge is shown at A. It is made of soft steel. When driven into the handle the wood spreads the two prongs so that it is impossible to pull the wedge out.

C. L. SHUPING.

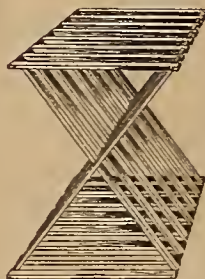
A Good Coin-Carrier



TO SEND coin safely in a letter take a piece of soft cardboard or blotting-paper about the size of an ordinary postal card, and lay the coin to be sent on the place marked B in the sketch, then bend the flaps (AA) over the coin, next bend at the dotted line until C at the left meets C at the right. The coin is now firmly held in this manner and inserted in the envelope, which does not allow the bendings of the cardboard to expand.

PAUL SCHULZE.

A Lawn Bench

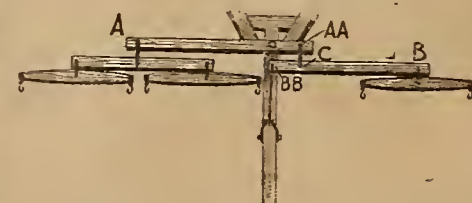


A SUITABLE bench for the lawn can be made from a crate in which the Texas and Bermuda onions come. Take the heavy wire out of one end so as to loosen the ends. Now take the two ends and turn them around, or rather turn the box inside out. Next match the slats, as shown above, and insert the wire. You have a bench that is light and serviceable. I have mine stained green.

A. STUTZ.

The Three-Horse Team

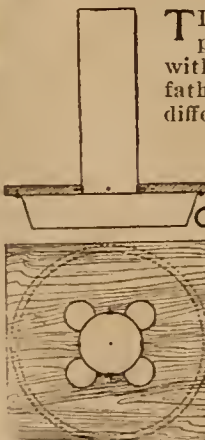
THIS is a three-horse equalizer that will permit three horses to work on any tongue that two horses can work on. The distance from A to the tongue is five times



the distance of AA to the tongue. Also, B to C is five times as long as from BB to C. To get the most work possible done during the summer season, three-horse teams are often necessary.

J. M. ERSKINE.

Faultless Hopper Feeder



THE sketch shows a hopper feeder we are using with perfect success. My father bought or made many different kinds which proved to be very defective, but finally hit on this one, which beats all the others. B is a board of suitable thickness and dimensions, through which a stove-pipe joint passes from C, a deep pan with a flanged rim. Cut a round hole in center of board just large enough for the stove-pipe to slip in, and nail from inside as shown. Before nailing out other holes about two or three inches in diameter through which the chickens can eat. The idea can be modified to suit fowls and circumstances.

E. S. McCLINTOCK.

Headwork Winner

The first-prize contribution in the Headwork Shop in this issue is, "Movable Frames for Vines," by Paul Schulze.



Make the most of every trip with rod and gun.

Take a KODAK with you

Illustrated catalogue at your dealer's, or by mail. Free.

EASTMAN KODAK CO.,
382 State St., ROCHESTER, N. Y.

FOR INFORMATION AS TO LANDS IN THE NATION'S GARDEN SPOT

THAT GREAT FRUIT AND TRUCK GROWING SECTION—ALONG THE ATLANTIC COAST LINE RAILROAD

IN VIRGINIA, NORTH AND SOUTH CAROLINA, GEORGIA, ALABAMA AND FLORIDA. WRITE TO WILBUR MCCOY, A. E. N. CLARK, A. S. I. AGT. DESK F, A. 6 L. AG. DESK F JACKSONVILLE, FLA. WILMINGTON, N. C.

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4 BUGGY WHEELS \$8.75

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

SPLIT HICKORY WHEEL CO., 607 F St., Cincinnati, Ohio

Shirley President Suspenders

Work with you—not against you

"Satisfaction or money back"

Be sure "Shirley President" is on buckles

The C. A. Edgerton Mfg. Co., Shirley, Mass.

50¢

Running Water AT Little Expense!

Don't think that running water on your farm means big expense and lots of trouble. You can now have running water in every building at small first cost and almost no upkeep expense. Save work, money and time by installing one of the 300

Goulds Reliable Pumps

You and your family can enjoy the luxury and protection of running water. No more tramping through the snow on a winter's morning to reach the well or spring. No more big risk of fire. The water can be right on tap in the house or barn ready for instant use. You can have a private water-works system at very little expense. Just the twist of a faucet and the water will gush forth.

Get the Facts

Our big illustrated book, "Water Supply for the Country Home," is packed from cover to cover with good ideas for every farmer with a water problem on his hands. Write for it today—NOW. Tell us things that you want to know about water and pumps. A postal brings it free.

The Goulds Mfg. Co., 114 W. Fall St., Seneca Falls, N. Y.

Largest Manufacturers of Pumps for Every Service

With butter at the present high price every ounce of cream counts

Cream is more than ever a very valuable commodity these days, and it is doubly important that not a drop be wasted or lost.

If you are still using the "gravity" setting method you are losing a pound of butter-fat in the skim-milk for every four or five pounds you get.

The advantages of the DE LAVAL over inferior cream separators at all times are greatest at the season when milk is often cool and cows are old in lactation.

A DE LAVAL Will Save Its Cost by Spring

Then why put off any longer the purchase of this great money saving machine? Put it in now and let it save its own cost during the Fall and Winter, and by next Spring you will be just so much ahead.

Even if you have only a few cows in milk you can buy a DE LAVAL now and save its cost by Spring, and you can buy a DE LAVAL machine for cash or on such liberal terms that it will actually pay for itself.

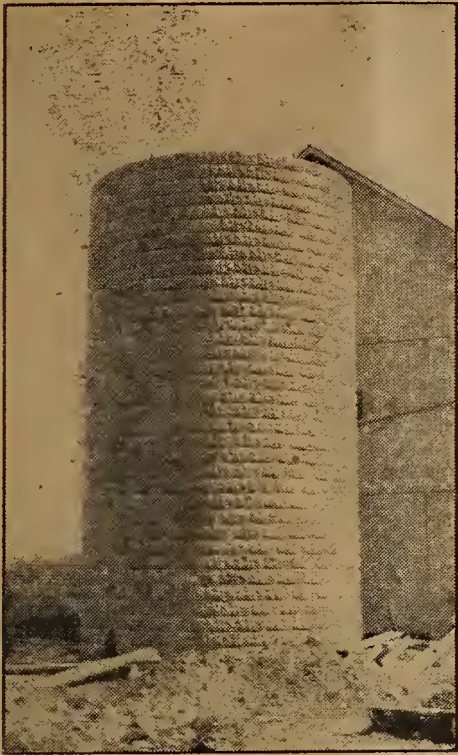
THE DE LAVAL SEPARATOR CO.
NEW YORK CHICAGO SAN FRANCISCO SEATTLE

Farm Notes

A Neat Concrete Silo

By Frank C. Perkins

THIS picture shows an Indiana concrete silo erected in the record time of twenty-three hours by two masons. It is said to be absolutely water-proof with half an inch coat of high grade cement plastering on the inside. The total height of the



Built from the inside

silo is twenty-four feet. It is held by some that a cement-silo of this type is cheaper and better than a wood or steel silo. All the work was done from the inside of the structure.

Simple Sash-Fastener

By D. A. McComb

TAKE a common clothes-pin and split one side off. This leaves the head and the other side to form a wedge. Tie a string to it, and hang one in each side of the bedroom window, allowing them to hang a little below the top of the lower sash.

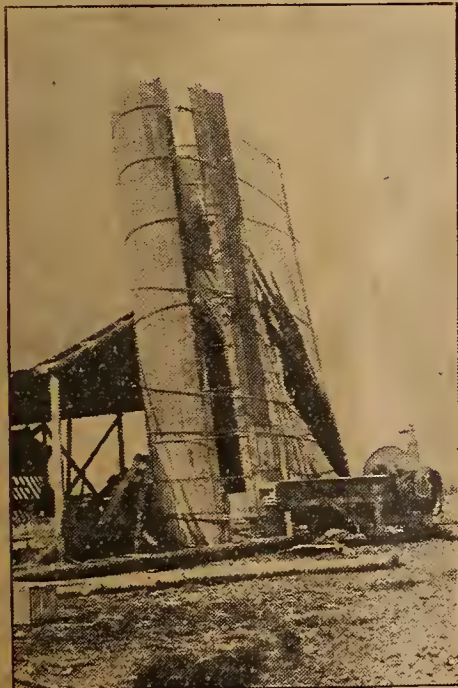
Lift the lower, or drop the upper, or shift both sash, as you like, and push the wedges tight between them, and they can't rattle nor be easily lifted from the outside.

Be Prepared for the Wind

By A. Cornell

THE picture shows a silo located where the wind very rarely assumes destructive force, and it was thought to be in shape to withstand any wind that was likely to hit it. The hoops were reasonably tight, but the wind forced the side in, and, as can be seen, had it not been for the hay shed the whole thing would have gone to the ground.

The best way to make a permanent silo, generally speaking, is to make it of reinforced concrete. On some occasions, however, such as being near a sawmill where the staves may be secured at a reasonable



It was thought to be well built

cost, or if one is building in a place from which he is likely to move the structure, the stave or similar silo is the one to be chosen.

The lesson to be taken from the picture is that it is not safe to depend on the hoops alone to resist the force of the wind.

Had this silo had a rim around the inside near the top—a sort of inside hoop, but with whatever is used for this purpose provision must be made for the shrinkage due to the drying out of the staves—it would have been given the rigidity that would have kept it from being forced out of the true circle which had to precede its buckling in.

In the rebuilding of this silo a well-braced rim, the outside circumference of which is ten inches less than the inside measurement of the silo, is being placed in the top of the structure. This rim is made of two-inch stuff and is kept in position by three eye-bolts equidistant from each other that pass through the staves and through the rim and from the eye of each is twisted a wire cable. These cables are secured to anchors set in the ground fifty feet from the base of the silo.

Keep up your end of the evenner this year.

A store account comes easier than a bank account, but the latter is a surer sign of thrift.

The most economical man doesn't buy something he doesn't need just because it is cheap; nor does he hesitate to buy something he does need just because it is dear.

Jack went up the hill
As Jill was coming down.
Jill lived in the country,
Jack lived in the town.
Still, later in the day,
Jack thought himself in luck
That he was going down the hill
Just as Jill was coming up.

Puts Tire Back On

By Geo. Mayhew

ALL that is needed to put on a tire that has run off you have with you whenever you use a wagon; namely, a wagon singletree.

To put tire on, roll wheel so as to get tire on inside of wheel between wagon-box and felloe. This leaves a little space at the top of wheel that the tire isn't on. Now take a singletree and put over wheel; put the hook under the tire, and the singletree over the rim. Now press on the other end of singletree, and the tire slips on.

It will bend the hook on the singletree, but that is a small item if you are far from home.

Sometimes if tire is very tight two singletrees are necessary.

For All Buildings in All Climates

The true test of a roofing is its ability to withstand *unusual* conditions. Illustrations show buildings on which J-M Asbestos Roofing has withstood 120° of heat without melting or drying out—40° below zero without cracking—deadly gases and chemical fumes without being injured—and a constant rain of hot sparks without burning.

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Because each pair will outlast three to six or even eight pairs of best quality all-leather work shoes. Furthermore there are no repairs—no loss of time or trouble of any kind. This shoe is made for comfort and made to last. The soles and sides (as shown in illustration) are stamped in one seamless piece from light, thin, springy steel, secured firmly to the uppers, which are of the very best quality soft, pliable

leather—absolutely waterproof and almost indestructible. The soles are studded with adjustable steel rivets, which give perfect traction, firm footing, and protect the soles from wear. The rivets themselves (which take all the wear) can be quickly replaced when partly worn. The cost of these is almost nothing—50 adjustable rivets for but 30 cents, and they will keep the shoes in good repair for from two to even three years.

Abolish Corns, Blisters, Bunions and Callouses

This shoe will give you absolute foot comfort because it has absolute foot form—and the sole being steel, it cannot warp, twist or draw out of shape. Consequently, corns, bunions, calluses, etc., cannot be irritated and no portion of the foot rubbed so as to start new miseries of this kind. You know very well that a perfect fitting shoe never made a corn in the world—and you also know that an all-leather shoe cannot fit after it has a twisted, broken sole, that allows the uppers to crease up into galling wrinkles.

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With this shoe you can work all day in mud and water—and your feet will remain powder dry. It is an absolute protection to your health. You escape colds, rheumatism, neuralgia, the dreaded pneumonia, and the long list of ills and dangers that result from damp or wet cold feet. In fact, these shoes pay for themselves again and again simply by preventing sickness—saving doctor's bills, and allowing you to work in weather in which you would not otherwise dare to leave the house.

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Farm and Fireside, Springfield, Ohio

Garden and Orchard

One Family—Three Acres

By R. E. Hodges

OVER \$700 net cash profit from three acres in a year, besides house rent and all the fruit, vegetables, chickens and eggs for a family of five, is the achievement of Dr. J. Vought, sixty-three years old, partially recovered from paralysis of his right side and having used a wooden leg on his left side for more than twenty years.

The doctor gave up his practice in Iowa four years ago, when the paralysis came. But having regained considerable activity he came to California in December, 1910.

Though the rainy season was on, the beauty of the country appealed to him and his wife so that in March they bought the three acres where they now live.

The crop on which they depended for a cash income was a French-prune orchard of 114 bearing trees which had been left in good shape by the previous owner.

The doctor had never seen a prune-tree till that winter, but, as he says, "I watched what my neighbors did, and followed their example. They were very friendly and told me whatever I wanted to know."

The orchard did not need pruning or spraying that year. If it had the cost would have been \$10 for pruning and \$11 for spraying.

The Orchards are Cultivated

In California the orchards are more thoroughly cultivated than corn-fields in the Middle West, and, since Doctor Vought had only his five-year-old family horse, he had to hire the plowing done for \$10. He himself harrowed it three times.

While the prunes were growing, the doctor and his wife cared for the garden, the big lawn with its shrubbery and flowers, and for the great variety of other fruits, besides the thirty-six White Leghorn hens. The eggs that were sold more than paid for their feed, and the house was supplied from the surplus.

French prunes ripen here in September and fall to the ground, which has been kept

soft by cultivation. If any remain on the tree when picking commences, a light shake brings them down.

Ordinarily, men, women and children take a hand in picking them up at about six cents per half-bushel box. But Doctor Vought hired a man at the unusually low price of \$2 per day through his picking-time, about twenty days.

Again the family horse came into use to haul the sixteen tons of fresh fruit across town to the drier, where it was sold for \$678 cash.

From early May till Thanksgiving there was a succession of other fruits in such abundance that the family used and canned and preserved all they could, and fed a great deal of fresh fruit to the horse, besides selling and giving away very much more. About a ton of pears were sold for \$30 from seven trees, while eight apple-trees produced forty-five boxes of apples, part of which were sold for \$25, and the doctor had apples for his friends the next May. The lone quince-tree had fine, big, delicious fruit, part of which sold for \$1.50. Mrs. Vought put up some cherries in salt water, which were most delicious when soaked in vinegar the next March. Quite a number of grapes were sold from the big arbor where the wife did part of her work on the warm summer days. Strawberries, loganberries and other small fruit added variety to the cherries, plums, apricots, figs, peaches, apples, pears, quinces and English walnuts.

If Doctor Vought had found it necessary to hire all the work done on the prunes at the usual prices, the pruning would have cost \$5 (at \$10 every two years), the spraying \$10, the plowing \$10, cultivation \$10, picking \$40 and hauling \$16. The net profit on the prunes alone would have been nearly \$600, a net profit of ten per cent, on \$2,000 an acre after paying labor, and this would not take into consideration the family's living.

Learn to be constructive. If you're only propping up bean-poles, for instance, place them so firmly they will stand as supports instead of being wobbling makeshifts.

Dust-Board for Cultivator

By J. A. Lipham



THIS device is useful for leaving a thin dust mulch after cultivating, especially if a large-shovel cultivator, common in many places, is used.

Get a hoard one inch thick, six inches wide and length according to the width between the rows to be cultivated. Get two strips of iron about three-sixteenths inch thick, seven-eighths inch wide and sixteen inches long. Bolt these to back end of beam, then twist them, and bolt them to the board. Take two more strips of iron twenty-one inches long, to be attached to the handles of the board, as illustrated. Have several holes at the top end so that the board can be raised and lowered.

This device can also be used on a plow for breaking up the clods. In addition to saving moisture through the mulch that is formed, this device kills grass that might otherwise live in the clods. I have used it for eight years with great satisfaction.

Keeping the stolen article, if only a handkerchief, makes a thief of any observant child.

Growing Trees in Poor Soil

By J. D. Yancey

WHEN planting orchards of any considerable size there will sometimes be places where the land is thin or poor. If trees are planted in such soil they usually make little growth and lag behind the trees on the better soil, thus giving the orchard a spotted, or uneven, appearance.

To prevent this, proceed in the following manner: first, stake off the tract to be planted so that you will know where each tree is to be set. Then, instead of planting trees in the poor soil, dig a hole three feet in diameter and two feet deep where each tree is to stand. Fill these holes with soil brought from the better parts of the field, tramping it down firmly as possible. You are now ready to set the trees, and if you do a good job they will grow, the first two years, fully as well as those on the better ground. In the meantime, fertilizer may be applied, a cover crop established, and the poor spots brought up to the same degree of fertility as the balance of the orchard.

It is more satisfactory to make and fill the holes in the fall so that the winter rains will settle the earth firmly. Then, too, they will not cause trouble in planting-time.

When the haul is short a common road-scraper and team may be used in this work by simply filling the scraper in the good part of the field and driving to a hole and dumping directly into it. In obtaining the good dirt you will of course avoid filling the scraper twice in the same place, or trenches will be dug that will not level up well in cultivation.

We seldom feel the cold of the slums while our own stove is glowing hot.

Back to Primitive Strife

By G. Henry

A MAN in the garden is musing and frowning; he's working most awfully hard. He's scratching and digging, and spading and hoeing; just tearing up earth by the yard. He's planting potatoes, and sowing some seeds, expecting to regain his health. He's found, has this banker, some things more important than sordid and unhealthy wealth. With his hair coming out, his stomach growing big and his gait of old age the sign, his wife told him flatly that unless he changed she simply would have to resign. His back is a-bending, and, oh, how he's sweating; he's returned to primitive strife. He's gone back to the soil, and by honest hard toil he expects to reconquer his wife.

Questions of Heredity

By A. J. Rogers, Jr.

"FOR years I have wondered why apple-trees grown from seeds of high-grade fruit bear only poor fruit," writes a Maine subscriber.

Practically all the commercial varieties of apples have originated purely by chance. Out of numberless self-sown apple-trees that have grown to maturity a very small proportion have been superior enough to warrant their perpetuation by grafting. These, therefore, are of unknown parentage, probably a most complicated mixture. In order to "breed true" the offspring must be identical with their parents. The only kind of seed that could accomplish this would have to develop from self-fertilized flowers. By a process of selection covering many generations varieties that are self-fertile could produce seed which when planted would breed true. It is by the above method that seeds of all plants are made to breed true. Since many of our commercial varieties demand cross-fertilization, fifty per cent. of foreign blood must necessarily be admitted, by virtue of which those varieties, or "seedlings," could not possibly breed true.

Another reader asks why it is that mules will not breed, and says it seems strange that the outcross will breed and their progeny will not.

Nature demands a certain amount of cross-fertilization, but within certain limits, after which the more distantly related, the more difficult it is to obtain a normal offspring, or even any offspring at all. In the case of the mule there is a union between two species, with the resulting abnormality—sterility. Just why this should be, nobody knows.

Smudge-Pot Multiplies Profits

By J. T. Soaper

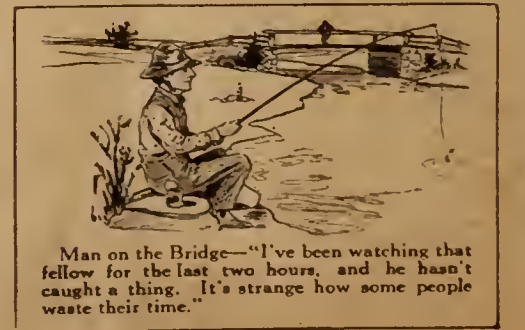
SIX years ago I bought one hundred one-gallon smudge-pots to use in my Kentucky peach-orchard, but up to date I have had no occasion to use them, as each year the peach-buds have been killed in January or February. That early in the season you could not smudge, as the weather is likely to be cold such a long time. I have been afraid to try them out. However, three years ago in my strawberry-bed of one acre I placed forty pots. Berries were in full bloom, and the thermometer got as low as 28°. I set my pots to work when the thermometer read 34°, and I raised it to 36°, while outside it read 28°. A stiff wind was blowing with a mixture of sleet and snow during the night, which caused some of the pots to boil over. Since then I have frequently suggested the possibility of some improvement which would hold the heat near the ground. It would then be a great thing for small fruit as well as for orchards. I failed to state that that year I picked over seven hundred gallons of berries, and of two other growers here that had in the same amount of ground, one picked forty gallons, and the other one brought into town two cases of rots.

Two Short Cuts

By G. Nordyke

TO REMOVE a broken screw with one side of the head broken off, place the screw-driver against one side of the head, and with a small block press firmly against the screw-driver, at the same time turning the screw-driver and the block. The screw will come out almost as easily as if the head was intact.

To stop a leak while waiting for a plumber, mix whitening and yellow soap into a thick paste with a little water. Apply this to the place where the leakage is, and it will be instantly stopped.



Man on the Bridge—"I've been watching that fellow for the last two hours, and he hasn't caught a thing. It's strange how some people waste their time."



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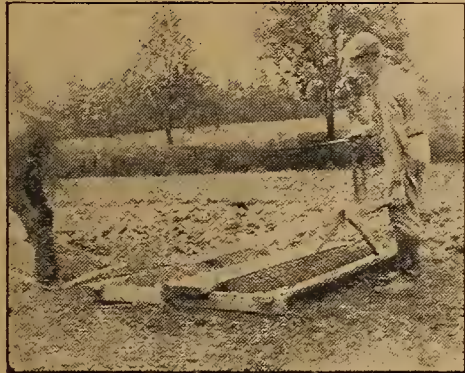
GARDENING By T. GREINER

Striped Beetle and Cabbage-Worm

THE best remedy for the striped beetle, which gives so much trouble by killing melon and cucumber and similar vines, is arsenate of lead. Put an ounce of the powder, or an ounce and a half of the paste (it comes in both forms), into a gallon of water or, better, of Bordeaux mixture, and spray the vines thoroughly as soon as the first beetles are seen, and keep them sprayed occasionally as long as there is danger. The same remedy might be used for the cabbage-worm, but some soap should be added to make the liquid adhere to the leaves. Water is liable to run off the cabbages as it would from a duck's back. Dashing hot water, hot soapsuds, or spraying with hot liquids, dusting with red pepper, insect-powders, and even common road dust, are also often used with good effect for the green cabbage-worm.

The Improved Meeker

No doubt the original Meeker disk or smoothing harrow is a most excellent tool for putting the finishing touches on a piece of clean garden land, and for fitting it for sowing seeds with the garden drill. It is in general use among gardeners in the great trucking regions and on the muck lands all over the East. Where large fields are being made ready for sowing spinach, onion or other seeds, as I saw it near Norfolk, Virginia, or for planting lettuce, celery, etc., as I saw it near South Lima, New York, this original form of harrow may be all right. In smaller patches, or when the land



A great help for gardeners

is not quite clean or a little rough, and when the harrow is liable to clog, we can handle and lift and, especially, turn it only with a great deal of inconvenience and effort. All the objectionable features, however, disappear as if by magic, and the tool becomes at once tractable and easily controllable, by adding a handle (such as is shown in the picture), fastened to the center of the crosspiece in front and held by iron braces fastened to the crosspiece in the rear. We use this tool now with a good deal of real pleasure, can ride on it or walk behind it, always with hand on the handle, and turn it without any effort in any direction. Gardeners should take notice. It is a great help.

Hastening Maturity

The reader who inquires about best means of hurrying the ripening of tomatoes is only one in a good many. We all want our tomatoes, melons, Lima beans, etc., just as early as we can have them. The foundation for early tomatoes, however, must be laid in winter or very early spring, by starting the plants early from seed, and frequent transplanting, giving to the plants the needed room. The next thing is to set them at proper time—namely, when the ground has become warm in spring—in good and well-prepared soil, and give good cultivation. I also apply a little acid phosphate, say a pound per square rod, as this has a tendency to hasten bloom, fruit-setting and fruit-ripening. This application is made in early spring, broadcast after plowing, and for melons, squashes, Lima beans, peppers and eggplants, as well as for tomatoes. If some of these aids have been neglected in proper time, we may still find a way to hasten maturity of tomatoes slightly by trimming and staking the plants. The poorest possible way to hurry up the ripening of tomatoes (a way often practised and recommended) is to cut off a large part of the tops above the fruit-clusters. Possibly it may make the fruit ripen prematurely. In any case it must hurt the quality of the tomatoes. We want them meaty, solid and of good tomato flavor. Without plenty of good foliage the specimens will be dried up, flabby, insipid, perhaps absolutely worthless, and at any rate unfit for marketing. By trimming the plant to two leaders, or stalks, carefully saving the foliage above each fruit-cluster and tying these stalks to a pole or stake or trellis, I believe I secure some ripe tomatoes a little earlier than I would get them otherwise. And the tomatoes thus ripened are first class.

Strawberries in the Garden

Most of our present standard sorts of strawberries are perfect-flowering, and a row or two of a single variety, such as Dunlap, Brandywine, Ozark, Marshall, etc., will do just as well standing alone as when other varieties are planted near it. The old Crescent, which was very popular once, often "fooled" the home gardener when he undertook to grow a crop and had no other variety near it. We still have a few varieties that need the assistance of another, perfect-flowering, sort near it to make it fruitful. Among those "pistillate" varieties are Bnbach and Beder Wood, and if the home grower happens to get hold of one of them he must take care to plant one or more of the other sorts that will supply the pollen or male principle with it. If not, there may be little or no perfect fruit.

It is always best to set a new patch every spring. It is quite a task to keep an old bed over for a second or even third year's fruiting, and very difficult to reclaim a strawberry-bed after it has once become overrun with weeds. Yet I always try to have at least a small patch of the old bed fixed up for next year's fruiting. We can cut the matted rows down to a narrow strip with plow or hoe and let the remaining plants form new runners on newly dug up margins, and in that case we are quite sure of getting ripe berries a week, and possibly ten days, earlier than from the new bed.

At this writing we are right at the height of the strawberry harvest. And what a feast it is! A new bed is coming on for next year, but we shall also have a small old bed. It is worth the trouble of cleaning up the old bed. We prolong the strawberry season that much at the first start.

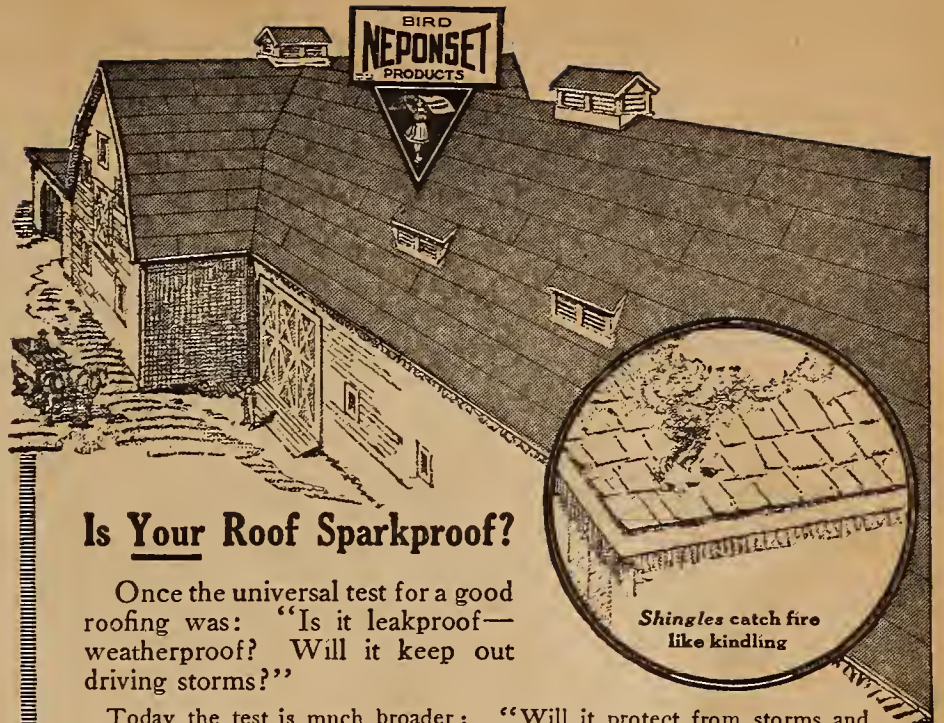
A Vegetable-Growers' Report

A most excellent report of the two last annual meetings of the New York State Vegetable-Growers' Association has come to my table from the office of the secretary, Prof. Paul Work of Ithaca. The association is very young, but appears to be thriving. It is doing good work for its members. The vegetable-grower has many problems to solve. He must take advantage of every opportunity offered to secure aid and practical suggestions. The report contains many that he will find of use to him. Every gardener in New York State should join the association. Every progressive gardener in any of the adjoining or near States will be greatly helped by becoming a member, attending the annual or summer meetings and receiving a copy of the valuable report. As a rule, I find that fruit-growers are most willing to come together for the purpose of talking their business affairs over, devising plans for bettering their conditions and making the business more profitable. Get together!

Blossoms, but no Fruit

Quite often I hear gardeners complain that the blossoms on their tomato, cucumber or melon vines drop off without setting fruit. Station botanists may call this "dropping of tomato (or melon) blossoms" and give the cause as "failure of proper pollination." This, however, is only giving one term for another, and does not go to the root of the trouble. Perhaps the problem has as yet not been thoroughly investigated. In my estimation, backed by experience, failure of these plants to set fruit is liable to occur on soils that have a comparative over-supply of humus and nitrogen, or are insufficiently supplied with mineral plant-foods, especially phosphoric acid. My own soil has plenty of potash, as do most strong loams.

I use acid phosphate freely to supply the phosphoric acid, both by direct applications, broadcast after plowing, and by mixing smaller quantities into the stable manure as made. There is no lack of mineral plant-foods, and the plants bloom and set fruit early and freely. My trouble sometimes, as for instance this year, when it has been so very dry for many weeks, is in the opposite direction. I have the fullest setting of fruit, both on tomatoes and melons, but would like to see a stronger vegetative growth. We must have plenty of foliage in order to secure high quality of fruit. The tomatoes of the Earliana type (Earliana, Floracraft, Maule's Earliest, Bonny Best, Northern Adirondack, etc.) have the natural tendency to bloom early and set fruit fully. You can plant them even where the soil is abundantly supplied with humus and nitrogen, and expect free fruit-setting. In fact, I plant these tomato varieties preferably on my richest garden-land, and have never yet failed to get the fruit I am after, early and abundantly. Applications of phosphatic manures, and on lighter (sandier) soils of potash also, can always be recommended as most promising of results. Use acid phosphate (dissolved rock) or bone-meal, wood-ashes if you have them, or the cheapest of honest chemical fertilizers, the latter furnishing mostly phosphoric acid; in other words, being little more than plain superphosphates. These explanations should help the reader to head off the "dropping of tomato-blossoms."



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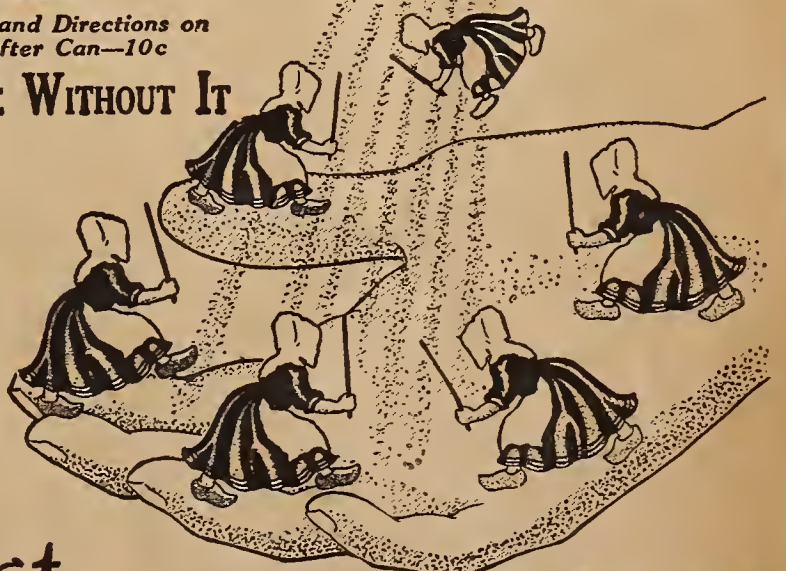
The Old Dutch Cleanser way is a thorough way,

AN EASIER AND QUICKER WAY.

No job too big or too small for Old Dutch Cleanser.

Many Uses and Directions on Large Sifter Can—10c

DON'T BE WITHOUT IT



The Best
HIRED HAND
For
Farm Cleaning

Mutual Relations and Interests of the Bell System and the Public

The suit brought by the United States questioning the purchase of certain telephone properties in the northwest, as well as the pending Interstate Commerce Commission telephone investigation, have caused many inquiries. Without taking up anything going to the merits of these proceedings, it has seemed to us proper to state generally what has been our policy and purpose in the conduct of our business.

We have found, or thought that we had, that our interests were best served when the public interests were best served; and we believe that such success as we have had has been because our business has been conducted on these lines.

We believe that our company has an interest as vital as that of the public in the proper administration of the problems of electrical intercommunication. The success and prosperity of our company depend upon a solution of these problems which shall be sound from both the standpoint of the company and the public which it serves.

Following our own best judgment, supplemented by the best obtainable advice, we have endeavored to do what would best serve the public interest; wherever possible our plans have been disclosed to the public in advance, and what has been done in carrying them out has been along ordinary business lines, with the implied, and generally, with the expressed approval, authorization or consent of the municipal and state authorities directly interested. Our effort has been not only to obey the law, but to avoid everything which might even have the appearance of an attempt at evasion.

Our business methods and policy, and practically all of the details as to the transaction of our business, are matters of common knowledge and are, and for many years have been, well known to the government. We will willingly furnish the government any additional information which is in our possession or under our control, and will cordially co-operate with it in obtaining such further information as it may require. Every possible assistance will be given by us to the courts in their effort to determine whether our policy is or has been inimical to the public interest. We desire that anything wrong be corrected; we will voluntarily rectify any wrong that may be pointed out to us; and, so far as it may be determined that our policy or any act under it is against the public interest, we will promptly conform to such determination.

We believe that if each of our exchanges were made an independent unit and if each connecting line were put under a separate control, the effect upon the telephone service of the country would be a condition so intolerable that the public would refuse to submit to it and would immediately require such physical connection and common control of these various units as would amalgamate them into a single system. Physical connection in the case of telephone or telegraph does not mean transfer of messages from one line to the other. It means such a connection as will permit one person to have the actual possession of the particular line of communication from one end of it to the other and this can only be given efficiently by exchange systems and connecting lines under a common control; and that is what the Bell System is.

In this connection, and for general information, we will restate the policy which controlled the building up of the Bell System, and our belief as to what a telephone system should be, and what are its relations to the public.

We believe in and were the first to advocate state or government control and regulation of public utilities; that this control or regulation should be by permanent quasi-judicial bodies, acting after thorough investigation and governed by the equities of each case; and that this control

or regulation, beyond requiring the greatest efficiency and economy, should not interfere with management or operation. We believe that these bodies, if they are to be permanent, effective and of public benefit, should be thoroughly representative; they should be of such character and should so conduct their investigations and deliberations as to command such respect from both the public and the corporations that both will without question accept their conclusions.

We believe that the public would in this way get all the advantages and avoid all the manifest disadvantages of public ownership.

We believe that centers of business and population exist for the convenience of the public as a whole, and that no such center can prosper without sufficient and efficient means of intercourse with other centers and tributary territories; that such means can only be afforded by prosperous utility and service companies and that fair rates are essential to prosperous companies. We do not believe that any public either desires or can obtain, nor can any service or utility furnish, permanent and efficient service at less than cost, including capital charges. We believe that ultimately the public either directly or indirectly pays the losses involved in the efforts to furnish such service at less than its fair cost, either through the loss of the capital involved, the losses incident to poor service or the necessary increase in charges required to pay for duplication of capital.

We believe that the highest commercial value of the telephone service depends on its completeness—on the extent and comprehensiveness of the facilities for intercommunication, not only between individuals but between centers of population; that no isolated section can be considered independently of any other section or of the whole; that rates must be so adjusted as to make it possible to obtain the maximum development by making it possible for every one to be connected who will add to the value of the system, thus giving the greatest value to the greatest number; that the interdependence of the telephone service and the value of complete and universal intercommunication justify and require some services partly at the expense of the whole for the benefit of the whole.

We believe that this highest commercial value can only be attained by one system under one common control and that it cannot be given by independent systems unless they are operated under agreements which result in one common control and one common interest, in effect making them a single system.

We believe that rates should be so adjusted as to afford the company sufficient revenue to pay such wages and compensation as will secure the most efficient service; to maintain the very highest and most advanced standards of plant and apparatus, to carry on such scientific and experimental research and inventions as to apparatus and methods as to insure the highest standards, and to carry to reserve and depreciation such amounts as will enable the company at any time to replace old plant and old methods with new plant and new methods as fast as they may be developed and found to be to the advantage of the service. We believe that in addition, such fair charges should be paid upon the investment in plant as will enable the company at any time to obtain money necessary to provide the plant required to meet the continuing demands of the public; and in order that waste and duplication of effort may be avoided and uniformity of purpose and common control be enforced, that there should be a centralized general administration in close communication with and having general authority over the whole on matters common to all or matters of general policy.

We believe that any surplus beyond that necessary to equalize dividends on a fair basis should be used by the company for the benefit of the public and should be inalienable for any other purpose, and should be either invested in revenue-earning plant until necessary to substitute plant which may become inadequate or obsolete, or should be used to make the service cheaper or better.

We believe that under proper governmental control and regulation the profits from promotion or operation allowed to be distributed should not be so large as to warrant or tempt complete duplication of plant and organization, with its duplication of its capital charges and its organization, operating, maintenance and depreciation expenses; and we do not believe that utilities giving at fair rates an efficient and sufficiently comprehensive universal service should be subject to limited competition, not giving such service. Competition which ignores the obligation to furnish a complete and comprehensive service is not competition, is not for the benefit of the public in that it does not reach the whole public interested.

If, therefore, complete duplication, with its dual exchange connection and dual bills for service, is a prerequisite to complete competition, government control and regulation cannot go hand in hand with competition.

We believe that the record of the Bell System will be accepted by the public as fully in accord with these declarations. Consistent adherence to this policy has given the public of the United States the best, most comprehensive and cheapest telephone service in the world and made the Bell standards the standards of all nations.

To remove any possible excuse for misapprehension on account of the many misleading statements which have been circulated as to the alleged unnecessary and overcapitalization and excessive charges of the Bell System, the following statistics are given. Except where stated, the figures are for the Bell System; that is, the American Telephone and Telegraph, and its Associated Companies.

The entire Bell System on June 30, 1913, had outstanding in the hands of the public obligations (i. e., notes, open accounts, bonds and shares) to the par value of \$776,000,000.

The book value of the total tangible assets, which is considerably less than their replacement value, amounted to \$960,000,000. Many appraisals of property included in these assets have been made, and most of them under the direction of public authorities. In no case has the value as it stands on the books failed to be sustained, and in most cases it has been very largely exceeded.

The total dividends and interest paid during the year 1912 amounted to only 6.1% on the average of its outstanding obligations, and to less than 5% on the average value of its assets.

The actual cash which has been paid into the treasury of the American Telephone and Telegraph Company on account of the capital obligations now outstanding amounts to \$22,000,000 more than the par of such outstanding obligations.

The Associated Companies collected from the public and paid back in taxes over \$10,000,000 during the year 1912.

The steadily increasing necessities of the public not only for additional but for new telephone service can only be met by new construction, involving capital outlay. To meet these demands during the six and one-half years from 1907 to June, 1913, inclusive, the increase in telephone plant was as follows: Toll line wire increased from 1,460,000 miles to 2,242,000 miles; exchange wire increased from 6,000,000 miles to 13,000,000; the number of exchange stations increased from 2,730,000 to 5,200,000; the number of stations of independent companies connected with the Bell System increased from 343,000 to 2,620,000. The number of independent companies connected with the Bell System is about 25,000. The number of employees in the Bell System, not including the employees of connected companies, on December 31, 1912, was 141,000.

During this same period the number of shareholders of the American Telephone and Telegraph Company, not including either the associated or connected companies, increased from 17,000 to about 54,000. About 47,000 shareholders hold less than 100 shares each; 6,500 shareholders hold from 100 to 1,000 shares each; 347 shareholders hold from 1,000 to 5,000 shares each, while there are only 16 shareholders of 5,000 shares or over in their own right. A majority of the shareholders are women.

American Telephone and Telegraph Co.

THEO. N. VAIL, President

Crops and Soils

Wasted Opportunities

By Berton Braley

THIS road is home and mother to a frog.

It's a bully sort of wallow for a hog,
As a duck-pond its design
Would be something pretty fine,
And it's really very classy as a bog.

If my spaniel wants a roomy pool to swim
It would prove extremely suitable for him,
And a hippopotamus
Would be made a happy cuss
As he burrowed in the gumbo here with vim.



It's a lovely spot to domicile a clam,
And a crocodile could lie here and be ca'm,
And I don't see why it can't
Make a nifty power plant.
If they only build a mill-race and a dam.

It would prosper as a mud-bath health resort,
Or a place for every kind of water sport,
As an irrigation ditch
It would make its owner rich,
And with dredging it would form an inland port.

'Twould be perfect for a beaver's snug abode,
As a swamp it's truly worthy of an ode,
It would make a barge canal
Or a water-snake corral,
But it's sure an awful failure as a road!

By using the manure-spreader, we are enabled to give the land a coating of fertilizer suitable to its requirements—the thin land a heavy dressing, and the better land a thin dressing—thus keeping the fertility of the soil evenly distributed.

Clean the Grain-Drill

By Milo E. Vail

HERE are a few hints which, if followed, will save farmers no end of trouble with their grain-drills.

In our section of Kentucky practically all the wheat-drills have what is called a fertilizer feed. Farmers who use fertilizer know that when the feed-cups are left in the drill they soon get rusty, and are sometimes broken in trying to get them out to clean them.

To avoid this, as soon as you are through using the drill take all the feeders out, and keep them out until you are ready to use the machine again. By that means they are always loose and easily cleaned.

Also, many times a drill is allowed to stand out in the weather all winter, and then expected to be ready to go to work in the spring. Before you get ready to use the drill, oil it thoroughly, then raise one wheel off the ground, throw the drill in gear, and see that everything runs before hitching to it. If the grain-feeders do not run, take a monkey wrench, slip it on the shaft, and by working it back and forth the feeders will soon be operating smoothly. There will be no danger of breaking a cog or twisting a shaft in two.

Don't expect any crop to grow on the low places in the field. It may grow there, but good drainage will insure the fact.

An Iowan in Saskatchewan

By John D. Stewart

SOME of the necessities for the farmer in Saskatchewan are high here. We cannot borrow money at present, but last year the bank charged ten per cent., and wouldn't loan longer than three months at a time. The land companies bring in people from the United States and charge them from six to ten dollars per acre more than they could get the same kind of land for back in the States. I paid \$22 per acre, and I could have got land just as good for \$14 an acre.

In some places the land is very stony. The stones are just under the surface, and one cannot see them easily, but when plowing is started the stones are very much in evidence. Then, too, the land companies tell the Americans they can raise flax on the new breaking. Most of them try it, and fail. I have seen a great deal sown in this way, but have never seen any cut.

I came in here from Iowa, and although I expect to try and make it pay out, there

are lots of Americans here, and they are all dissatisfied. But when someone talks of reporting the true conditions here, most of them say, "Don't say anything until you get rid of your land." And we can't do that at the price we paid for it.

I wouldn't advise anyone to leave Iowa or any good farming locality to come here, even if I do have land for sale. Many of the farmers here are in debt for more than they are worth.

The following list of some of the things the farmer has to buy will point to the extreme prices:

Groceries—Sugar, per 100 lbs., \$6.50; salt, per 100 lbs., \$2; flour, per 100 lbs., \$3.40; oatmeal, per 20 lbs., 80c; cornmeal, per 10 lbs., 50c; beans, per 3 lbs., 25c; tea, per 3 lbs., \$1; coffee, per 3 lbs., \$1; cocoa, ½-lb. tin, 30c; dried peaches, per lb., 15c; dried apples, per lb., 15c; lard, per 10 lbs., \$1.90; kerosene, 40c, and gasoline, 36c.

Dry-Goods—Overalls, from \$1 to \$1.35; work shirts, from 75c to \$1.50; gingham, from 15c to 17½c; underwear, wool, from \$1 to \$2, and underwear, cotton, from 50c to \$1. Shoes are very high.

Farm Machinery—Binders, \$165; drills, \$125 to \$135; gang plow, 24-in., high lift, \$84; sulky plow, 16-in., high lift, \$60; sulky plow, low lift, \$47.50; walking plow (combination), \$30; harrow, diamond, 5-section, \$25; harrow, lever, 4-section, \$38; disk harrows, \$47.50 to \$52; land-packers, 22-wheel, \$125; land-packers, 16-wheel, \$100; wagons, \$94 to \$98, and sleighs, \$35 to \$40.

Builders' Supplies—No. 1 shiplap, \$34; No. 2 shiplap, \$30; No. 1 common boards, \$34; No. 2 common boards, \$30; "dimensions," \$32; shingles, \$4.50; lime, \$3.25;



My experience says: "Give me Iowa land to land like this"

bricks, \$22.50; cement, 86-lb. bags, \$1.50; half-inch boards, \$23; No. 1 spruce finish, \$60, and No. 1 laths, \$6.

EDITOR'S NOTE—This is a letter with a value in it. The value lies in the truth it contains; namely, that the farm across the road looks far more prosperous than ours until we know that farm. That is human nature. Why not hoost your own farm? Try not the new until the old is ready to be laid aside.

Both the kick and the boost are sent to FARM AND FIRESIDE. Both may be expected wherever lands are exploited. Not a State in the Union but has poor soils, and likewise not one but has good soils. Choose what you want, but know what it is first.

I'll Eliminate Your Hog Troubles

GILBERT HESS, Doctor of Medicine
Doctor of Veterinary Science



Dr. Hess Stock Tonic

used regularly in the swill or drinking water and Dr. Hess Dip and Disinfectant used liberally around the hoghouses and in the wallow will make your swine virtually disease-proof and expel the worms.

Remember, the vigorous, well-developed, clean-kept hog is able to stand the ravages of these diseases far better than the weak, unthrifty animal. It is "the survival of the fittest" when hog disease is rampant.

In Dr. Hess Stock Tonic I have put every ingredient which my 25 years' experience as a veterinary scientist and doctor of medicine tells me a hog requires to keep healthy, thrifty and free from worms.

Heed this—a fattening hog that is not given tonics and laxatives is liable to come to trouble through overfeeding and a clogged system, just the same as a human being would suffer who ate a Thanksgiving dinner three times a day without laxatives. Dr. Hess Stock Tonic contains the tonics and laxatives essential to heavy-fed animals.

I Absolutely Guarantee

that Dr. Hess Stock Tonic will make your stock healthy, thrifty, free from disease and free from worms. If it does not pay you and pay you well, I have authorized your dealer to refund your money. Never sold by peddlers. I save the peddlers' salary, the up-keep of wagon and team and give you the benefit, which these prices prove: 25-lb. pail \$1.60; 100-lb. sack \$5.00. Smaller packages as low as 50c (except in Canada, the far West and the South).

Manufactured by

DR. HESS & CLARK, Ashland, Ohio

Dr. Hess Poultry Pan-a-ce-a

A splendid poultry tonic that shortens the moulting period. It gives the moulting hen vitality to force out the old quills, grow new feathers and get back on the job laying eggs all winter. It tones up the dormant egg organs and makes hens lay. Also helps chicks grow. Economical to use—a penny's worth is enough for 20 fowl per day. 15 lbs. 25c; 5 lbs. 60c; 25-lb. pail \$2.50. Except in Canada and the far West. Guaranteed.

Dr. Hess Instant Louse Killer

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

Don't Buy an Engine

until you investigate the Temple Gasoline- Kerosene Engines. Sizes: 1½ to 50 H.P. All Temple Engines are slow speed, heavy duty. They weigh and bulk from one-third to one-half less than horizontal engines, and notwithstanding, they are built stronger in proportion to strains. These advantages greatly increase their range of use.

Temple Engines cost nothing. They pay for themselves in fuel saving. They secure from the machines operated top-notch efficiency. They save from one-quarter to one-half the fuel of the average engine.

Temple Engines Have Won Five 1st Premiums for Low Operating Cost, Stability and Steady Power. This is the Company's 61st year as manufacturers. It is one of the pioneer engine makers of the country, which means reliability of its product.

Write today for catalog and quotations in regard to our **THIRTY-DAY FREE TRIAL** THE TEMPLE ENGINE AND PUMP CO., 406 Meagher Street, Chicago, Illinois

"Pittsburgh Perfect" Adjusts easily to hilly land

Perfectly effective under all conditions, because it is a ONE-PIECE FENCE

NO TROUBLE at all to quickly string "Pittsburgh Perfect" Fence over hills and through valleys. It contains no single, separate wires. The joints are

WELDED BY ELECTRICITY

making a one-piece fabric without the extra weight of waste wire. Made of special Open Hearth wire, heavily galvanized with pure zinc. Strongest and most durable fence produced anywhere. Thousands who use it say it's best.

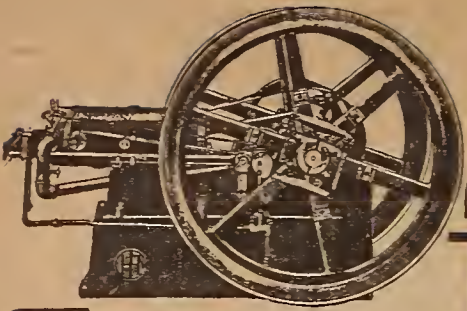
Investigate it, anyway. Read "How to Test Wire" in our new catalogue (sent free) which also shows the many different styles and sizes of "Pittsburgh Perfect" Fence for Field, Farm, Ranch, Lawn, Chicken, Poultry and Rabbit Yard and Garden.

WHERE THIS SIGN'S DISPLAYED IS SOLD THE BEST FENCE MADE.

PITTSBURGH STEEL CO.
PITTSBURGH, PA.

Makers of "Pittsburgh Perfect" Brands of Barbed Wire; Bright, Annealed and Galvanized Wire; Hard Spring Coil Wire; Twisted Cable Wire; Galvanized Telephone Wire; Bale Ties; Fence Staples; Poultry Netting Staples; Regular Wire Nails; Galvanized Wire Nails; Large Head Roofing Nails; "Pittsburgh Perfect" Fencing.





Backing Up The Purchaser

If we didn't care what you or anybody else was going to think of us, we could sell engines and other machines for much less money, but we could not put IHC quality into them.

The IHC way is to build always for the respect and good will of the American farmer, and to that end it has been successfully working for many years. The dealer who sells you an IHC engine expects on its merits to do business with you again. The farmer who buys an

IHC Oil and Gas Engine

knows it is the best engine bargain because it gives him efficient service in all kinds of farm work—pumping, sawing wood, spraying, running repair shop, grindstone, cream separator, etc.

IHC oil and gas engines operate on gas, gasoline, naphtha, kerosene, distillate and alcohol. Sizes range from 1 to 50 horse power. They are built vertical, horizontal, portable, stationary, skidded, air-cooled and water-cooled. IHC oil tractors—6-12 to 30-60 horse power.

Look over an IHC engine at the local dealer's. Learn from him what it will do for you, or write for catalogues to

INTERNATIONAL HARVESTER COMPANY OF AMERICA
CHICAGO (Incorporated) U S A

15 ⁹⁵ AMERICAN CREAM SEPARATOR
and Byward
FREE TRIAL, FULLY GUARANTEED.
Easy running. Easily cleaned.
Whether dairy is large or small,
obtain our handsome free catalog. Address
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Live Stock and Dairy

Green Corn and Hogs

By J. S. Underwood

IT IS a common practice to begin feeding green corn to hogs as soon as it is in the "roasting-ear" stage, giving stalk and all. Green corn fed thus may be made very beneficial to their growth or very detrimental. If fed sparingly at first without decreasing the amount of old corn or their regular ration for several weeks the hogs will eat just enough of the green corn to become accustomed to it. Then as the green corn turns it may be gradually increased and the amount of old corn fed decreased till by the time the new corn is ready to gather the hogs can be on a full feed of it.

Sudden changes from one diet to another, and especially from dry to green corn, derange the system and make it susceptible to disease. Many of the so-called attacks of hog-cholera are but results of suddenly changing to new corn.

My plan has always been to begin feeding a little green stalk about August 1st. It does not matter whether the corn is out of or just in silk, the hogs will eagerly devour the leaves and the larger part of the stalk. I usually begin by feeding one good-sized stalk to each hog. In no case do I decrease the amount of old corn. The animal does not eat the green stalk because he is compelled to, but because he wants to. After feeding one stalk a day to each hog for a week I increase the allowance to two stalks a day. When they cease eating the leaves and stalks, I then feed them the snapped ear. By this time I have decreased their old ration somewhat, and when the new corn is ready to gather I give them a ration of half old and half new. By gradually increasing the amount of new and decreasing the amount of old corn, in a short time after the new crop is gathered I have the hogs on a full feed of it.

I had the value of this plan made quite plain to me several years ago. Cholera was raging in our neighborhood, and I dreaded

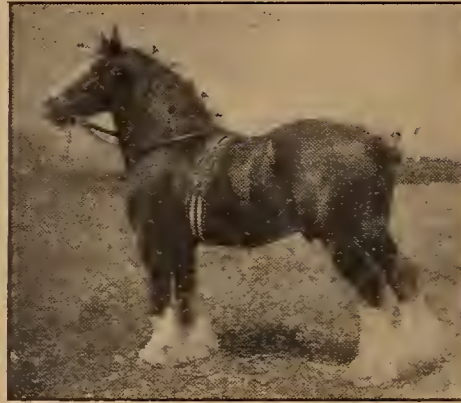
the time when I must change from the old to the new corn, fearing that I could not maintain the good health of my herd. In late July I began feeding a little green corn, although but little of it had begun to "shoot." I gradually increased the amount till the middle of August, when I began to decrease the quantity of old corn, and by the middle of September I had them on a full feed of new corn. I never saw a bunch of hogs do nicer, and though a neighbor across the lane lost nearly half his herd, mine showed no signs of disease. I do not claim that this gradual change from the old to the new corn was alone responsible for the good health of my herd. I kept everything clean around the pens and freely used carbolic acid and slaked lime as disinfectants.

A Boost for Better Horses

By John P. Ross

THE United States Bureau of Animal Industry has received notice that the Shire Horse Society of England, desiring to encourage the owners and breeders of Shire horses in America, has resolved to offer ten gold challenge cups, valued at \$250 each. Two of these gold cups will be annually awarded to representative American shows in rotation from the year 1913 to 1917, inclusive, the International Live Stock Exhibition at Chicago being chosen as the recipient for the present year. The cups will be awarded for the best registered Shire stallion, and for the best registered Shire mare; namely, registered in the American Shire Stud Book. The horses must be duly certified by the official veterinary officer as sound and free from hereditary disease.

The Shire horse is growing rapidly in favor with us, especially in the Pacific



Shires are becoming popular

This photograph shows the Shire stallion, Newadd Hillside, belonging to Jack London, the author

States, where his virtues are best known, and it is to be hoped that this very liberal offer of the home society will tend to make the breed as popular with us as it already is in Canada, South America and the British Colonies.

Get Rid of Thumps

By A. S. Alexander

THUMPS in small pigs is caused by over-feeding and lack of exercise. Make pigs run outdoors every day, or indoors, if the weather is stormy. Enforce daily exercise. Keep the bowels active. Do not feed corn to nursing sows. They should have light, laxative slop, and lime water should be mixed in at rate of one ounce to the quart of slop, if pigs do not thrive or show tendency to thumps or rickets. Treat an affected pig by physicking with castor-oil in milk; then gradually give enough paregoric to stop the thumping.

The Mare That Starts

By David Buffum

A NORTH CAROLINA reader states that his pony is a "Marsh" or "Banker" breed, five years old and off the coast but a few months. She is a splendid traveler, afraid of nothing, and, with one exception, is almost perfect.

She wants to start before the driver can get in the buggy. The minute she sees the driver start to get in she begins to rear and plunge. However, in less than fifty feet she is quiet and walking nicely. She is very nervous and will not bear the whip.

I think the case of your mare can be best managed by means of the foot-line. On first trying it I would recommend harnessing to a breaking-cart or at least to something that she will not be likely to break. Tie a new rope, about the size of your finger, to her fore foot between hoof and fetlock; pass it up through the belly-band and back into the wagon. Now, before you start to get into the wagon pull the cord so as to put her upon three legs and, by keeping it tight, keep her in this position until you are seated and ready to start. She will undoubtedly rear and plunge just as she did when on all four feet, but she will weary of it very shortly. I have treated several cases of exactly similar kind in this way and have never failed to succeed, although, strangely enough, it sometimes takes longer to eradicate the habit than some others that appear much worse. Do not be discouraged if some little time is required to effect a cure. Have all your rigging strong, apply the treatment quietly but perseveringly, and you will succeed.

Silo Satisfaction

By Charles B. Corbin

I HAVE been asked, "Does a silo pay? Does it give better returns than if the corn is fed dry?"

In June, 1912, I put into well-prepared ground, on clover-sod, two acres of Reid's Yellow Dent corn and four acres of white Kafir. These six acres were cut September 18th and 19th, the corn being well glazed, and put into a fifty-five-ton silo.

On October 20th I began feeding eight head of cows from this silo, seven of which were giving milk at the time. The cows received fifty pounds of silage each, daily, and one pint of cottonseed-meal. A record kept for six weeks showed that the hutter and cream sold from these cows each week averaged \$12.38. I fed fifteen gallons of skim-milk daily to two calves and twenty-one fall shoats which ran with the cows to pick up waste food. Allowing three cents per gallon, this would amount to \$3.15 each week.

The total returns for six weeks would therefore amount to \$93.18. During this time the cows ate seven tons of ensilage and two hundred pounds of cottonseed-meal. The meal cost me \$3.30 for two hundred pounds, leaving \$89.88 as the returns from the silage, or in other words making the silage worth \$12.84 per ton. This six-acre field produced eight tons per acre.

The six acres more than filled the fifty-five-ton silo; I paid for forty-eight tons of settled silage. The cash outlay for filling the silo and making the silage was \$2.75 per ton.

I have not counted in the value of the rich manure which I put on my fields this spring, nor the gains my shoats made following the cows.

A Woodbury County, Iowa, farmer sold his corn for \$1.50 a bushel, but he first put it into a bunch of fancy steers which topped the market in Sioux City.

A Virginia farmer wrote to the Missouri station, reporting that his cow was "drunk." He didn't think she really was, but he said so in his letter. When the case was investigated, it was found that she was actually intoxicated—drunk on silage that had not been kept as silage should be preserved.

Farm Fables—The Ox

WHEN your soul is troubled, when you are sorely beset, behold me. Observe my patience and profit by it. Take account of me, the humblest of your humble servants.

Consider that I take no false steps, pretend to no pressing need which calls for extravagant haste, yet finally arrive at my destination with my load safe and sound.

Recall that I hear your lashings without outward show of anger.

Remember that whilst I am deliberate about throwing my weight and strength into the collar or yoke, my load moves forward when I do decide to move it.

Open your eyes and mind to the fact that I make no vain display, and that I am



a more useful member of society than many who make loud protestations that they are great.

Appreciate that, whilst I am slow to anger, I could do great damage should I yield to sometimes almost irresistible temptation to punish those who hector me.

Realize that, although I am physically powerful beyond your puny imagination, I have the patience to forbear; that I accept as my unfortunate lot blows from your slender arms and kicks from your weakling feet.

Try to understand that, while you consider it very stupid in me that I cannot at once master your language, you never do succeed in understanding in the slightest degree my language. I must know you. You do not pretend or care to know me.

See that you come to a realization of the cruel fact that I must sleep and rest where you bid me sleep and rest; that I must eat of what you give me; that I must do your work as you wish me to do it; that I am your slave literally.

And that I seldom hook you with my horns, or kick you with my hind feet, or trample you with my front feet; that I do not knock you down and roll upon you and crush you.

So perhaps you shall appreciate me.

THE OX.



The Merger of East and West

"But there is neither East nor West, Border, nor Breed, nor Birth,
When two strong men stand face to face, tho' they come from the ends of the earth!"
—KIPLING.

In the "Ballad of East and West," Kipling tells the story of an Indian border bandit pursued to his hiding place in the hills by an English colonel's son.

These men were of different races and represented widely different ideas of life. But, as they came face to face, each found in the other elements of character which made them friends.

In this country, before the days of the telephone, infrequent and indirect communication tended to keep the people of the various sections separated and apart.

The telephone, by making communication quick and direct, has been a great cementing force. It has broken down the barriers of distance. It has made us a homogeneous people.

The Bell System, with its 7,500,000 telephones connecting the east and the west, the north and the south, makes one great neighborhood of the whole country.

It brings us together 27,000,000 times a day, and thus develops our common interests, facilitates our commercial dealings and promotes the patriotism of the people.

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The Market Outlook

A Flock of Ewes

Conditions of the Day Demand Some Changes
By John P. Ross

THOUGH no radical changes in sheep and lamb values have to be noted, yet rarely have their daily fluctuations been so great and so impossible to foresee. The drought and the unexampled spell of intense heat, extending over a great area, but principally affecting Illinois, Indiana, Iowa, Kansas and Oklahoma, have compelled farmers everywhere to dispose of live stock, the loss of which must be felt not only by them, but eventually by the consuming public. The truth of the old saying, "one man's meat is another's poison," is likely to be exemplified in the prices which will have to be paid, certainly for beef, and probably for all kinds of meat, during the coming winter.

The United States Bureau of Animal Industry has already issued words of warning as to the threatened exhaustion of our own meat-supply, and has drawn attention to the fact that the flocks and herds of the countries which we might have expected to be able to help us out, and especially those of Argentina, are so generally infected with contagious diseases that our inspection rules, both with respect to live animals and dressed meats, will have to be rigidly enforced. Under these circumstances those among us who have been able to retain live stock, and have feed-stuffs sufficient to fatten them for the fall and winter markets, are likely to profit by what must prove disastrous to so many who have been compelled to realize at a loss. All this seems to point with certainty to higher prices for all animal products.

That those who really know the most about sheep culture have unbounded faith in its future is evidenced just now by the news that seven hundred rams and ewes bought by or for American breeders at the recent Royal Agricultural Show at Bristol, England, and comprising among them champions and prize-winners of all the breeds most popular in this country, are now in the United States Quarantine Station, or have already been passed out to their purchasers in nearly every State of the Union.

With this great importation, added to the magnificent specimens of nearly every breed which are to be found scattered among the flocks wherever sheep are raised, we may hope that the ancient scrubs of times gone by will soon have perished from the land, together with the easily recognized apathy as to sheep culture.

Planning for Business

By W. S. A. Smith

HOT, dry weather has sent corn soaring, and there is no possibility of cheap corn this winter. We are up against fifty-cent corn and seven-cent feeders, and when we quietly think it over there's nothing very serious about it after all. There is no reason why, if cattle are handled in a rational manner, the man who feeds should not be as well paid for his feed this year as any other.

This hot, dry summer has greatly cut down the consumption of meat, and yet the prices on fat cattle do not break. Why? Because there are not enough fat cattle coming to market. A little later, when cooler weather sets in, consumption will increase, and if the prices do not break in this hot weather they certainly will not when it's cooler. There is a great demand for stock cattle. The dry weather has forced large numbers of cattle on the Kansas City markets, and yet there are plenty of buyers after them from every part of the country not affected by drought. It is not going to be an easy proposition to get heavy grass-fat cattle to put in the feed-lots for a short feed, as the packers are after that kind, and if we are forced to buy thinner cattle to feed it will tend to do away with the midwinter glut, help feed cattle to bring steadier prices, and that is what we all want. With high-priced land, high-priced feed and high-priced cattle the time has gone by for temporary improvements on that land. To produce beef, milk, pork or mutton economically you must have tools and outfit to do business with, and you must be able to figure your improvements, not at first cost, but on an interest basis. As, for instance, can you afford to feed fifty-cent corn to live stock in the spring months when the live stock are belly-deep in mud and half the gain and grain washed, when thirty dollars a year would save that waste and thirty dollars is the interest at six per cent. on five hundred dollars' worth of cement paving in your feed-lot, which, if properly put down, will last a lifetime. The same might be said of shelter. Thirty dollars a year will shelter two hundred head of cattle. No man who handles live stock in our northern winters and spring thaws can dispute the fact that sixty dollars a year invested as above is money well invested.

Sheds built with posts stuck in the ground are temporary improvements, and in a few years are no asset. With little more cost they could be built on concrete piers, which will last a lifetime and can be figured on an interest basis. I am just finishing now a cattle-shed, 130 feet by 28 feet, which is screwed down to cement posts eight feet high. These posts are twelve inches square, heavily reinforced with iron twelve feet apart, with angle irons on corners to prevent chipping; galvanized roofing, best quality; rafters, two by six inches by eighteen feet. There are no supports in center. A man can drive in with a hay-rack and turn around. This shed is not built for a hobby or for fun, but for business.

I do not blame a man for yelling when he is hurt, but I despise the fellow who hollers after the hurting stops.

Peculiar Hog-Market

By L. K. Brown

THE hog-market has been in a chaotic state for some time. The country has been prompted to liquidate because of adverse conditions. Disease has been taking many pigs in some districts, and drought in the Southwest has forced large numbers to market from that country, and the advance in the price of corn, because of the drought, has prompted many other growers to refuse to stand the risk of feeding out their shoats. As a result pigs and thin sows have continued to pour into the markets and demoralize the trade. With the sharp declines there has been a slight curtailment in the marketing, but the liquidation of unfinished stuff is expected to continue until the dry Southwest and the cholera districts elsewhere are cleaned up.

With the sharp break eastern demand became a strong bidder on the finished light-weights suitable for shipping, and this class consequently suffered the least decline. Finished medium and heavy-weights have been in fair demand, but the packers have discriminated against anything that is coarse or in thin flesh. This condition has brought about the widest spread in prices in many years.

In the provisions-markets sharp declines also occurred and caused heavy marketing by some of the holders, while others, supposedly the large packers, were strong buyers, showing their confidence in the market later. The outlook for the future sums up as follows:

The marketing of so many thin sows will bring about a shortage of lard.

The pigs which have been marketed would under favorable conditions have appeared in November and December. We can now expect light receipts at that time with better prices.

The liquidation of trashy stuff is not expected to last very far into October.

The general belief is that hogs which are not in danger from cholera and where feed is available should be held and fed and marketed after the market has been readjusted.

A Big Work the Farmer Has to Do

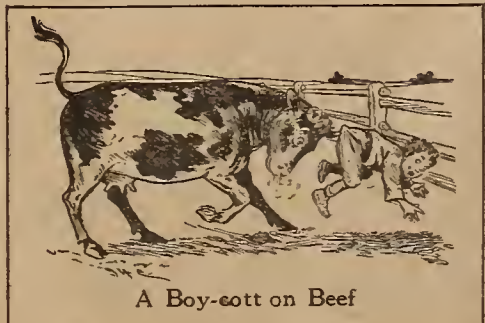
[CONTINUED FROM PAGE 4]

Some of this expense is eliminated when the farmer supplies a customer direct, and a compromise price ought to be possible. But in some cases it has been found that the farmer either cannot or will not put a retail price on his eggs, and in other cases he has asked even more than the consumer has been paying in the city.

Of course this is a wrong state of affairs. The farmer should have some fairly definite idea of the value of his commodities, based to some extent, it seems to me, upon the cost of producing them, and should be prepared to quote a price to a prospective customer, providing, of course, he cares to sell any part of his produce direct to the consumer.

These are a few of the things which it rests with the farmer to do, in order that he may attain and hold his proper place as the supplier of food to the human family. He can grow food as the agent of the various middlemen, putting upon the middleman all the work and responsibility of studying and supplying the household needs and demands, which is so largely the case at present; or he can turn all the middlemen into his agents or assistants by himself studying and meeting the household needs. Much depends upon the farmer.

Do not ape the rich. If you are seventy, healthy and poor, pity the millionaire who died at forty of Bright's disease.



A Boy-cott on Beef

Associated Maine Farmers

"Short-Circuiting" the Producer and Consumer by Union of Effort

By B. F. W. Thorpe

FOR a half-dozen years the farmers of Maine have been steadily working to formulate a practical plan for selling their produce and buying farm supplies to better advantage. A few of the subordinate Grange organizations have practiced co-operative buying and selling to excellent advantage, but on the whole the great majority of the four hundred subordinate granges of the State have not found it practicable to combine for the purpose of merchandising within their organizations satisfactorily.

After many discouragements in trying to get the advantages of direct and wholesale dealings within the Grange organizations, some of the most progressive farmers of Maine determined to incorporate without official connection with the Grange, but at the same time to take advantage of the organized strength and fraternal spirit strongly developed in the order.

To this end the organizing of co-operative associations was begun in January, 1912, under the direction of the state department of agriculture. Because the State was behind the movement, the farmers had confidence to believe that the State would not forsake the work until such time as the work was perfected.

The members of the association include none but Grange members in good standing. The same rule was observed in organizing the State Union, officially known as The Farmers' Union of Maine, which acts as a purchasing and selling agent for all the local associations.

Local Associations are Increasing

Each of the local associations, now numbering about a score, is capitalized at \$10,000; the shares in most cases are \$10 each. In order to affiliate with the State Farmers' Union, which was organized June 28, 1912, it is required that five shares of the State Union stock be purchased at \$5 per share. The State Union is composed of one representative from each local association, and each director representing the local associations has one vote for each share of stock held by his association.

Thus far the produce sold has been largely potatoes. The method of selling farm produce is as follows: When the manager of a local association wants to sell potatoes or other produce he notifies the manager of the State Union, giving quantity and grade of produce to be sold.

The State Union manager then makes the sales and instructs the local manager in regard to the shipping of the cars. Payment is made direct to the local association managers for all produce sold, and bill is sent by the State Union for its services at the end of each month, based on a rate of one and one-half cents a bushel of produce sold or any other charge provided for. These funds are used to pay salesmen at the market centers and other expenses of the Union.

The local associations are responsible for the grading, packing and loading, thus any losses resulting from poor quality and poor condition when delivered on the market falls on the local association that is at fault.

Farmers' Union Manager Makes Statements

The following facts concerning the business that has thus far been done by the Farmers' Union of Maine were furnished by Mr. C. E. Embree, general manager of the Union:

"The local associations were not sufficiently organized last fall to take the fullest advantage of the Union's assistance in selling. However, about two hundred cars of potatoes (135,000 bushels) were moved by the Union, making a saving of from fifteen to twenty-five dollars per car to the growers. In purchase of fertilizers a saving of \$2 per ton has been realized by purchasing through co-operative channels. This realized to the farmers of Maine a saving of \$260,000. All farmers buying fertilizer profited in like degree on account of the fact that the fertilizer companies met the reduction compelled by the Union.

"The associated farmers are saving \$1 per barrel in purchase of flour bought through the Union. Paris green was purchased through the Union at a saving of nine cents per pound (seventy-nine per cent. of saving)."

Mr. Embree feels well satisfied with the beginning that has been made in merchandising through the Farmers' Union of Maine during the brief time operations have been carried on. It now rests with the farmers themselves whether they will support the movement until the fullest economic possibilities of merchandising through the Union can be demonstrated.

The open-air treatment may be all right for consumptives, but it is of no value for farm tools or machinery.

Sheltering the farm machinery under the blue canopy lightens the load of the farmer's pocketbook and puts a bland smile upon the face of the implement-dealer.

You're really dry

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**Fish Brand
Reflex
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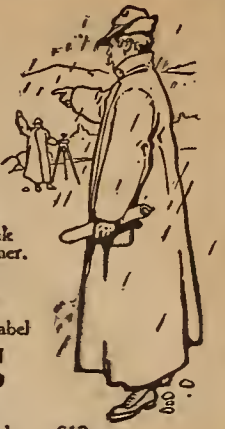
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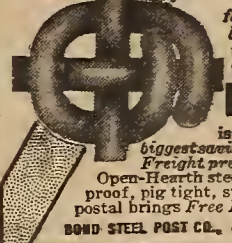
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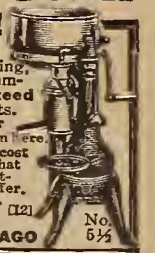
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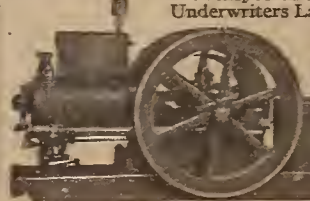
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P. A. is the "Big Smoke Medicine"

Prince Albert has soothed all kinds of pipe gouches for all kinds of men. One of the most interesting cases is that of the American Indians on the reservations. These direct descendants of the original jimmy pipers have taken to

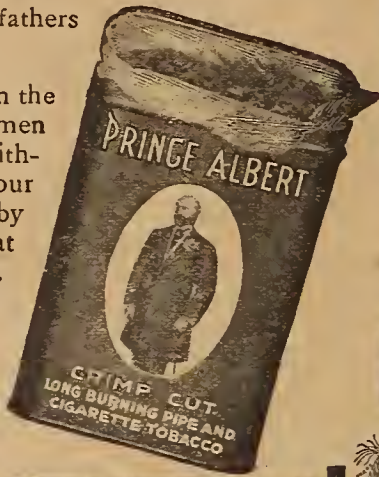
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with the same enthusiasm their forefathers took after paleface scalps.

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Poultry-Raising

Building with Slabs

By Lewis E. Leigh

PERSONS living near portable saw-mills may procure slabs very cheaply for building hen-houses and windbreak fences.

I build my houses twelve feet long and six feet wide, inside dimensions, making seventy-two feet floor space. This will accommodate from twelve to eighteen hens comfortably. The back is four feet in height, and the front six feet, giving a two-foot pitch to the roof.

I board down two feet from the roof with slabs cut two feet in length, then leave fourteen inches for air-space covered with one-inch-mesh wire netting, then board tight



The house is twelve feet long

to the ground. The fourteen-inch air-space runs the length of the poultry-house on the south side only; all other sides are tight against storms and cold.

This size coop with accompanying air-space I find just right for the hens. They get all the fresh air there is and still are comfortable and healthy.

I build a stockade fence on the north side any length desired. Dig a trench two feet deep, cut slabs six feet, and set the slabs (with the bark taken off) butts down and flat side out, spike tops to a ribbon, and cover cracks with slabs, which will give from two to four inches of solid wood against the cold winds.

The trench I fill in with stones, old tin cans, etc.

I build houses anywhere on this windbreak, using the fence for the back of house. The windbreak is, then, a continuation of the line of houses.

The ribbon is made from slabs with one straight edge. To saw the ends of slabs square, strike a line lengthwise, and square end from that.

To make roof, make the round side of slabs at each end an inch in thickness, and



The fence becomes the back of the house

lay flat side out. Then cover cracks with slab flat side down. This gives a thick wooden roof overhead.

I buy slabs at \$4 per cord, delivered.

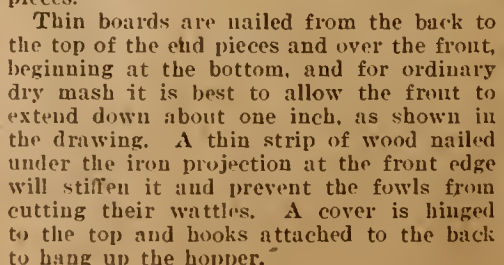
Feeding Dry Food

By A. E. Vandervort

THIS hopper has proved very satisfactory and is easily constructed as follows: First, make two pieces like A, and three pieces like B. Then nail one B to side of A, letting the top down about half an inch for the lid and keeping the front edges flush. If the back edges are not flush they can be made so by a few strokes of the plane. This completes one end. Construct the other end in a similar manner. In order to strengthen the hopper and to divide into two parts, use the other piece (B) for this purpose.

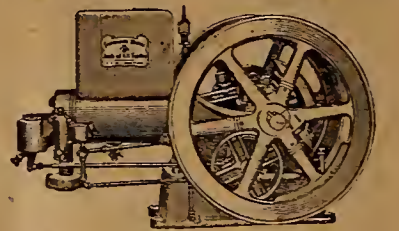
Now take a piece of tin or galvanized iron (C), and turn about half an inch on the long side until it is at a right angle. Extend this part over the trough to prevent the fowls from wasting the food. The tin should be bent so that it will fit around the curved pieces (B) at the bottom. Place the half-inch side over the top of the feed-trough, and nail the tin to the two end pieces.

Thin boards are nailed from the back to the top of the end pieces and over the front, beginning at the bottom, and for ordinary dry mash it is best to allow the front to extend down about one inch, as shown in the drawing. A thin strip of wood nailed under the iron projection at the front edge will stiffen it and prevent the fowls from cutting their wattles. A cover is hinged to the top and hooks attached to the back to hang up the hopper.



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The FARMERS' LOBBY.

Secretary Houston's Plans—By Judson C. Welliver

IF THERE is any one class that superinduces a greater pain than any other, it is composed of these enterprising agriculturists of the city who never see a real farm except from a railroad-car or an automobile, but who, resting the left foot easily on the brass rail and the right elbow cozily on the mahogany, ask a sure-enough farmer:

"Are you doing any scientific farming out at your place—this intensive stuff, you know—getting a million bushels of corn off every acre! I tell you, when you farmers get up to that racket you'll have the world by the tail."

If you pursue the matter with His Brainlessness for a few moments, you discover that he doesn't know anything about what he's talking about, except that he read somewhere that the average yield of corn per acre is around thirty bushels, while selected acres, hand-tilled and bottle-nursed, have produced several times that much. Therefore, if all the acres were tilled that way there would be so much corn that whisky would only cost a nickel a drink.

He doesn't dream that if all the farmers raised corn that way most of the acres would never get planted, the total yield would be a little fraction of what we get now, and everybody would lose money on his corn. If you tell him in words of one syllable about the impossibility of substituting the hoe for the gang plow and the riding cultivator, he knows you're just an old-style mutt of a farmer with a wooden nut entirely filled with cerise-green prunes where gray matter ought to be.

You all know that line of city-farmer stuff. Well, when I went to Dr. Beverly T. Galloway, the new assistant secretary of agriculture, to ask him to talk to FARM AND FIRESIDE, he opened up by airing his views about this intensive-farming business. It sounded good to me. The Department isn't for it. It doesn't want south-of-France or south-of-China agriculture for this country, with a peasant farming class. It wants to develop a typical American farmer who will be better, wiser, more intelligent, more independent, than any other class of farmers the world ever saw.

Intensive Farming Not to be Encouraged

"**WE ARE** often asked," said Doctor Galloway, "why we don't go in more for intensive farming. It has its place; but we are not for it generally. We know that some European countries get two or three times as much wheat per acre as we do. But if European labor cost what American labor does, European wheat would be worth \$2.50 to \$3 per bushel; Japanese wheat, \$4.50; Chinese wheat, \$5. Man labor is the cheapest in those countries, for the man—the peasant—is at the bottom of the social ladder. I can see no other end to a system of peasant farming than a system of peasantry; a whole family working by hand a few acres of very high-priced ground that somebody else owns to scratch out a bare living.

"We don't want that in America. We want an agriculture in which the moderate-sized, self-owned farm will predominate; big enough to take every advantage of machinery and improvements, small enough for the farmer to own it. That plan only will give the leisure necessary for cultivation of the mind and the soul as well as the soil."

It happened that, having long cultivated my grouch against intensive farming, I had just previously talked to Secretary Houston about the same thing. He had given me the same answer that Doctor Galloway framed.

"There are some agricultural products," said the Secretary, "that seem inevitably to be the products of peasantry. Sugar is one." Whether it comes from tropic cane, from Saxon beets or from our own beet regions, he has observed the labor is generally of the lowest class. It may be negroes in the tropics, peasants in Germany, women, children and foreigners in the United States; but wherever you go it must be the class of labor that works with the fingers, for the lowest wage. Therefore the Secretary didn't care whether we raised any sugar in this country. He was willing to let the tropics and the countries with a farming peasantry do it for us. Our own farmers he wants to do the things that, in the aggregate of farm products and human happiness, pay better.

Doctor Galloway made a striking statement of the present status of American agriculture. He noted the tendency to increase of tenant-farming; the land having become valuable enough to let the owner even of a modest farm live away from it. That he accounted the beginning of a tendency toward peasant farming. He disliked to admit it, but candor compelled; and frankness about the problem is necessary to attack and solve it.

"The problem is to develop an American system of farming that can resist this tendency, with increasing wealth and population, to force the actual tiller of the soil down to the peasant's status at the bottom of the ladder," he continued. "It is a mighty big problem, and one that we need to recognize and understand, and make the country understand at the outset. To the end of such understanding, we are setting on foot a series of surveys of rural life, economics, education, government, organization in every direction. It is a complex and difficult task. Roughly, I can divide our program into three parts:

The Work That's Been Laid Out

"**FIRST**, to get facts about present conditions. **SECOND**, to study communities where notable successes or failures have occurred and learn the causes. People always have more confidence in the thing that has been done than in somebody's theory that it perhaps can be done. **THIRD**, when our general survey and detailed intensive surveys have been made we will come to the greatest task of all: to put the results of these studies into effect. That is a task of publicity, education, example and of direction by the plan of sending expert organizers to help interested communities form the kind of associations they want.

"Elimination of waste in getting the farmer's products to the consumer and in getting industrial products to the farmer is the substance of our problem. Agricultural production must be more accurately adjusted to market demands. Farmers must understand better grading and standardization of their products in order to know what they ought to get for what they have to sell. As soon as possible, typical communities, probably counties, will be selected for demonstration of the possibilities of this work; the people will be appealed to to take it up, the Department will lend them help to organize and carry it on, and in short they will be asked to give themselves over to the experiment. There are hundreds of progressive counties where we will readily get co-operation in the big experiment."

"What about the Department's attitude toward the various rural and vocational education measures that have been urged in Congress?" I asked of Doctor Galloway.

Plans for Demonstration Work

"**WE BELIEVE** the primary issue is to develop an extension service that will carry to farmers the best agricultural information. We want the Lever bill with modifications; not the Page bill. Page has proposed a system of aid to vocational education in cities, to agricultural education in the country; but so little is known of this subject that we are not ready for it. Meanwhile the modified Lever bill looks to a close co-ordination of the work of the Department, the state experiment stations and the agricultural colleges in getting knowledge of better agriculture carried to the farm and the farmer.

"For fifteen years the Department's demonstration work has been exceedingly popular, especially in the South, where our agents have been going right into the fields and showing 'em how to do it.' We are now spending \$800,000 a year on it; the colleges are spending more. If we go on as now there will arise confusion and conflict between federal and state agencies. Therefore it is believed that this work should be done through the agricultural colleges. It will strengthen

them and prevent the organization of a powerful centralized machine, controlled from Washington, that might become a serious political factor. The Page bill did not look to this plan, but left the Department a free agent to go ahead with its extension work independent of the colleges. Broadly, the agricultural-college authorities were opposed to the Page plan, and the Department has taken their side."

This flat statement of the attitude of the Department under Secretary Houston is, I believe, the first that has been made. The Secretary is himself an agricultural-college man, he is associated with a President who is a college president, and there is every assurance that the agricultural colleges have carried their point in this whole matter of agricultural education and extension. The new Lever bill will give federal aid to the States for doing this work through their colleges, the Government duplicating every dollar laid down by the States, and the money being apportioned among the States in the ratio of their agricultural population. Thus, on a tabulation of distribution, it was shown that Alabama would get in a certain year \$85,222; Ohio, \$94,447; Indiana, \$76,258; Michigan, \$73,113; Kentucky, \$83,808; Illinois, \$101,987; Iowa, \$75,734; all this from the national funds and on condition that the State give as much more.

But in all cases the entire amount, federal and state money alike, would be handled through the agricultural colleges. That is exactly what the colleges have been struggling for; it is what they had in sight when they opposed the Page plan; and they are now going to get it if the Department's support will avail to carry the legislation. As to the widely-entertained conviction that the agricultural colleges are themselves in a peck of trouble, what with conflicting ambitions, personal rivalries of prominent men, and the hard fight for control in this enlarged sphere of power and authority, the Department just plainly doesn't believe it. It thinks the colleges are all right, are having as few troubles as other institutions, are doing excellent work with the means at their command, are well organized to project that work upon a much larger scale if the means be placed at their command, and are altogether the best instruments through which to work.

More Facts, Less Imagination

"**THE** ideal development of extension work," Doctor Galloway went on, "would be reached when every man's farm became an experiment farm. That means that the agents of Government and State, directed through the colleges, would be maintained in communities, to go about among the farmers and aid, direct and advise them about their farm operations. These men would have all manner of hard problems presented to them. They must be experts and well trained, and they must know how to get, from the experiment stations and the Department, the things that are wanted. Will a given field do better with one fertilizer or another? The agent may not know how to answer; but he must be capable of describing that field as to soil quality, tillage and rotation history so that somebody else can give him a correct answer for the farmer.

"He must be ready to answer questions of that very sort all the time. He must do it so well and so correctly that the farmers will come to believe in him.

"In order that this great corps of field agents may have things to tell the farmers all the time, there must in turn be a great expansion of the investigation and experiment work of the Department. The one thing we mustn't do is to run out of facts. The most dangerous of all would be to set men's imaginations at work, devising answers to questions that ought to be answered with demonstrated truth, not somebody's theory.

"The new administration of this Department wants to get to the ear of every farmer. If we do that, if we make him believe in us, and if we prove that in believing in us he is right, we will do a great service. There will never be a peasant agriculture in America if the leadership of this Department is wise enough to carry out its plans, and the people are willing to give these plans a fair chance to work out."

"**WE ARE** going to find out, if possible, what is the best type of American farm and farmer, and cultivate it. The ideal American farm—the one on the whole best fitted for raising both hogs and humanity, corn and citizens—may be of 100 acres, or 160, or 200. We don't know yet; we want first to find out; then we want to push for that kind of farms, worked by the best kind of farmers for that kind of farming."
Secretary Houston.

IN FRONTENAC CAVE

As Told by One Who Was There, and Edited by Hayden Carruth

Author of "Track's End," "The Voyage of the Rattletrap," Etc.

Illustrated by Edward L. Chase

Synopsis of Preceding Chapters

Judson Pitcher, about eighteen years old, comes to Hawk's Landing, on the Mississippi River in Minnesota. Here he meets Captain Nathan Archway and his daughter Amy and his son Robert. Robert goes with Judson to the Lumberman's Bank, and while there it is attacked by the notorious gang of robbers led by Isaac Liverpool. Robert is shot and killed, and the gang escape to their hiding-place in Frontenac Cave. It is impossible to penetrate this cave by the only entrance known, since the robbers have closed it up. Captain Archway conceives a plan to get into it through a small sink-hole on the prairie a number of miles back from the Zumbro River. He and Judson go there in the night and lower themselves with a long rope. While they are exploring a thunder-shower comes up, and the flood carries the rope down the sink-hole and fills the small opening a hundred or more feet above with brush and soil. Before leaving the Captain's home at Hawk's Landing Judson finds that he is very much interested in Amy Archway. When the Captain and Jud find there is no hope of getting out of the cave where they got in, they begin to search for another outlet, and keep it up for six days. By this time their food is gone and they are very weak. Since awakening on their first morning in the cave they have been greatly puzzled by a strange beating or throbbing sound which is especially noticeable in the Bedroom near Sink-Hole Dome. Finally they move a loose stone at the bottom of a small tunnel and get down into the main part of the cave. Looking down a pit, they see a smoldering camp-fire, and the Captain starts back to get their rope, but falls down another pit into a stream of water. Jud goes after the rope, and, with their only candle down to the last inch, lowers himself into the pit and finds the Captain alive and with some cooked fish which he has found by the fire. They eat it, and later get fish from another river which they cook over a fire made of small sticks evidently washed into the cave by freshets. Having no more candles, they use sticks soaked in fish-oil. On one of their exploring trips Jud stumbles over a man who is sleeping on the ground. The man grapples with the Captain in the dark; when Jud makes a light with his last match they find the man is Gil Dauphin, one of the Liverpool gang. He explains that he has been cast off by the gang, and he tells them that the only way to reach Liverpool's camp is by going up the pit down which he was thrown. They work many days in making a long pole out of dry twigs with which to climb up this pit. They carry the pole down a passage called the Gun-Barrel and suddenly meet the Liverpool gang, who begin firing at them with their revolvers. They all escape and hide in an obscure place which they name the Robin's Nest. Here they stay for several days. They find that Dauphin has some powder and caps in a flask, and the Captain makes some large shot from bird-shot and they load the gun. They go to Dauphin's Pit in the hope of getting out through that part of the cave. The Captain climbs the rope and is captured by some other members of the robber band at the top. These men take his gun and fire down the pit at Judson; he is unharmed, but runs in the arms of Isaac Liverpool. Dauphin alone escapes. Liverpool starts to take Jud to his headquarters. He sends Jud up the rope at Dauphin's Pit, following behind. Just as he reaches the top Jud cuts the rope, and Liverpool falls back. Jud finds a lantern and a basket of food. Near the top of Dauphin's Pit he hides on a narrow ledge a little higher than a man's head. Other members of the gang pull Liverpool up with another rope. Jud is finally forced by thirst to leave the shelf on which he is lying, and before he gets back Dauphin comes up the rope. Dauphin leads him to a secure place which they call the Swallow's Nest. They stay there for two days, then go to the Fort, where the gang is, and see the Captain there a prisoner. They creep down to the men after the men are asleep, and Jud awakens the Captain. Dauphin stops to get a bottle of whisky out of the pocket of one of the men; Liverpool awakens, and he and Dauphin fire simultaneously at each other, while Judson is forced to leave the Captain and run away, pursued by some of the gang. He comes to the top of Dauphin's Pit and leaps over the edge to the depths below.

Part VII.

So I reach my last chapter, but find something left for it: I make out the meaning of the strange sound in the Bedroom, and then with friends go back to the Fort, where we rescue the dear old Captain and hear of Dauphin and Liverpool; after which we say a joyous farewell to Frontenac Cave, and I tell the reader (what is the truth) that we never go back again.

IT WAS, I think, the rope that saved me. It had been in a coil, and it struck in a heap, which is the way I struck too, only I was on top of the rope; and the first rope which I had cut was there also, as I learned later. Dauphin, if he told the truth, had been bruised, stunned and half killed by his fall down the same place; and Liverpool certainly hurt and, I believe, broke his arm; but beyond being made dizzy and given a strange ringing in the head I got off free of harm, though I was so shaken up and dazed at first that I knew not if I were unhurt or had every bone in my body broken.

The men who were after me came to the edge of the pit and fired all the shots in their revolvers at me, or at the darkness, rather, which was what saved me, since not one bullet hit anything but the rocks. When they stopped I got to my feet, drawing myself up by the wall, and started along the Gun-Barrel, bumping my head well at the turn and staggering along, I suspect, crooked enough. I had no candle or torch, but plenty of matches, so when I got out into the first room I struck one and looked at myself a little and tried to get my wits together by the help of the light. The noise had brought down the bats, and they were pitching about on all sides, like kites which had lost their tails. I staggered on across the room, lighting another match after a few steps; and so I went all the way to Fish Camp by match-light, the bats taking it very ill from first to last.

At Fish Camp I found some torch-sticks and lit one, and then built a fire. This was a little cheering, and the warmth did no harm. I knew I ought to be hungry, but the very thought of food, and especially of fish, was unpleasant. I think if I had been sure that the outlaws could not get down that I should have taken a nap by the fire; but though I suspected they had no more rope, I was not certain of it, and so knew it was not safe. But I took a few minutes to think of how matters stood, and I'm sure I never had felt so frightened and utterly discouraged before.

The great thing which made it worse for me than at any time before was that I was now alone. My bravery is nothing to brag of, but it would take a greater coward than I to give up before anything when with the Captain. Then even Dauphin had been some company; but to be utterly alone with the bats

hurried on. At Rope Pit I found the pole up; so I just stuck my torch in my collar and climbed it, thus getting some good out of the thing at last. I made no call at either the Star Chamber or the Robin's Nest, having had quite enough of both, but went on pell-mell for the Trap-Door. When I got through this and listened I was a little crestfallen at not hearing the throbbing, for it was on this (as I'll warrant you have guessed) that my hopes rested. However, I went on, and soon I did hear it, but it was different from before, which pleased me. As I went farther it grew louder, but the walls did not so throb with it, though the echoes were lively enough. It sounded more open, and as if it was in the cave, as you will understand, since I cannot flatter myself that you don't know what it was by this time; but were I a story-writer I might have had you well mixed up on it by now; as I said, they may make some mistakes, but they know their business.

So when I flashed my torch into the Bedroom, my ears stunned by the crash, there it was, just as the idea had come stealing into my mind at Fish Camp, the great iron drill of a well-boring machine, beating up and down like a trip-hammer.

It was not strange that I never thought what it was till I went to sleep, or went crazy or something, at the last moment, for I never had much brightness at thinking of things, as you have seen; but I have always thought it rather odd that the Captain did not study it out, though, to be sure, the sound when he heard it, before it broke through the roof, was more like the throbbing of the heart of the world, as I may say, than like any noise made by a machine of man.

When I saw it and knew that my deliverance (as the word is) was at hand I half fainted, and lay down on the ground weak as a cat, and just watched the big rod with the long shining links of the jars in the middle, which were to jerk it loose if it got stuck, pounding up and down with force enough to knock a hole through an ironclad.

When I had got a little of my senses together I began to consider what was best to do. The hole where it came through the roof ten or twelve feet above was the usual size, about six inches across, though I noticed where the drill was working in the floor it was smaller, by which I knew the men were going to put down an iron pipe to bridge the cave, just big enough to slip down the upper hole, but just too big to go down the lower one; but this, luckily, was not yet in place. The drill and rod were fifteen feet or more long, but it had got a couple of yards into the floor, so I could see the big rope, almost two inches thick, just below the ceiling. The thing beat up and down over a foot, and fell with a terrible crash, turning a little each time, which I knew was done by a man who had hold of the rope at the top.

I soon saw that I must wait till the men drew up the drill to clean out the hole before I could let them know I was below, but I had not thought of any plan yet when the drill went up. When it was clear of the hole above I looked up and could see a round spot of light, like a small moon, but I had no idea of how far up it was, though I knew it might easily be a hundred feet, or maybe two hundred. First I was going to call to the men, then I thought I might not be heard, or if I was, that a voice coming up out of the bowels of the solid earth might so frighten them that they would run away and leave me after all.

The bucket, a long, slender sheet-iron affair with a valve in the bottom, came bumping and rumbling down on a slender rope and blundered in the lower hole at last and began churning up and down, pumping up the water and pulverized stone through the valve. I saw I must send up a written message, but before I could get it ready the bucket went spinning up; however, it came down again, and by that time I had this ready, written with a lead-pencil on the back of a letter from my father:

Captain Archway and I are down here in a cave. Have found Isaac Liverpool. Come right away to sink-hole, quarter mile southwest of Birch Mound. JUDSON PITCHER.

I snatched off my cap, rolled the letter in it and stuffed it all in the top end of the bucket, which the next moment went thumping away up the hole. For ten minutes, I think, after it got up I heard not a sound, and I guessed they were reading my message out of the earth and getting over their astonishment. Then there was a sudden flash of dazzling light around the hole in the cave floor, and I knew instantly that they were flashing the sunlight down with a looking-glass to get a sight of me, so I ran over and tried to look up, but I could no more open my eyes than I could fly. But I knew they saw my face, because I heard a voice shout "All right!" with a hollow ring, and then it was still, and I ran away to Sink-Hole Dome as fast as I could, shaking my fist at the bats as I went through what we called the Church and crying: "I'll get away from you now!"

I thought they would never come to the dome, but at last I began to hear sounds, [CONCLUDED ON PAGE 23]



We sat in the Captain's yard many hours

was another thing. Besides, what hope is there? I thought. Here I am down in that part of the cave which two, and for some time three, of us hunted over for days to find an outlet, and found none; so what is there for me but to perish? This I thought more plainly than I can tell it, alone and hundreds of feet underground. Well, I know I oughtn't to have cried like a very girl; but, anyhow, I felt better afterward.

Maybe, too, it started an idea in my mind; at least, something did about this time. It seems odd that I don't know when and how it started, or what made me think of it, but I don't. Sometimes I think I must have taken forty winks, sitting there by the fire, and dreamed it; or perhaps my mind went wrong for a minute and it came to me then, and that is the reason I can't remember how it was. Anyhow, it came gradually; and these book-writers who say that such things always flash upon you are mistaken, though that may be the best way to tell it; I dare venture the book-writers know their business; most of us do know our business, but my business is not book-writing.

I knew this much; that the notion which had come creeping into my mind meant the last only hope of getting out of that cave, and though I kept saying to myself that I was to be disappointed, I knew in another way that I was right, and knew it as well then as I do now. So I just covered up the fire with hands trembling and heart fluttering, took the torch-sticks and started off.

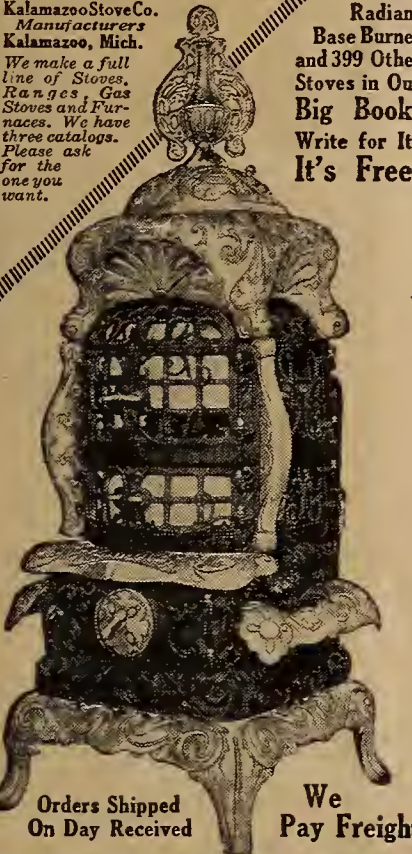
I crept past the muzzle of the Gun-Barrel with my torch out, but heard nothing. Then I lit it again and

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A Few Thoughts For Sunday

By Merle Hutchinson

The Inner Chapel

By Arthur Wallace Peach

WITHIN your heart erect A little chapel gray, Wherein, a while apart From turmoil of the day, Your heart can find the peace That comes to those who pray.

There for a little while In quiet rest; Think not of toil and care, Of fruitless quest; Within the voiceless hush Your heart will feel A calm like mother arms About you steal.

So build within your heart A little chapel gray, Where you may go apart From din and fret of day, Where peace will fold you round, And burdens slip away!

The Ten Commandments

WITH some slight verbal differences, the ten commandments, taught over all the earth to-day, in the Greek, the Roman and all other branches of the Christian Church, are the same as those read in the synagogue from the gathering at Mount Sinai to the present time. They are very simple laws, presenting to primitive people the first notions of the fundamental rules of conduct, but their spirit includes all the shades of action known to a more complicated state of social life. In recent times it has become the custom to add to the Hebraic tables the beautiful words which are the spiritual summary of all religious belief, "Thou shalt love the Lord thy God with all thy heart—and thy neighbor as thyself." This is an addition that binds the whole world more closely together, but curiously the only other addition to these tables of the law was one, made very early, that cut its users off from connection with the rest of the world. The Samaritans, a mixed Jewish people, had an eleventh commandment, which read, "Thou shalt build an altar on Mount Gerizim, and there only shalt thou worship," a rule that shut them out from intercourse with their cousins in the rest of Palestine, and still holds them to their hilltop.

The Long Warfare

SOME ninety years ago there was excitement in a New England village. The parson's new house was to be raised. The timbers lay about the foundations, notched and ready to be fitted in place. The neighbors, according to custom, were gathered, the men to fit the frame together, the women to serve a hearty meal with invigorating drinks. But the village parson was the pioneer in temperance work in this country. No New England rum would be passed on his land, and many were the prophecies that no building could be raised without its aid. But up it went, and the stanch wide house still stands. That "cold-water raising" belonged to the earliest days of the temperance war. For it is a war. At first the question was looked on as a matter of merely individual morality, but we realize now, not alone the danger to the individual, but the close connection of the traffic with every evil in the community.

We may not agree with that small boy who, when asked what he would do if he had a great deal of money to spend for his town, promptly replied, "I would use the money to buy votes for the Prohibition Party." Now, however, that nine States have adopted prohibition, and in most of the others, under local option, the sale of intoxicants is forbidden in a large proportion of the territory. It would seem that this method of direct legal restriction had proven of some use. As one Kansas man, speaking of the undeniable benefits in Kansas, remarked, "It is merely a question of the honesty of your officials." The stronger public opinion, the more likelihood of punishment falling on the lax official, and here precisely is the influence of the individual citizen felt. With the passage this year by Congress of the Webb law, forbidding the bringing of liquor by rail into no-license territory, the greatest difficulty in the enforcement of restrictive measures seems done away.

Although the liquor manufacturers and dealers say that restrictive laws do not decrease the sale, yet they fight fiercely every step of the legislative program. Prohibition is now being seriously considered for the whole of Sweden, but there have been many other experiments in this contest, the most practical of which would seem to be those that put

the seller on a salary, so that he has no profit from sales and therefore no temptation to sell illegally. Where we approach to a paternalistic government we deal rigorously with the saloon, forbidding it entirely at Panama and cutting the number in half at Washington. But we are engaged in no short contest. These ninety years have brought us nearer to some solution of this problem, but the victory is not yet in sight. The fight is against personal profit, personal desires and indifference, and to win demands courage, tireless persistency and the wisdom of the serpent.

Making the Most of Our Schools

THERE has just been a meeting of the school board in our town. It determined upon many wise acts and listened politely to the advice of the young superintendent who wanted various conveniences for the larger schools and quite rightly got them. What impressed me most painfully was the absence of three members.

There is one district cut off from the rest of our town by a large river. For any railroad connection that will bring the children to a high school they must either cross the river or drive six miles in the other direction. Neither is very possible in our northern winters, so that the children of this hamlet are practically dependent for education on the district school. That little school does well. Even the school board praises it. Well, it asked for a wood-shed, an inexpensive convenience wanted by everyone who has stacked wood in hallways and built and fed wood fires from November to April. The wood-shed was refused: the committeeman for that district was absent!

The moral of this little tale is that if we want to manage our affairs by the self-government method, to which this country is dedicated, we must take time to govern ourselves, or else do without what we want.

He also makes the world better for having lived in it who makes just one blade of grass grow where two weeds grew before.

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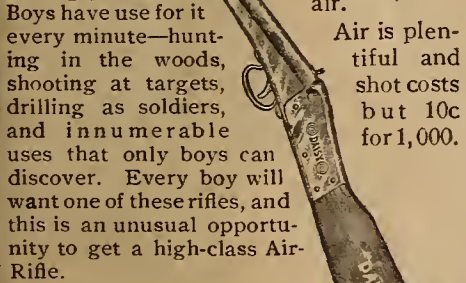
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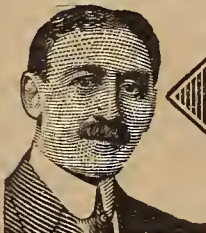
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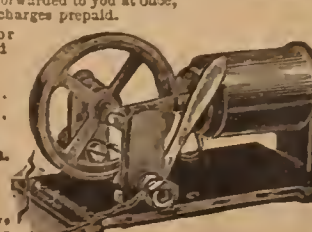
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A Whale-Hunt

The Story of a Boy, a Cannon and a Hay-Pitcher—In Two Parts

By D. F. Getchell

Illustrated by R. Emmett Owen

Part I.

UNCLE JIM! Uncle Jim!" called Bill Messenger from the bank, where he stood pointing with his hay-rake into the bay, "here's a sea serpent or something?"

Uncle Jim stopped the clattering mowing-machine and looked in the direction where his young friend was pointing at a foaming ridge of water rushing across the yellow shining surface of the broad Cobequid Bay.

"By ginger!" said Uncle Jim as he got off his iron seat and hurried over to the bank to watch the mass of boiling water unaccountably disturbing the placid tide. "I believe you've hit it, if there is such a thing as a sea serpent."

Bill Messenger was spending his vacation with old Mr. James Coulter, Uncle Jim to all the boys around. Mr. Messenger, Bill's father, and Uncle Jim had been country playmates years before, and he had asked the old farmer to allow Bill to spend his second high-school vacation on the farm. It was at the head of the tide-waters of the Bay of Fundy, and Bill and Uncle Jim now stood looking over the land-locked Cobequid Bay, into which the tide from the Bay of Fundy rushed twice a day through the narrow rock-bound passage called Allie's Gut.

"Well, 'taint likely it's a sea serpent," said Uncle Jim deliberately, as they watched the yellow ridge of water sweep in a broad circle toward their bluff; "I've heard how there ain't really no such things. There's devil-fish with arms like snakes, and squid, bigger than a hogs-head, with beaks worse than a hen-hawk, and whales longer than my new barn, but there ain't no sea serpents."

"Maybe it's a whale," suggested Bill as a jet of water spouted suddenly up from the rapidly approaching ridge: "whales have to blow, you know."

"Sure it's a whale," a voice broke in. It was old Captain Sam Watson speaking, who had stumped over on his woolen leg from his mowing field near-by. "And what's more, it's a whopper. I reckon I ain't gone whalin' nigh on forty years and had this leg whipped off by a harpoon-line not to know a right whale when I sees one."

"What's a whale doing in here?" inquired Bill.

"That whale don't know any more than you do," returned the Captain, "he's miles off his course and knows it. He'll run aground mighty soon, too, if he don't put his helm hard down pretty qui k."

What Captain Sam said was true. It was a bewildered whale heading straight for Big Flat, that ran far out into the bay from the bluff where they were standing.

On came the monster at a twenty-knot gait, sending a foaming wave in front of his great head. He was soon so close they could plainly see his quick feathery snout as he surged ahead with a kind of plunging motion at every spring of his huge tail. Suddenly he ran clear up on the hard, shelving sand of Big Flat, bringing into view his great black length of almost seventy feet. He was, as the Captain said, a big fellow. But only for a minute was he in sight, for with a tremendous thrashing he rolled back into the channel and disappeared in a mass of yellow foam.

"By Herons!" exclaimed the Captain, "three-hundred barrels at the least! Worth all the hay Salmon Bluff will cut in two years."

"Well, what you goin' to do about it?" inquired Uncle Jim, a little sarcastically. "Goin' to tether him with a pitchin'-rope or spear him with a hay-fork?"

"I reckon we can't get him," said the Captain, "but he'll ground somewhere in this bay sure. He'll never find Allie's Gut again, and it will be just our luck if those Onslow fellows get him."

His reference to the Onslow folks touched a subject deep in the hearts of all Salmon Bluff farmers. Ever since the easy-going Acadians had been hustled off the good bay farms the British successors had waged an endless war with the tides and each other to hold with brush-heaps and breakwaters the shifting mud flats. For it was the rich mud of these flats that rose, if held long enough, into the broad marsh-lands that made the wealth of the tide-water farmers. But, instead of co-operating, the Salmon Bluff and Onslow farmers had built their breakwaters so as to direct the channel against their neighbors' bank and thereby gouge out the mud flats that their opponents hoped to hold.

So when Captain Sam eyed wistfully the whale now headed for the Onslow flats up the bay, jealousy made Uncle Jim as anxious as the Captain, and Bill, already a sworn partizan of the Bluff, was just as anxious as the two men.

Meanwhile different farmers along the

to think of the Onslow people getting that whale. Then, too, the Captain was a kind of leader at the Bluff, and he was credited with a good deal of common sense.

"All right," assented Uncle Jim, "I'll tackle anything from an elephant to a whale if Captain here says so."

"Come then," said Captain Sam, quickly taking command. "a couple of you go up to the schoolhouse and get that old brass cannon hauled down to my shad-boat at the creek."

Then he and Uncle Jim went over to the new barn, and climbing into the mow quickly unshipped the pitching-fork. To the ring of the fork they fastened a stout piece of wire and tied the wire to a stout coil of hemp rope that the Captain had brought home from his last trip. With the help of Uncle Jim and the grindstone under the barn, the Captain soon ground the prong of the fork to a fine edge which he brought to razor-like sharpness with a scythe-stone.

When the brass cannon arrived it was firmly lashed on its carriage in the bow of the boat. Then the Captain poured in a whole horn of black powder, wadded it well with bagging, and putting in his awkward harpoon packed it round with paper.

The shad-boat was a stout craft, and four men, one of whom was Uncle Jim, seated themselves at the oars. Young Bill, as the original suggestor, was allowed to go as helmsman.

While the boat was going out the channel, the Captain was busily engaged in coiling his harpoon-line with great care into a wash-tub; but when they had crossed the bar he stuck his wooden peg into the mast-hole to steady himself and soberly scanned the broad bay for his victim.

It was with difficulty he preserved his calmness as he announced the whale in sight, well up in the

bay, but headed in their direction. When he declared that at least six Onslow boats were out, every Bluff man stopped rowing and gazed anxiously up the bay.

Meanwhile the whale had disappeared. "I reckon he's sounded," observed the Captain wisely, "but he can't get down far unless he bores in the mud."

The rowers now pulled for some time in silence, and presently approached two of the Onslow boats. A loud shout of laughter greeted the Salmon Bluff men when their shining brass cannon came into sight.

"What you doin', Cap?" someone called out from the Onslow boats. "Shoooin' plover?"

"Mindin' my own business," said the old Captain serenely, as he told his men to head the boat farther down the bay.

The Onslow men were following the tradition that a fleet of boats could scare a whale ashore. In fact, it had been done perhaps twice in fifty years. They now poured into the Salmon Bluff boat a volley of sarcastic wit, directed at the harpoon and cannon.

But the Captain disdained to make any further reply to their remarks. "I reckon," he said to his men, "when that whale blows we'll pull bow on him and then I'll—"

No one ever learned exactly just what he intended to do, for at that instant Bill gave a sudden cry.

[TO BE CONCLUDED IN THE NEXT ISSUE]

When a farmer has money, everybody who knows him knows it, and knows how he got it, and approves of the way he spends it.

When we get to the top of the mountain we see the tops of so many other mountains that the world seems to be all mountains. So it is when we live on the mountain-tops of every-day life—we see many other people around us who are on the mountain-tops too.



The Corn Lady

What She Writes to Her Youngest Sister Who is Teaching Her First Country School

THE "Corn Lady," Miss Jessie Field, needs no introduction to the readers of Farm and Fireside, nor indeed to any student and lover of rural life. When she was superintendent of the schools of Page County, Iowa, Miss Field reorganized their curriculum so as to adjust the subject matter of study to the problems of her pupils' lives. Instead of writing compositions about the walls of Pekin, Miss Field's pupils wrote about making the farm prosperous. She put a few of her experiences and beliefs into a book called "The Corn Lady," which the United States Government has ordered for distribution among country teachers. Farm and Fireside is proud to be able to give to its readers a series of letters by the Corn Lady, dealing again with the opportunities and privileges which lie under the hands of the imaginative and purposeful teacher in the farm lands. Editor.

Bellbrook, Ill., August 15, 1913.

DEAR LITTLE SUE—Do you really mean to tell me that you are a grown-up teacher, my baby sister? It seems only yesterday that the nurse held you for me to see. It isn't quite fair that you have grown taller than I, in these few years, but you are my "little sister" just the same, and always will be, even though your arm does go across my shoulders so easily. And big sisters always have the privilege of giving advice. So, my Sue, you are doomed to have a letter from me every little while about this teaching business. You see, I've been teaching country school now for three years, and I like it the best of anything in the world, and I want you to like it just as much. I am writing to you now because there are so many things you need to do before school begins.

Love Your Neighbor

I am glad you are a country girl to begin with, and that you love the farm and are so contented and happy there. I am glad, too, that you have always liked children and had them around you. I hope that a couple of weeks ago you hitched up the horse and drove over to the district where you are beginning to teach and got acquainted with your people over there, and that you went to the schoolhouse and got the register in order to study up the names and classes of your pupils, and to plan for the opening day, and looked around to see that the yard and schoolhouse were clean.

Did you drop in to see the director? He's a fine man. There are people who say he is stingy and all he wants to do is to keep down the school tax, but if you tell him in your own sunny way what is needed and remember that he likes music and is proud of his black cattle and thinks a whole lot of his twin boys, you will find him a friend. Do not talk much yourself as you go to see the different people in their homes, but get them to talk to you of the things they care for most.

Be Bigger Than Your Books

Make every class interesting and full of the joy of study because you are bigger and deeper than the words that are in the book the children are studying. I tried to learn my children's names quickly, for they do appreciate it so much. So I had them just write their name in full in the morning on a small piece of paper, and I had some pins and pinned them on each one. They liked it. I wrote my name and pinned it on myself too. So we were soon friends.

Be sure the schoolhouse is clean and have a bouquet of wild flowers on your desk. I can think what kind you'll have—your own goldenrod that you love so well and that makes me think of you because it is so tall and graceful and golden-crowned.

I hope you have a good boarding-place. Be pretty careful about that, for you see it will make a great difference in your happiness. You know how happy I am where I board, how they are people who care so much about the country and have such a real home. And take your trunk with you, for you'll want just to stay and be one of the neighborhood. You cannot do this if you come home every Friday night.

And, my little Sue, may you love it all as I do. You will find so much you can do for the farms, and for the homes, and for your boys and girls. There is no limit to what we can do in our country schools if we can just make them touch the lives of the people and the every-day work of the boys and girls.

Make School Reach the Home

Of course there will be many hard things come up, but to meet the hard things is one reason why you are there. Whatever you do, never carry your worries home with you at night. Lock everything like that in when you turn the key in the door of the schoolhouse, and walk down the road with a happy heart, free to see and do the things that will make life fuller and better for the people

around you and for yourself. If you do this, nine tenths of the things that worry you will have stolen away when you open the door the next morning, and the other tenth will disappear before long.

What a fine district you have! Remember that it is all a part of your work. That you must teach not only the boys and girls who come to school to you, and teach them in such a way that they will use what you teach them in their every-day lives, but that you must think of every person in your district, and of every farm and every home. And if you are not the kind of a teacher who makes the school reach out to them all until finally everyone thinks not only of doing his level best himself, but of helping along the whole neighborhood, you've missed the biggest chance that a country teacher has.

Have a Farm Corner

One of the first things for you to do is to make every pupil in your school love the country as much as you do, and see something of its joys and privileges and its wonderful possibilities. The boys must see how profitable farming may be, and the girls, and boys too, must see how farm homes are the best place in the world to live. One simple thing you can do right away toward this is to start a Farm Corner in your schoolroom. Have some of the older pupils write for the free farm bulletins published by the Secretary of Agriculture at Washington and by your own state college of agriculture. Ask to be placed on the mailing-list for the new bulletins, and keep up, especially, on the crops of interest to your district. The Year-Book of Agriculture and the Agricultural Census Reports are good for your Farm Corner too. The big girls can classify the farm bulletins, putting them in large envelopes marked "Corn," "Alfalfa," "Hogs," "Home," etc.

You will need a table in your Farm Corner. If you do not have one see if the boys can make one. My boys have made a splendid table. We have a good many farm journals on it, and we collect current events from them, choosing things of special interest to farm people. There are a few beautiful farm pictures in our Farm Corner, and this week everyone is to bring the finest farm product they can find—an ear or stalk of corn, a bundle of wheat or alfalfa, or some fruit, and we are going to fix up our corner to express the beauty of the harvest-time.

A Day For Mothers

The mothers are all invited to come on Friday afternoon and see us. We are going to have our regular school work, for I want them to see how fast my beginners are learning to read, and the work in the physiology and spelling classes. We are writing compositions this week in our language classes on the subject "Farm Life: Why I Like It," and I will have the best one of these from each class read so the mothers can hear them.

One mother said the other day, when I stopped by to see her, "Yes, the country is a fine place to live—when the work is done!" She looked so tired I just thought she might have a happy afternoon down at school, and that's when I thought of having all the mothers come. The girls are going to make cocoa on the school stove and serve it to the mothers, and the boys are going to bring a lot of goldenrod the night before and help me decorate the schoolhouse.

Isn't it just great to be a country teacher and know your district and be able to think and do some things for them and have a real part in making the country all you know it can be?

Lovingly always, HELEN.

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inches wide around can. On this band paint with aluminum name of spice, etc., it is to hold. Punch a hole in cover, and put in a knob. Mrs. G. P. E., New York.

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Designs by Grace Margaret Gould

THE new fashions for the fall and winter show a decided Oriental tendency, also much that is Grecian, Chinese and Russian.

Many of the new gowns are made with an extremely deep arm size, in fact the sleeve starts from the waist-line, the upper part of the garment and the sleeve being cut in one. This is one of China's contributions to the new fashions and is known as the madarin sleeve, a near relation to the kimono. It is a happy fact to-day that when a sleeve, a sash or a skirt drapery happens to be fashionable but not becoming it can easily be set aside and something else substituted. Many of the sleeves are still set into the normal armhole, the length being a matter of preference.

From Japan came the sash drapery and the long Japanese collar, originally seen only on kimonos, but now used on the smartest autumn costumes.

For the loose garments, large waists, draped skirts and short slashed sleeves Greece is responsible.

Almost all of the skirts this autumn show some suggestion of drapery, the skirts being very narrow at the bottom, with the drapery or "stand out" tunics above the knees. Plaits are creeping in quietly, but as yet have not made much of an impression.

The tailored suit is shown in the Russian or Cossack style, and in the cutaway effect, which brings a revival of the waistcoat, an influence of the Louis XV. period. These waistcoats are most elaborate in color and fabric and give a charming finish to an otherwise rather severe-toned suit.

The one-piece dress still retains its popular position and will be worn all through the winter with three-quarter and full-length coats of brocaded, corded and the fashionable fur-finished fabrics.



No. 2201

No. 2238

No. 2362—Waist with Two-Style Sleeves

32 to 44 bust. Material for 36-inch bust, one and seven-eighths yards of thirty-six-inch, three-fourths yard of silk and three-fourths yard of forty-inch lace. Price of this pattern, ten cents

No. 2363—Skirt with Draped Front Tunic

22 to 34 waist. Material for 24-inch waist, four and one-fourth yards of thirty-six-inch material. Width of skirt at bottom in 24-inch waist, two yards. Price of this pattern is ten cents

No. 2281—Topcoat with Notched Collar

32, 36, 40 and 44 bust. Material for 36-inch bust, three and one-eighth yards of fifty-four-inch material, with three fourths of a yard of contrasting material twenty-seven inches wide for collar and cuffs. The price of this pattern is ten cents

Woman's Home Companion Patterns may be ordered from: Pattern Department, Farm and Fireside, 381 Fourth Avenue, New York; Pattern Department, Farm and Fireside, Springfield, Ohio, and Pattern Department, Farm and Fireside, 1554 California Street, Denver, Colorado.



No. 2362
No. 2363

No. 2281

No. 2368
No. 2369

No. 2370
No. 2371

No. 2201—Waist with Long Pointed Sleeves

32 to 44 inch bust. Quantity of material required for 36-inch bust, four and one-fourth yards of twenty-four-inch material, or two and three-fourths yards of thirty-six-inch material, with one fourth of a yard of satin for collar. The price of this tailored waist pattern is ten cents

No. 2238—Vest Waist with Empire Girdle

32 to 40 bust. This waist is especially adapted to the soft fabrics like crepe de chine, voile and chiffon, though it would also be attractive developed in cloth. The girdle and trimmings may be the new Chinese silk, the collar and vest cream net. Price of this pattern, ten cents

No. 2368—Long-Sleeved Waist with Plastron Effect

32 to 40 bust. Material for 36-inch bust, one and seven-eighths yards of thirty-six-inch, or one and three-eighths yards of fifty-six-inch, one fourth of a yard of silk for girdle and one fourth of a yard of linen or baptiste for collar and cuffs. Price of this pattern is ten cents

No. 2369—Three-Piece Skirt: Front Closing

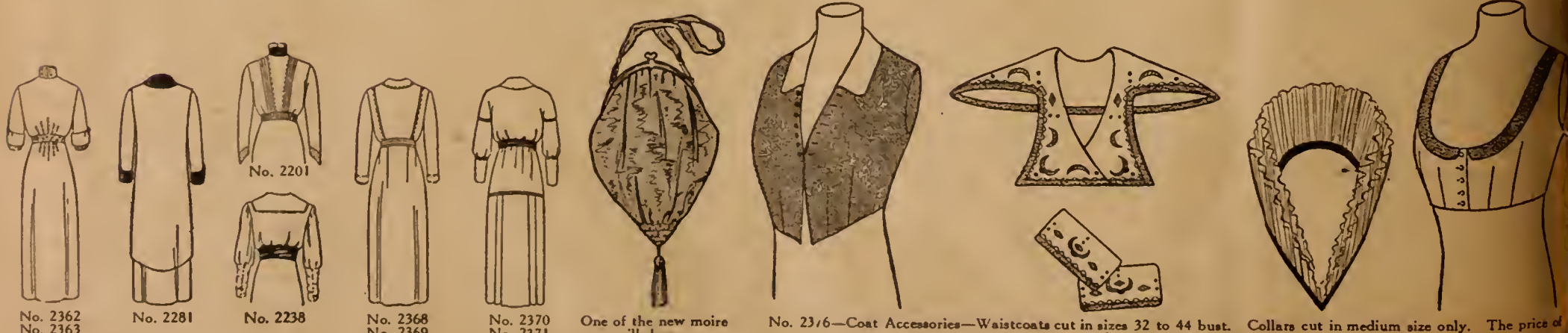
22 to 30 waist. Material for 24-inch waist, two and one-half yards of thirty-six-inch material, or two and one-eighth yards of fifty-six-inch material. Width of skirt at bottom in 24-inch waist, one and three-fourths yards. The price of this plain skirt pattern is ten cents

No. 2370—Drop-Shoulder Waist with Vest

32 to 40 bust. Material for 36-inch bust, one yard of fifty-four-inch material, seven eighths of a yard of thirty-six-inch satin for vest and girdle, and three eighths of a yard of thirty-six-inch contrasting material for collar and cuffs. The price of this waist pattern is ten cents

No. 2371—Skirt with Yoke at Back

22 to 30 waist. Material required for 24-inch waist, two and seven-eighths yards of thirty-six-inch material, or two and one-eighth yards of fifty-four-inch material. The width of this skirt at the bottom in 24-inch waist is two yards. The price of this pattern is ten cents



No. 2362
No. 2363

No. 2281

No. 2238

No. 2368
No. 2369

No. 2370
No. 2371

One of the new moire silk bags

No. 2366—Coat Accessories—Waistcoats cut in sizes 32 to 44 bust. Collars cut in medium size only. The price of this pattern is ten cents

No. 2366—Coat Accessories—Waistcoats cut in sizes 32 to 44 bust. Collars cut in medium size only. The price of this pattern is ten cents

The Influence of the Draped, the Tunic and the Russian Effects

Little Dress Novelties with a Paris Touch

Drawings by Marguerite D. Savage



No. 2317

No. 2316

IN MATERIALS for the autumn and winter the brocaded influence is most prominent. There are entire gowns of brocade, the brocaded pattern showing this season quite as much in wools and crepes as in satins and silks. The idea of having part of the costume a brocaded fabric and part plain is also fashionable and is referred to as the compose idea. Plain wool velvet is combined with brocaded wool velvet, and plain kismet cloth with brocaded kismet.

Plaids, preferably in subdued shades, are fashionable, also materials which show a corded effect. Ratine and eponge are just as much the vogue as last season, and they are frequently combined with self-fabric in brocade.

In silks, crepes and satins are shown the Chinese and the Louis XV. influence, both in color and design.

Fabrics which simulate fur are considered modish, and plushes are again in favor for winter wear.

Many brown tones will be seen this winter. A young tailor in Paris known as Parry started the vogue of using several shades of brown and tan.

It is not only fabrics which look like fur that will be used, but what is known as fur colors will be regarded smart. These are seal, cinnamon-brown, otter and the newest mole shades, some of which have a decidedly brown under tone, and others a shading of green. In greens, Russian green and hunter's green are liked. These dark-green tones are lightened in their trimming by extremely bright shades, such as a striking blue, a bright burnt orange and a vivid rose. If these combinations seem too striking, a light tan called bisque may be used with green; black and blue are also effective.

No. 2356—Waist with Extreme Side Closing
32 to 40 bust. Material for 36-inch bust, two and three-eighths yards of thirty-six-inch material, three eighths of a yard of forty-inch satin, three fourths of a yard of all-over lace, and one half of a yard of net. Price of this pattern, ten cents

No. 2353—Russian Blouse with Large Armholes
32 to 44 bust. Quantity of material required for 36-inch bust, two and one-half yards of thirty-six-inch material, one-half yard of forty-inch contrasting material, and one-half yard of lace. The price of this blouse pattern is ten cents

No. 2357—Two-Piece Skirt: Side Closing
22 to 30 waist. Material for 24-inch waist, two and three-fourths yards of thirty-six-inch, with one-fourth yard of satin. Width in 24-inch waist, one and one-half yards. Pattern, ten cents

No. 2283—Three-Piece Skirt: Side Closing
22 to 36 waist. Material for twenty-four-inch waist, three and one-fourth yards of thirty-six-inch material. Width of skirt at bottom in 24-inch waist, two yards. Price of pattern, ten cents

No. 2317—Blouse with Vest and Flat Collar
32 to 44 bust. Quantity of material required for 36-inch bust, three yards of thirty-inch material, or one and seven-eighths yards of forty-four-inch material, with seven eighths of a yard of thirty-six-inch lace, either in shadow or Cluny pattern. Price of pattern, ten cents

No. 2316—Tucked Blouse with Bib Effect
32 to 42 bust. Quantity of material required for 36-inch bust, two and one-half yards of thirty-six-inch material, or two yards of forty-five-inch material, with four yards of wide insertion and three yards of narrow insertion. The price of this waist pattern is ten cents

No. 2345—Long-Sleeved Waist: Large Armholes
32 to 46 bust. This waist was especially designed for the older woman and is most practical for every-day wear. It may be developed in any dark tone of soft worsted, cashmere or serge and trimmed simply with a band of satin or silk in a contrasting color. Pattern, ten cents

No. 2346—Five-Gored Skirt: Plaits in Back
22 to 36 waist. Width at bottom in 24-inch waist, two and three-fourths yards. This skirt opens directly in front, but the opening is made less prominent by the trimming-band, which should be of the same material as the band on the waist. Price of pattern is ten cents

No. 2349—Vest Waist: Broad-Shouldered Effect
32 to 44 bust. Material required for 36-inch bust, three and one-fourth yards of twenty-seven-inch material, or one and three-eighths yards of forty-eight-inch material, with one-half yard of net for vest and one-half yard of soft satin for the girdle. Price of pattern is ten cents

No. 2350—Two-Piece Skirt: Draped in Front
22 to 34 waist. Material for 24-inch waist, five and one-fourth yards of twenty-seven-inch material, or two and three-fourths yards of forty-eight-inch material. The width of this skirt at the bottom in 24-inch waist is two and one-half yards. The price of this pattern is ten cents



No. 2345
No. 2346

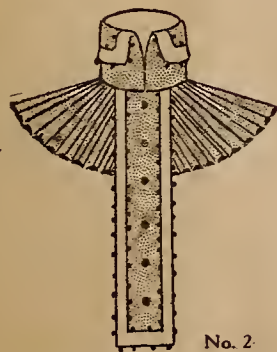
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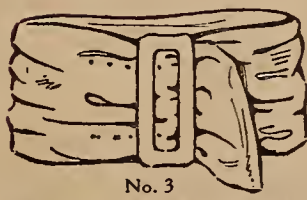
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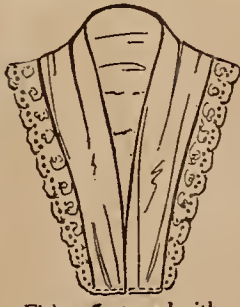
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No. 3



No. 4



Fichu effect used with separate waists



No. 2349
No. 2350



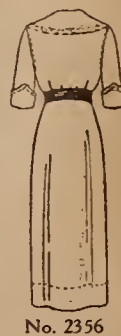
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No. 2346



No. 2317



No. 2353
No. 2283



No. 2356
No. 2357

Making Plain Layettes for Babies

Such Work Solves the Earning-a-Living Problem for One Woman

By Mrs. A. V. R. Morris



I'll Fit You In My New Way at These Little Prices

I make garments to measure for thousands of women who send to me year after year. Each garment is first made to measure in muslin. Then I send it by mail to try on. Thus I secure that perfect fit which belongs to custom-made garments. My prices are:

- Suits . . . \$11.50 up
- Coats . . . 7.50 up
- Skirts . . . 4.00 up
- Dresses . . . 9.50 up

and I pay mail or express charges. There are tailors close by me who charge five times my prices. They offer the same styles, same materials, same tailoring. But they make one suit where I make a hundred. And they fit in person where I fit by mail.

I never gave to women better service than now when I charge \$10 to \$100 per suit. And I never fitted them better than I can fit you by making this muslin dummy.

See My Styles

Ask for my Style Book and samples. This will show you the cream of Fall fashions and fabrics. I will quote you on clothes, made to measure and fitted, just as little as ready-made clothing would cost.

I will fit you just as well as though you came here in person. And no other system can do that by mail. Let me prove this to you. Ask for my book. To you women who seek distinction in dress this shop of mine is a find. Write me a postal to-day.

MENDEZ, Ladies' Tailor, CHICAGO
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Agents Wanted—Part or all time to introduce Queen Fabrics. Our Worker's Outfit and "Helps" assure success to reliable, ambitious men and women. Mrs. George and others earn \$1500 yearly. Write to-day for Agents' Plan.

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This high-salaried and easily learned trade taught thoroughly by mail. We teach beginners letter engraving than can be gained in years of rigid apprenticeship. We also improve the skill of any engraver. Ask for catalog. Free. Engraving School, 25 Page Bldg., Chicago, Ill.

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Enables you to render artistically the world's best music on that masterpiece of piano construction, the Emerson.

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Dealers in principal cities and towns.

EMERSON PIANO CO.
BOSTON, MASS.

MAKING plain layettes for the babies is not a get-rich-quick enterprise," explained a middle-aged widow, as she steadily stitched on a small garment of white long-cloth. "But it's an enterprise that enables me to live in my own home and among the friends with whom I went to district school. When I at first realized that I must henceforth be self-supporting there didn't seem to be any way for me to earn a dollar in this neighborhood. When most discouraged, a neighbor's daughter, who is working in a big dressmaking shop in the nearest city, came home to visit and dropped in to see me.

"Why don't you give it out that you'll make clothes for the babies of women living about here?" she asked. "The average farmer's wife rarely has time to do any dainty needlework, and your plain sewing is just about as perfect as any I've ever seen. You work so rapidly, too, that by keeping rather steadily at it during the day you should be able, after a while, to earn quite a bit of money every week. Moreover," she added, "sewing on white doesn't try the eyes, so whenever you're rushed you can work evenings."

"But," I objected, "the women who would let their babies wear the sort of clothes that I know anything about can make the little slips and skirts and blaukets with their own fingers."

"Not this generation of mothers," replied the neighbor's dressmaker daughter. "Needlework like yours is almost a lost art. Very few young women hand-sew decently nowadays. For the past twenty-five years the daughters of farmers have been going in for higher education and attending college or state normal schools listening to lectures on philosophy, science and logic from professors instead of stopping at home learning housekeeping, cooking and plain sewing from their mothers. If they're engaged to young farmers these girls manage to learn a little something about housekeeping and cooking before getting married, but most of their sewing is done with a machine. The higher-educated girls who don't return to the farm after they've been graduated work in offices and schools almost to the day that they marry some city man, and so they don't know anything about fine needlework. But, as a nicely brought up young woman detests the idea of putting machine-made clothes on her baby, she worries herself half sick trying to do that which she doesn't know anything about. Now, believe me, any one of these women would gladly pay fifty dollars for a plain layette made by hand of moderately fine materials. And it will be easy for you to start such a business,

as the young farm wives living near here will be able to see for themselves what you can do with a needle, and they'll be glad to recommend your work to any friends they have in the city, and, if possible, they'll get orders for you. Women of the right sort are always delighted to take advantage of an opportunity to help some other woman to help herself."

"The neighbor's dressmaker daughter knew what she was talking about when she proffered her advice. After I had made a few very simple, cheap layettes consisting of six dresses, six petticoats and six nightdresses in cambric, three flannel 'barrows' (the old-fashioned term for a petticoat made without a waist and in a flat piece, buttoning down the back and on the shoulder), two oning flannel kimonos or wrappers, three dozen cotton diapers, three undershirts of wool and cotton, four abdomen strips of pinked flannel and three pairs of knitted worsted bootees, two young mothers asked me if I couldn't make them layettes of materials that were a little finer. They were the wives of prosperous farmers who could afford to hire indoor help, and they had time to take their babies visiting. But they wanted a flat price for an outfit. I promised to submit within a week a total price for a specified number of pieces and then I hurried into town to seek counsel of the neighbor's dressmaker daughter. That evening we figured the cost of everything that the baby of moderately well-to-do farm

parents needs to start life with and found that a layette consisting of the following articles could be made up at a cost of thirty dollars: 8 dresses (4 in batiste and 4 in dimity), 4 petticoats (cambric), 4 nightgowns (cambric), 4 petticoats (flannel), 2 kimonos, or wrappers (outing flannel), 4 abdomen binders (4½ inches wide by 20 inches long, of fine, soft flannel, edges pinked), 4 undershirts (fine wool, interwoven with a little cotton) and 4 dozen cotton diapers. For winter baby, 2 coats (cashmere, silk-lined and wadded), 2 caps (white faille or corded silk), or, for summer baby, 2 coats (corduroy, unlined), 2 caps (white lingerie), 1 carriage-pillow case in white lingerie, 2 pairs of bootees (knitted silk) and 2 pairs of bootees (knitted Saxony). This sum allows for a little hand embroidery—I do that sort of work very rapidly and easily—on the yokes of the little dresses, for hem-stitched borders on the cambric petticoats and for feather-stitched hems on the flannel petticoats and kimonos. The remainder of the layette is absolutely plain, but its every piece is hand-made and dainty looking. Most young mothers prefer that sort of wardrobe to one that is elaborately trimmed with machine embroidery and machine-stitched.

"While I was working on my first order for the above-listed layette, the neighbor's dressmaker daughter wrote advising me to watch the city newspapers for advertisements of 'white sales,' 'fauncl sales,' 'floss and worsted sales,' and never to neglect a chance to pick up fabrics suitable for coats and caps. She added: 'There's small risk of loss on such materials because babies never will go out of fashion.'

"During one of my shopping trips to the nearest town I saw a baby's basket lined with white chiffon, trimmed with pink satin ribbons and real Valenciennes lace and fitted with a hand-carved ivory toilet-set that was labeled 'Only \$100.00.' That basket was so lovely that my fingers positively ached to make one precisely like it. So I looked about the shops for some plain wicker hamper and bought a gross of them on speculation.

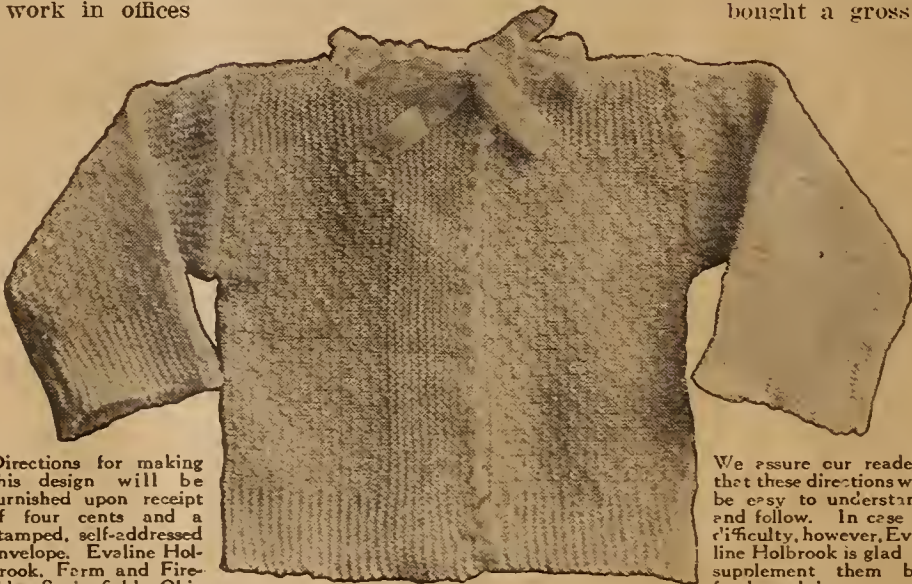
By painting one of these baskets with white enamel, lining it with white dotted Swiss or colored silk-lace and fitting it with celluloid toilet-articles, I produce a most attractive-looking imitation of the hundred-dollar hamper, and one which I can sell, at a fair profit, for fifteen dollars.

"So far I've never lost a dollar in this layette business. Nor have I ever been obliged to wait an unreasonable time for my money. Who would not be fair with the woman who dressed her baby?"

A Knitted Sweater Jacket

That May be Made for a Child or a Grown Person
By Evaline Holbrook

ALTHOUGH shown in infant's size, this little garment is so simply shaped that it may be made to fit any size. It is a practical little garment for little girls up to ten years, and may even be worn by grown-ups. Nothing could be daintier or more useful for an invalid who most of the time must receive her friends in bed or in a chair.



Directions for making this design will be furnished upon receipt of four cents and a stamped, self-addressed envelope. Evaline Holbrook, Farm and Fireside, Springfield, Ohio

We assure our readers that these directions will be easy to understand and follow. In case of difficulty, however, Evaline Holbrook is glad to supplement them by further advice.

The Country Child's Lunch—By Elizabeth L. Gilbert

THERE is no more important question before the careful housemother just now than that of the school lunch.

It must be remembered each baking-day, and thought of as she prepares her day's menu. And if she really has given it this much thought her child will have a clear brain and a sound digestion even after nine months of "school lunches."

Too much stress cannot be laid upon variety; appetite cannot help but fail if the same food combinations confront the child four days out of five.

Here are some food combinations and recipes which have over and over been proved satisfactory. For the Monday dinner some of Sunday's "extras" are saved.

Monday—White bread sandwiches, thickly buttered, cold roast chicken, tomatoes (salad dressing in glass, tomatoes to be sliced at school), grapes and cake.

Tuesday—Nut bread (buttered), deviled eggs, Lima beans (in glass), peaches and cookies.

Wednesday—Meat sandwiches, nut bread (with peach butter in glass), pickles, lemonade, cookies and apples.

Thursday—Baking-powder biscuits, buttered, fried chicken, potato salad (in glass), drop cakes and grapes or apples.

Friday—Brown bread (fruit filling), chipped home-cured dried beef, rice pudding (in glass) and a bottle of grape juice.

The white bread is baked in long, deep, one-loaf pans on purpose for sandwiches. The salad dressing is made on Saturday, and if kept in a cold cellar or in an ice-chest, only one supply a week need be made. The recipe follows: One cupful of vinegar, one tablespoonful of butter, one tablespoonful of salt, two tablespoonfuls of sugar, one teaspoonful of dry mustard and four well-beaten eggs. Mix the dry ingredients well, then stir them smooth with two tablespoonfuls of water. Let the vinegar (with butter) come to the boiling-point, stir in the flour, sugar, etc., mixture, also the beaten eggs. Cook until quite thick, pour into pint jar, and put in cool place. When needed take as much cream as you have of the dressing, whip the cream, and then combine the two.

The nut bread can be baked at supper-time the night before needed: Three cupfuls of white flour, three cupfuls of Graham flour, two beaten eggs, one-half cupful of sugar, four teaspoonfuls of baking-powder, one cupful of chopped nut-meats (hickory-nuts or English walnuts), four cupfuls of cold water and

one level teaspoonful of salt. Pour into a large, well-greased pan. Let it stand for one hour. Then bake in moderate oven one hour. Very nice.

The deviled eggs should be boiled hard for twenty minutes; then let stand in cold water overnight, shell, and cut in halves crosswise. Mash the yolks, adding just enough butter and vinegar to make the consistency of mashed potatoes. Salt and pepper to taste, a bit of chopped pickle and nut-meats or meat make a good addition. Stuff the whites, press the halves together, and wrap in paraffin paper.

The potato salad is easily made. Boil a medium-sized potato for each child. Have ready a small onion, chopped. Mix the onion with some of the prepared salad dressing, cut the potatoes into cubes, and mix all together.

Brown bread: Two cupfuls of sour milk, two cupfuls of Graham flour, one cupful of Orleans molasses, one-fourth cupful of sugar, one pound of raisins (seeded, washed, dried), one teaspoonful of soda, dissolved in milk, and one teaspoonful of salt. Steam in greased one-pound baklug-powder cans for three hours. Make sandwiches of these round slices, using steamed prunes or figs for filling. No cake is needed that day.

IN FRONTENAC CAVE

[CONTINUED FROM PAGE 16]

and then a piece of tree-branch almost struck me as I paced back and forth like a wild beast in a cage. Next I saw light, and soon the hole was open and a voice called:

"Are you down there?"

"Yes," I joyfully shouted back.

"Shall we let down a rope for you?"

"No," I returned. "Liverpool has got the Captain. Come down with enough men to rescue him and catch the whole gang."

After a few minutes I heard a voice call. "Look out for me—I'm coming!" and a man who proved to be one of the well-drillers came dangling down at the end of the bucket-rope.

"Have you folks been down here ever since you disappeared?" he asked, looking at me in the blindest astonishment.

"Yes," I said. "We came down this same hole, but our rope washed in with the rain, and we couldn't get back."

He called up for other men to come down, and told me that Sheriff Milron had been sent for. Men kept coming down till there were some twenty-five of them, all very much astonished, and to them I told my story in as few words as possible. Many of them had guns, and when the sheriff came he ordered more let down, with plenty of lanterns and candles. Then he came down himself, and after a few sharp questions, to which I gave him answers sharp enough at least, we made a start, I at the head, with the sheriff, to show the way.

I shall not say much of our trip, since anyone who has read this account so far has gone through Frontenac Cave quite enough times (and too many I fear), so I will simply say that we went by the way of the Trap-Door and Rope Pit, going down the pole. We then took the pole to Dauphin's Pit, since I suspected there would be no other way to get up; so after all it served its purpose at this place, and more, carrying up twenty-seven men instead of three.

The sheriff told me that the guard had been kept up at both mouths of the cave, the other having been found since we had come down, so he did not doubt that we should find the men still in the cave. But I feared greatly for the safety of the Captain.

We went on from Dauphin's Pit with great caution, and soon the sheriff and I scouted ahead. We got sight of the Fort, and though the fire was low and no candle burning we could see that most of the men were asleep, with two on guard. I counted them eagerly, but could make out no more than seven, all told, and feared more than ever for the Captain.

Sheriff Milron brought his men down very skilfully, I thought, and at a signal they all rushed forward, each with his gun ready and the head ones carrying lanterns. The men on guard shouted and made as if they would shoot, but when they saw the number of our party they dropped their weapons and threw up their hands. This a little surprised us, for Liverpool was not the man to surrender under any circumstances; but it was explained when the sheriff called for him and the nearest man said gruffly: "Ike Liverpool is dead."

Then I dived forward to a man who was rolling over in his blanket, and it was Captain Archway; and I felt so weak and foolish that I thought I might as well sit there on the ground a while and pretend I was tying up my shoe, though I wore boots, but the tops being cut off made them not so unlike shoes after all.

The sheriff first took off the Captain's handcuffs, slipping them on the nearest outlaw; then he put others on the rest of the gang, and a pretty sick lot they were too. Our men all shook hands with the Captain, heartily enough you may be sure, for most of them knew him well and had been sure he was dead. I missed Dauphin at first glance and asked the Captain of him.

"Dead," he answered, shaking his head, but with a kindly tone in his voice. "Neither he nor Liverpool ever got up after they fired. It was the end that might have been expected to the kind of life Dauphin had led, but if it was fit for Liverpool, then Dauphin deserved something a little better, for he was not so bad a man."

The Captain went on to say that he thought Liverpool's death was all that saved him after our attempt to rescue him, as when the others lost their chief they became frightened and seemed afraid to risk a desperate step.

The sheriff decided to take his prisoners out by way of the mouth of the cave, but the Captain wanted to go out as he had come in, by the Sink-Hole, partly so

that he might see the well which had broken into our Bedroom. There was another reason why he wished to go out that way, and when he had told me what it was I think that Sheriff Milron and all his men could not have taken me out any other way. When we were a little apart from the others the Captain said:

"Another thing, Jud, folks will be expecting us at the Sink-Hole, and I think Amy will be there. Some of the neighbors will bring her out, I am sure. Poor girl, she must have been terribly worried all this time."

Three or four of the men went with us and were fast to see everything in the cave, but as for the Captain and me, we had seen quite enough of it, and only cared to stop for a look at the well-hole. The Captain would not forgive himself for not having guessed the sound we heard.

At Sink-Hole Dome there were men waiting to draw us up. First the Captain went, then I. Half-way up a bat under the ledge squeaked at me, but as he unhooked himself and slid down into the pit I told him it would be many a long day before I bothered him and his kind again; which it has been.

When I reached the top and scrambled out of the hole, helped by a dozen hands, I found myself blinking in the midst of a crowd of people in the sink, for, though the sun was near setting and I faced the east, the light, to me, was dazzling. Then suddenly I made out the Captain a few feet away and Amy with her arms around his neck. The next instant she turned from him to me, holding out both hands, which I was fast enough to take. I think neither of us said one word at this time, but we both knew how glad we were to see each other.

So there is no more to tell of our adventures in Frontenac Cave. We got back to Hawk's Landing, where people looked at us as if we had just dropped from the moon instead of having been not ten miles away. I suppose I might say that in the week I stayed at Hawk's Landing before I left for home I spent a great deal of the time with Amy. We sat in the Captain's yard many hours, and went walking together often, and she seemed never to grow tired of hearing me tell of the days the Captain and I passed in the cave.

As for the robbers, they got what the law was waiting to give them, and went to State's prison. Sheriff Milron found all the money taken from the bank and much plunder belonging to other people. The bank paid the reward honestly enough. I knew then, and know yet, that the Captain deserved three quarters of it: but what would he do?—not one thing except take a half and make me take the other half, so I could do nothing else. And it came in very handy at home too, where I soon took it, and where I stayed for a while, you may be sure, my desire to see the world being well satisfied, having, as I used often to tell folks, seen enough of the inside of it at least. So I gave the money to my father, and he used close to every penny of it in sending my brothers and sisters and myself to school, though I might as well confess that the first vacation I went out to Hawk's Landing to see Amy; and while I am confessing I had best make a clean job of it and say that I kept on going about as often as I could for four or five years, by which time, having left my school days well behind and gone to work for myself, Amy and I were married there at the Captain's home where I had first seen her.

But in all these years I have never so much as gone into Frontenac Cave since that day we came up the pit, though the dear old Captain and I used often to say laughingly that when they got electric light in it, and velvet carpets on the floors, and elevators for the pits, and all the squeaking bats in bird-cages we might run in some day for an hour or so; which they never did, so we stayed out.

[THE END]

Summer and Autumn

By R. H. Stoddard

THE hot midsummer, the bright midsummer.

Reigns in all its glory now:

The earth is scorched with a golden fire, There are berries dead-ripe on every brier

And fruits on every bough.

But the autumn days, so sober and calm, Steeped in a dreamy haze.

When the uplands all with harvests shine.

And we drink the wind like a fine, cool wine—

Ah, those are the best of days!

Fall
and
Winter
1913-14

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10,000 ordered in 30 days

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Brewster green, edged with lighter green striping and neatly trimmed in polished nickel and aluminum. It has a full cowl dash.

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Cowl dash	Electric horn
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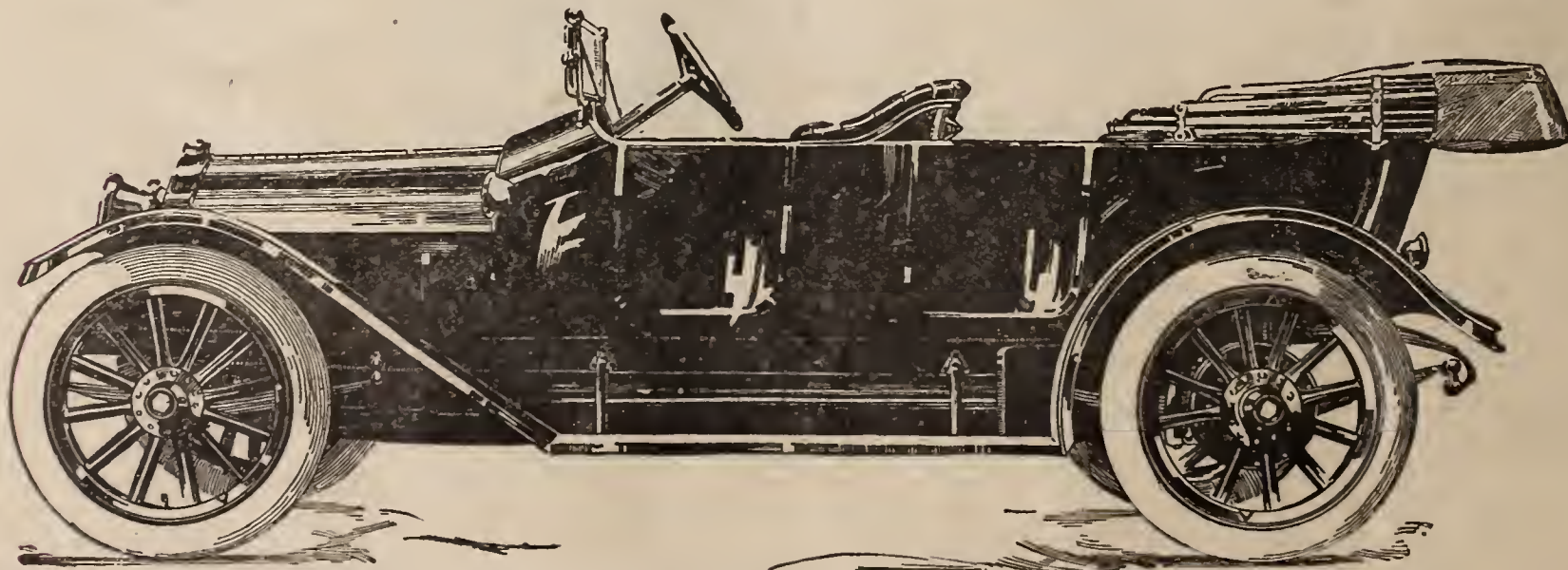
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FARM AND FIRESIDE

EVERY OTHER WEEK

THE NATIONAL FARM PAPER

SATURDAY, SEPTEMBER 27, 1913

5 CENTS A COPY

BEAUTIFUL picture, isn't it? Really it is a view of two persons—a photographer and a farmer. The photographer knew *his* business; the farmer evidently did not. Instead of seventeen medium-sized peaches, eight well-developed ones would have been better. The market price for such a lot would have been higher, and the vitality of the tree conserved.



DON'T MISS THESE GOOD THINGS SOON TO COME!

WITH THE EDITOR

ADVERTISEMENTS IN FARM AND FIRESIDE ARE GUARANTEED

Miss Stedman's New Story!

Adelaide Stedman is FARM AND FIRESIDE's own story-writer. We discovered her, when she wrote for us that story remembered by all our old readers, "Poor Relations."

Telephone Troubles?

Perhaps your telephone has been working all right. But from letters that reach FARM AND FIRESIDE some phones must not be well constructed.

Veterinarians and Veterinarians

There are many. They need to be studied just as much as do the diseases they aim to prevent and cure.

Getting the Price We Want

We can't always get the particular price we want at the time we want it, but if we have some way of keeping our products salable for a period of time we'll win, that's all!

"The Con Man in the Country"

You'll smile over this story by Elliott Flower. It tells of a grafter who thought all country people "boobs" and got the worst of the deal.

Buffum on Saddle-Horses

There's a whole lot of difference between a horse that will carry a saddle and a real saddle-horse. David Buffum knows all about this and tells it for horse-lovers and horse-users.

For the Women! Something New!

A new department, the "Experience Bazaar." A bazaar is a place where trading is done. Here is where the women exchange experiences.

The "Corn Lady"

Miss Jessie Field is the greatest country teacher in the world. In these letters she discusses the vital things of the common schools; she tells of the "new kind of rural school."

Moving Pictures for Sunday

The process of learning has been transmuted in this generation from dull and heavy lead to shining gold. The avenues of the senses have been opened.

Are the Bankers Grafters?

I have had on my desk for some time a letter from a reader at Crisfield, Kansas, in which some fault is found with the fact that the money distributed by Secretary McAdoo for the purpose of moving the crops went to the banks instead of the farmers.

I would like to say a few words about the condition of many of the farmers in this part of Kansas. The majority of them are in debt to the banks or the loan companies. They depend on the crops to pay, and, the crops failing, they are unable to pay.

When we look into the \$50,000,000 they say the Government is putting into the banks for the use of the farmers, we find that is only giving the banks more money to squeeze the farmers with.

If the money can be furnished the farmers without going through the hands of bankers and other grafters, and without too much red tape, we would say let us have it by all means.

I Don't Envy the Banker

It isn't fair to call the bankers grafters, for they are not. In the main the bankers are not to be envied. I would not be a banker for all they get out of it.

It is perfectly easy to laugh at this man and say that the Nation and the State are neither of them in the money-lending business. It is perfectly true that Secretary McAdoo did not send out the \$50,000,000 direct to the farmers.

It is all a matter of loans either. Our Crisfield friend probably had a good crop of wheat this year, which he will sell, or has sold. When he takes a load of it to market he gets a check at the elevator, which he takes to the bank, and the bank gives him the money.

I have a good deal of my land in tomatoes, which I am canning myself. I have to buy cans, solder, tips, machinery, and the like, and I must pay my peelers, packers and other help in cash.

The Money in the Bank is Ours

And right in the midst of this writing I get my daily paper—the Washington Times. My eye falls on the following news item:

Paris, France, August 25th. The Minister of Agriculture to-day formally introduced a bill in the Chamber of Deputies asking that the sum of \$500,000 be set aside by the government to be apportioned to farmers whose crops have been destroyed by droughts, floods, etc.

You see? The government of France is actually doing—for the bill of the Minister of Agriculture will pass or the Cabinet will resign—exactly what this Kansas farmer says his government should do.

The Nation is Poorer

Here's the point: Our banking system, and not our bankers, is to blame for the fact that millions of farmers are not able to get loans when they should have them.

Herbert Quick

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Springfield, Ohio, September 27, 1913

PUBLISHED
BI-WEEKLY

One experienced swine-grower states that ground barley is not as good for pigs at the weaning stage as it is for more mature hogs. Have any of our readers had trouble which they believe came from feeding it?

Kerosene in Motor-Cars

EVERYONE is interested in cheaper fuel for the internal-combustion engine. Those who are not directly interested in automobiles are apt to be buyers of fuel for other engines. Our attention is attracted, therefore, to the report of a recent automobile trip of four thousand miles with motor-cars driven by kerosene. One of these drivers is Ray Harroun, the well-known professional automobilist. The report is that each of two cars made this long trip at an expense of \$6.50 for fuel. It is said that Weston, the walker, wore out a hundred dollars' worth of shoe-leather in the same trip from coast to coast! Every one who uses a gasoline-engine has been hoping for something cheaper. And here's hoping that 1914 will bring us what we want.

Millions in It!

WE LEARN from an exchange that Mr. George Snively of Maryland has succeeded in grafting the tomato-plant on a potato-root. The plant is bearing a good crop of tomatoes, and down in the ground the potatoes are promising a fine yield. This interesting bit of Burbanking will bring joy to the roll-top desk farm writers. They will be able to show more millions in farming than ever before. Old-fashioned methods will become obsolete, when we can plant a crop the south half of which will be potatoes and the north half tomatoes. Both are good crops. Both are staple. They require about the same sort of culture. Most of this duplex crop will be grown in the magical farming region of Backtothelandia, where a fair turnout of potatoes is five hundred bushels to the acre, and tomatoes about the same. Made into catsup, the tomatoes should bring in at least a dollar a bushel; sold to city customers, twice that. The five hundred bushels of potatoes, thoroughly washed and polished up, with perhaps the grower's monogram etched upon them, should not bring a cent less than a dollar a bushel—in Backtothelandia. Here is a net income of fifteen hundred dollars—or, to be conservative, say twelve hundred and fifty—to the acre.

Then see what the intensifier can make in selling grafted plants to the neighbors. All he needs for this is a city lot and a few cold-frames. He can establish a specialty—as all Backtothelanders should do. The cost of living will go down. The standard of living will go up. We predict great things for the pomato—as we take the liberty of naming this double crop. A great future—in the magazines, where the slogan of the roll-top gentry is "farm your land on both sides!"

Crowning King Corn

THE drought of this year is responsible for the fact that in some localities corn is selling for more than wheat. But the cheaper grain has for years shown a tendency to creep up on its ancient rival. We need not be surprised if we live to see the time when corn will generally sell as high as wheat.

It is worth as much as a food or a feed as wheat—judged in food units. It is stronger in fat-making elements, and not quite so strong in protein. Under some conditions it is not as valuable as wheat, but under others it is more so. And in digestibility and that mysterious quality which makes a thing agree with the animal eating it it has proven better than wheat. Why, then, should it sell for less? Because up to this time it has been more cheaply grown and has not been so widely used as human food. But it is growing in popularity both at home and abroad as food for men, and will some time sell for its food value.

Moreover, the adoption over the corn belt of the wheat-corn-clover rotation, or some similar one with alfalfa as the legume, is cutting down the acreage of corn and increasing that of wheat. This is a growing tendency, and a good one. It is even necessary for the maintenance of fertility. And it seems sure to narrow the spread between the prices of wheat and corn. If the time comes when a feeder will feed either wheat or corn as his stock need it, it will not be a bad thing. Corn, however, is more than ever King.

The Plucky Fight of a Professor of Dairying in Oklahoma

SUCCESSFUL agriculture is not a peaceful occupation. It has never been so except to those who refuse to fight even when just cause demands fighting. The Pilgrim fathers and the first settlers in the West were all fighters. The idea of peace in the farmer's life is untrue.

Down in Oklahoma there is a man by the name of Roy C. Potts, who is professor of dairying in the state agricultural college at Stillwater, and he has had a fight on his hands most of the time since he went there. He saw the efforts of the dairy farmers to organize being crushed by the moneyed interests, so he took up the work of helping them, and he is fighting for them yet.

He believes in co-operation among farmers, and the owning and managing of co-operative creameries by the farmers themselves. When he went to Stillwater seven years ago he found a small creamery being operated in connection with the dairy work at the state agricultural college. The big creamery companies of the West, who controlled most of the cream-buying in the State, considered him a thorn in their flesh. They told him, in their own business way, that a creamery was unnecessary at the college. They naturally wanted Oklahoma reserved for the big centralizing companies, which paid the farmers the lowest prices for cream that they would take. Many times they tried to cut off the cream-supply from the college creamery by offering as much as four cents per pound more for butter-fat at Stillwater than they were paying in surrounding towns. Cream stations were put in by the centralizing creameries and flattering offers made the patrons of the college creamery if they would sell their cream to them.

Many of the patrons of the college creamery were already familiar with price-manipulation as it has always been practised by the larger creameries, and therefore stayed with Professor Potts, as they knew what would happen when the college creamery closed its doors. For several years the college creamery set the price for cream by paying all that it could afford to pay, which was often three to

four cents more per pound for butter-fat than the card quotation of the big creameries. About one year ago a new plan of operating the college creamery was adopted, and now it permits the big creameries to set the price for butter-fat, and it simply meets their price. If the college creamery finds that it could have paid more for cream than it has, it does so in a quarterly cream dividend, and during the past year over eight hundred dollars has been paid out in quarterly cream dividends to the patrons of the college creamery.

In order to meet the new competition of the college creamery paying a quarterly cream dividend, some of the big creamery companies buying cream at Stillwater have promised to their patrons monthly cream dividends. They state that they are obliged to do this in order to hold their cream patrons who, having but little interest in local enterprise, are willing to allow their cream to be shipped away.

Professor Potts did not try to make trouble. He saw that there was a great problem to be worked out in the operation of farmers' co-operative creameries. When the big creameries began to make

trouble, he couldn't avoid meeting it without giving up his belief that the farmers' creamery offered the best market for the farmers' cream.

He has done much alone and on his initiative, and also with others, in working out the cream-marketing problems. He enlisted the support of the legislature, which enacted laws helpful to the dairy business. He was instrumental in getting an anti-trust law passed to control manipulation of cream prices. He has encouraged the organization of cream-shipping associations in places where there was not cream sufficient to warrant a farmers' co-operative creamery. These cream-shipping associations pool their cream and bargain collectively with the big creameries in selling it. Finally they will build their own co-operative creamery.

Professor Potts has never budged an inch from his first stand. He minds his own business, has no press-agent to exploit his work and is one of the best friends the farmers of Oklahoma have.



The man who didn't budge

Just because salt is good for most animals, including yourself, don't laugh at the person who tells you that it is poisonous to chickens. Half an ounce of salt may kill a chicken, and an ounce is almost sure to kill it. Salted meat, salt fish or any salted food is unfit for fowls. The arsenic in sprays will kill them if it gets upon anything they will pick up and eat. The lead and zinc in wooden pails may kill them also.

The Burden of Wheat-Growing

WITH wheat selling for less than ninety cents in the terminal markets, the wheat-growers in the corn-wheat-clover States may well ask themselves what there is in wheat for them. The best farmers of the eastern wheat belt have long grown wheat, not because they were able to see profit in it, but because there was no other crop which fitted as well into the generally adopted rotation of wheat, corn and clover. In spite of the question as to whether or not wheat pays, its culture has extended with the adoption of this rotation. A few years ago wheat was an almost negligible crop west of Indiana and east of Kansas. Iowa grew almost no wheat. But with the adoption of the three-year rotation Iowa is again becoming a wheat State.

A progressive Ohio farmer once said to the writer that he would give a good deal if someone would tell him how he could get rid of wheat-growing and still keep up a rotation with a legume in it.

Alfalfa seems to point the way out for those who are so situated as to grow it, and most of us are.

Alfalfa may be profitably left undisturbed for several years. The corn and alfalfa rotation is therefore a slower one than the prevailing system. If a part of the corn is husked the combination of corn, corn-silage and alfalfa-hay is the ideal fattening ration for cattle. If all the corn is ensiled a concentrate like cottonseed-meal must be bought to balance the ration of alfalfa-hay and silage, but every pound of it will enrich the manure. And the burden of wheat-growing will be reduced, if not altogether done away with.

This Year

THE Kansas corn crop is almost a total loss through hot winds and drought. The same conditions lap over into Oklahoma, Nebraska and Missouri. The Nebraska Agricultural College advises the farmers to use all that is usable in silos; but a corn crop burned up in July won't make much silage. As to all the fields which mature a part of a crop, the advice is sound—and of course those are the fields meant. We have no dependable reports on the crops of milo maize and Kafir-corn, but no doubt these crops went through in much better shape than did corn. Both these sorgho crops make good silage. Their grain yield under the same conditions is not as valuable as a good crop of corn, but it is better than a drought-stricken corn crop.

The Con Man in the Country

Floating a Bond Issue for Consolidated Farms and a Model Town—A Story

By Elliott Flower

BENJAMIN BABBITT rode out to the Baird farm in the largest and brightest and fastest touring-car that he could hire. There being nothing imposing or impressive about Babbitt himself, he sought to have his accessories in all business matters of a nature to create the desired impression. This was a business matter, and both the automobile and the chauffeur were accessories. They reflected prosperity. So did his tailor-made clothes, his jewelry, his alligator-skin bag, everything that he wore or carried. Yet there was nothing of ostentation in him with regard to any of these things; you simply realized, without particularizing, that he had the best.

As for the man himself, aside from these accessories, he was quite inconsequential—just an ordinary man of a little less than average size. In only one thing—his imagination—was he the least unusual, although a natural attribute of that glorious imagination was a convincing enthusiasm in painting for others so much of what that imagination showed him as he thought it best for the others to know.

Before his imagination could make any impression upon those he wished to impress, however, it was necessary to gain and hold their attention, and he had discovered by experience that an appearance of prosperity—conservative rather than flashy—would do this better than anything else. So the lurid haberdashery and excess of jewelry that might have suited his own taste were lacking when he turned into the lane that led to the farmhouse.

An elderly woman, industriously wiping a tin pan, appeared at the kitchen door before Babbitt could reach the front door.

"Who yeh want?" she demanded.

"I wish to see Miss Baird," answered Babbitt.

"Important?" asked the woman.

"Yes," returned Babbitt.

"I'll ring for her," said the woman.

Babbitt was surprised and puzzled. Here was something new! He had planned and expected to make an impression, and he was calmly asked if his business was important. Then he was told that they would ring for her—ring for this farm woman that he had expected to find busy in the kitchen or peeping out of a window at the immaculate man and his immaculate car! She was a young woman—he knew that—but there was an airiness about this being summoned if the matter were of sufficient importance that—

Then he laughed, for the elderly woman was ambling out to a post back of the house, and on that post there was a large bell. So she was summoned from the field instead of her boudoir, as the titled Babbitt had supposed! That was quite a different matter.

The bell clanged loudly three times as the elderly woman pulled the rope. Then the woman ambled back to the house. "She'll be here soon," she announced. "Come in?"

"No, thank you," replied Babbitt. "I'll sit out here in the car."

He was glad he did, for otherwise he would have lost that first view of her.

She came on a horse, riding astride, with a rather scant bifurcated riding skirt, a blouse waist and a felt hat to which a single small feather gave its only feminine touch. And she was good to look at—in the early twenties, with the color and grace and health that come of an active outdoor life, combined with the confident independence of the woman who has discovered, or thinks she has discovered, that she can achieve success unaided.

Babbitt sprang from the automobile to assist her in alighting, but she was on the ground as soon as he was.

"You wish to see me?" she queried.

"I do," he replied. "Permit me to introduce myself. I am Mr. Babbitt—Benjamin Babbitt of Chicago."

"Ah, yes," she returned: "and I am Miss Baird—Alice Baird of Saskatchewan."

It was quite evident that he himself, his automobile and his name had all failed to make any impression.

"Mr. Redding, my agent, informed me that you wished to see me," he suggested.

"I don't know how Mr. Redding, your agent, got that idea," she rejoined. "I'm sure I never expressed any such desire, although if I can be of service to you—"

"Perhaps I put it too strongly," interrupted Babbitt. "I got the impression that you wanted me to explain the Consolidated Farms proposition."

"Too strong yet, I think," she commented. "I somehow got the impression that you wished to explain it. I was of the opinion that I already understood it, but Mr. Redding thought not."

Babbitt discovered that, in spite of himself and his accessories, he had been placed at a disadvantage, for the interview must now be avowedly of his own seeking. However, he must make the best of the situation as he found it.

"I do," he admitted frankly: "I'm quite anxious to explain it, for I believe I can make you see what a great thing it is! I thought Mr. Redding had interested you—"

"He did," she confessed. "I found him most interesting."

Somehow this did not sound right either. While she said "interesting," her smile seemed to indicate

that "amusing" was the correct word, and a business proposition, to be convincing, should not be amusing.

"If interested," he argued, "you must be open to conviction, and I'd like to explain to you—"

"Shall we go in the house?" she interrupted.

"As you please," he returned with a deferential bow.

"Well," she decided, "I am just enough of a farmer to like to sit on a fence-rail and chew a straw when I'm considering a business matter."

Tying her horse, she mounted to and seated herself upon the top rail of the fence. Her trim bifurcated riding habit made this neither a difficult nor an awkward task. Babbitt, following with the alligator-skin bag that he had taken from the car, found it both awkward and difficult. The chauffeur, watching, turned his head away to laugh, for Babbitt, balancing himself on the top rail and the bag on his knees, was decidedly comical. He realized this himself, and it also occurred to him that the girl was deliberately making the situation as awkward for him as possible. How could he be impressive on top of a rail fence? How could he be emphatic and enthusiastic when a gesture might topple him over? How was he to show her the plans he had in his bag? How could an uncomfortable man on a fence-rail convince anybody?



"It's great! It's superb! It's wonderful!"

"Now that we're comfortable," she suggested, "you might proceed."

Unquestionably she was laughing at him, and a ridiculous man is never convincing.

He deliberately climbed down from his perch, put his bag on the ground, opened it, took out a rolled map, and then faced her. But he had improved the situation little, if at all. He was now in the position of a dignified advocate addressing a fence-rail court—a picturesque court, it was true, but still an unconventional fence-rail court. However, he must do the best he could under the circumstances.

"These farms—" he began, unrolling the map.

"Never mind that," she interrupted. "I know them better than you do. I know that you want to combine them in one farm. But what's the advantage?"

"Advantage!" he repeated, striving for the enthusiasm that never had failed him before, but that was now unexpectedly difficult of attainment. "There are dozens of them. Take economy of operation, for instance! The one great farm can be worked for at least a third less than the dozen smaller farms. We save the duplication of farm machinery, of farm buildings, of almost everything a farmer uses. That means increased profit of course."

She nodded, and he was encouraged.

"Then," he went on, "the farmer gets a double profit, for he gets pay for what work he does on the big farm in addition to his share of the annual profit."

"That sounds very nice," she commented.

"Nice!" he exclaimed, beginning to gain the enthusiasm that had eluded him. "It's great! It's superb! It's wonderful! It's the biggest thing of the age! When people see how it works out here, consolidated farms will be the rule everywhere! I mean to consolidate a few elsewhere myself."

"This is a long way from Chicago," she remarked. "Why didn't you begin nearer home?"

It was a very simple question, but it troubled him for a moment. He had prepared for it of course, but there was something in the way it was asked that was disquieting. However, he explained quite frankly that conditions were not just right for it everywhere; that a comparatively new country was the place to begin, for where land was high and farms fully developed people were naturally more conservative and wanted to see the plan worked out elsewhere before they would try it.

"As a matter of fact," he declared. "I did not come here for the purpose of launching this scheme. I have had the idea in mind for some time, and while making a pleasure trip through western Canada it seemed to me that I found exactly the right conditions here."

"Go on!" she said. "We are all to live in town, I believe."

"Oh, yes, of course," he replied. "That's one of the finest features of the plan! We shall have a town of our own—a model town! There will be community life and pleasures quite impossible for the individual farmers. No more of insanity-breeding loneliness for the farmer's wife. That should appeal to the women."

"Yes," she admitted, "it does—to most of them. But why not have this town on a railroad?"

"My dear Miss Baird," he replied impressively. "there is no need of putting the town on a railroad, for a railroad will come to the town."

"Oh, it will!"

"Most certainly. The town will be important enough to justify it as soon as we have the consolidated farms in operation. At the same time the railroad will be of less importance to us than that it is to you now, for our automobile trucks will get our grain to your present shipping point in half the time and for half the expense."

"Automobile trucks!" she repeated. "Mr. Redding didn't mention anything of that sort."

"An unreliable fellow!" complained Babbitt. "I was sure he had not presented the matter in a proper light. Automobiles are a most important detail of the plan. We shall need them to get workers to distant fields as well as to bring in the grain. We shall have many of many different kinds. Still a railroad that touches our town will be of great benefit, and we shall have that also."

"A railroad," she returned, "has been coming here ever since we came, and it hasn't got here yet. However, never mind that now. Possibly you are right in thinking this will bring it, but I've learned not to believe much about what a railroad is going to do until it's done. How about the management of this great farm though?"

"That," explained Babbitt, "will be just like the management of any other great corporation. There will be a general manager in full charge, subject only to the board of directors, and such assistants or department managers as he may need. Because of the magnitude of the undertaking and the large capital available we shall be able to get the very best man possible for this responsible position—a man who can do more with one acre than the average man can with six. Give such a man as that free rein and improved machinery, such as we can buy, and what the land will produce will make a fairy tale look like a dull recital of commonplace facts."

"It's a beautiful dream!" she remarked musingly.

"No dream at all!" he declared. "It's a simple business proposition. Let me illustrate: Jones has a farm within the district we have marked out for our scheme. Jones turns his farm in to the corporation at an agreed valuation and receives capital stock of that par value in exchange. Jones abandons his farm home—although he can keep it if he wishes—and moves to our model town, where he has a model house with all modern improvements and a social life that is quite impossible in the country. Jones gets his share of the profits of the great farm, and he can work on it or not, as he chooses. If he works, and we think most of the men will prefer a certain amount of work to idleness, he is paid liberally for what he does. You see, he is really paid double—dividends and wages. We expect to employ other help of course, but we believe most of our farmers will choose to continue in the field."

The girl nodded. "But where will you get the money for all this?" she asked. "Your new town and new equipment will call for a pretty big outlay of ready cash. That's where Mr. Redding was rather indefinite."

He bowed in recognition of her astuteness. "Redding is rather a superficial young man, I am afraid, and gained but a superficial knowledge of the subject," he remarked deprecatingly, although the real fact was that he had failed to be altogether frank with that young man himself. "I am glad to find you so wisely cautious and businesslike," he went on, "for there is nothing in this to conceal. I am ready, even anxious, to explain everything. The money needed will be raised by the sale of additional stock. We must have money of course, and a good deal of it, to get such a big undertaking running [CONTINUED ON PAGE 10]

Grain-Saving Cribs, Bins and Granaries

Rat-Proof Store-Houses of Ample Capacity That Can be Provided at Low Cost

By B. F. W. Thorpe



Fig. 1—The big barrel crib. Compare its size with the barrels in front of it

MANY of us grow and harvest grain with infinite, painstaking labor and expense, then store it with utter disregard for its safety. Uncle Sam has never attempted a reliable rat census, but, taking the country over, we no doubt have a rat population of twice or thrice the hundred-million mark which is approximately our human population.

Some of our expert figuring sharps have arrived at the conclusion by different processes of reasoning that a round hundred million dollars' worth of grain is destroyed annually by rats. This tidy sum is approximately sufficient to feed and clothe a hen for each man, woman and child of our republic and outlying territory. To put it differently, each family of five could keep a little flock of five hens in place of its allotment of a dozen rats. The five hens, with the good care usually accorded the small flock, could be counted on to furnish fifty dozen strictly fresh eggs for the home larder annually, which, at thirty cents per dozen, plus five chicken dinners when the birds go to the block, gives a total of \$18.

A Big Tax Might be Made a Bigger Income

Let me put this big financial proposition still differently. Two or three hundred million chicken-killing, disease-carrying rats cost us an annual grain-tax of five dollars a family. If exterminated and their living turned over to a half or a third as many productive hens, each family, instead of a five-dollar tax, would have an eighteen-dollar income. This would be equal to a credit balance of \$360,000,000 for the Nation. It looks as if our rats have something of a corner on grain, doesn't it?

Our rat population will thrive and multiply just so long as we continue to harbor and feed them in ramshackle cribs and granaries and furnish them haunts under wood-floored buildings, junk-piles and other secluded hiding-places in which to multiply.

Concrete floors and foundation walls and supports of the same material or of solid masonry, together with metal or wire-screen lined bins and cribs, will solve the rat problem. Keep the rat in the open, bar his grain-supply, and he will be down and out.

Following are some types of cribs and bins that are giving complete satisfaction.

The Big Barrel Crib

Figs. 1 and 2 show the construction and appearance of the big barrel or stave type of crib. This is perhaps more easily and cheaply made than any all-wood structure of equal durability and general convenience that we have yet examined. It is merely a big barrel-like container with hoops on the inside instead of on the outside.

The staves are one-by-four boards and are nailed to the wooden hoops. The hoops are made by building up one-half-by-four-inch boards, well nailed, using four thicknesses and breaking joints. The crib illustrated is used by the Wing brothers, whose farm has previously been mentioned in FARM AND FIELDSIDE. The crib is fourteen feet in diameter with air-shafting in the center about twenty inches in diameter. This type of crib could be made with a diameter of sixteen to twenty feet and still cure the corn if the air-shaft in the center were enlarged in proportion.

The roof is made from one-inch boards sawed diagonally from corner to corner. The points are all placed together, forming a cone, and the roof is then shingled water-tight.

These cribs are placed on concrete supports, encased in galvanized iron to prevent the rats from climbing them. No skilled labor is required in making them. When the photographs were taken at the time of the alfalfa "boosting" convention last summer, the cribs contained corn stored in them since the preceding harvest. Each one cost \$55 and holds four hundred bushels.

Steel Bins for Small Grain

A number of steel bins for small grains are now on the market which are rat, rain, fire and burglar proof. These steel bins, such as illustrated in Fig. 3, are provided with portholes for filling, spouts for loading, manholes and ventilator in roof, and metal floor if desired. In capacity they vary from a few hundred to several thousand bushels. The cost of storage capacity per bushel of these metal bins varies from about twenty cents per bushel in bins of one hundred to two hundred bushels capacity down to eight cents per bushel in bins holding two thousand bushels or more. Some metal bins are constructed for the double purpose of storing grain and for smoking meat, when not occupied with grain.

The Small Movable Crib Saves Labor

Where corn is fed to cattle, hogs and poultry in yards or pastures, a portable crib, see Fig. 4, made to hold one hundred bushels or less will be found a convenience under some conditions. If built on skids and so constructed as to be readily transferred to trucks in dry weather, the feeding may be so distributed as to keep the feeding-lots more wholesome, the manure

better distributed and prevent the molding of corn which sometimes occurs when a wagon-box is used for the purpose. Needless to say, the portable crib should be constructed of light and strong material.

All-Wire-and-Metal Crib

The all-wire-and-metal crib, shown in Fig. 5, is comparatively a new type of storage for corn, its manufacture having been begun two or three years ago in Springfield, Ohio. Other quite similar wire cribs are being manufactured in different parts of the country. The base supports are placed on concrete pillars extending from four to ten inches above ground, according to surface level. Some of the concrete base supports have bolts embedded in them so that the crib can be bolted securely to the concrete supports to safely anchor it. Where large stones are available they can be used for supports. Whatever is used should extend below the frost-line to prevent getting the crib out of alignment by frost action.

Forty or fifty bushels of corn were in this crib when the photograph was taken on the Joseph Lefel farm, Clark County, Ohio. The unchecked circulation of air through this wire-enclosed crib and the complete absence of lumber to hold moisture allow the most rapid curing of the corn thus cribbed. Corn that is comparatively green will cure with less danger of spoilage loss in this type of crib than any other. This form of crib structure can be made with driveway between and a roof over all when two rows of cribs are desired.



Fig. 2—Showing the doorway and ventilator of the barrel crib

Combined Crib and Granary

The structure shown in Fig. 6 was photographed in the heart of the corn belt. It is used for the storage of corn and small grain, and has a capacity of 8,000 bushels, storing 4,000 of each. The building is forty-eight feet long, thirty-four feet wide, with eighteen-foot posts.

The corn is stored in slatted bins extending each side of the driveway. The storage for small grain is over the corn-bins and driveway. The building is provided with an elevator that distributes grain to any part of it. By means of an appliance connected to the elevator and hoisting machinery, a wagon-box loaded with grain is raised at one end, and the grain runs from the tail-gate into the elevator without shoveling or lifting. There is also a platform scale close to the elevator for convenience in weighing. Power for operating the elevator is furnished by horses, though an engine would do equally well. The entire floor and wall foundations are of

concrete. The roof is red tile, and the neatly painted exterior makes the building attractive as well as satisfactory for a farm where a large quantity of grain is raised. The cost of the building exclusive of labor, several years ago, was about one-fourth cent a bushel for its entire storage capacity.

An Excellent Crib—But

The crib shown in Fig. 7 represents a quite common form of wood-constructed crib, lumber of the best, substantially framed, siding surfaced and put on in vertical position, well roofed, convenient door and entrance, well painted in red and neatly trimmed in white. It stands as an ornament to a most attractive collection of farm buildings. The only lack is permanent concrete foundation supports suitable for a crib of such permanent construction. The present wood supports are about ready to buckle down and ruin the crib. Had concrete

supports been used, this crib would have lasted a generation or more. The crib in the photograph is sixteen by eight feet, with posts twelve feet high in front and ten feet in the rear. It will furnish storage for corn and small grains for a one-man farm where an average stock of horses, cattle, hogs and poultry are kept.

Other Practical Cribs and Bins

Excellent devices for the expeditious storage of grain to save repeated handling are the large canvas containers described in FARM AND FIELDSIDE, issue of August 16, 1913. They are particularly adapted for use in dry climates where grain can safely remain in the open for weeks without danger of getting wet. The canvas container will become indispensable, as its merits become better known, for numerous purposes in both arid and humid sections.

Not yet on the market, but what seems to be a workable proposition is an airtight, deep metal tank of small diameter which can be used for storing grain or silage for poultry.

Concrete farm storage for grain is looked on with suspicion and with good reason unless abundant air-circulation is provided. Some concrete-block cribs, made with plenty of ventilation openings, have been made of the double parallel crib type, the covered driveway providing tool-storage space. These concrete cribs can be made absolutely vermin-proof by means of an overjutting ledge. They can likewise be made quite ornamental in appearance, and the cost of construction need not be appreciably greater than that of a first-class wooden or metal crib.



Fig. 3—Steel bins for small grains



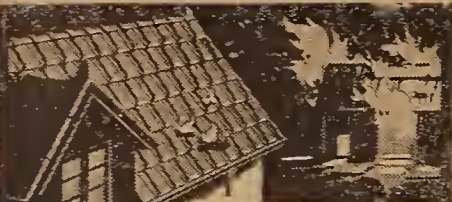
Fig. 4—Movable crib for the feed-lot



Fig. 6—Combined crib and granary

Fig. 7—A good crib except for the wooden foundation

Fig. 5—All-wire-and-metal crib



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The Headwork Shop

The Page That Saves an Extra Hired Man

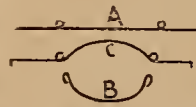
Private Feeding Pen for Pigs



THE drawing shows it better than words. Make the opening twelve to fourteen inches high and two or three feet long. Put a bolt through the lower end of the movable board. Let the upper end work behind a slat hocked out a little from the corner of the pen. Plant the posts, and make it permanent, or set them on the ground, and it will be portable. Leave the board down until the feed is in the trough, then lift it and insert a pin in hole under it. The pigs get in, and the sows stay out.

D. A. McCOMB.

For the Crawling Cow



THREE old hay rake teeth will make two light yokes that will keep the cow in the pasture. First straighten the teeth and bend two of them as shown in sketch A. Then twist sideways to the shape shown in C. Then bend one half as in B to fit ring and complete yoke. This is light, humane and effective.

L. S. WEBSTER.

One-Man Sack-Filler



CUT a hole 8 inches square into the side of the grain-bin. Nail a strip up and down each side 1 inch from the hole. Nail another strip over each of these, allowing them to extend 1 inch for slide-door grooves. Under the hole nail a chute (B) made of boards 15 inches long. Now cut a strip (C) 2x24, a strip (D) 3x24 and a strip (E) 7/8x2. Put the slide (A) into its place, and make a slot in C so the slide will work without binding when C is raised. Also make a small hole at F. Take out the slide door, and drive a heavy nail through its top from the back. Put slide (A) to its place and strip (C) over it, and nail it loosely to the wall at G. Cut out hlock (L) 6 inches high by 8 inches long at base, and make a bole 1 inch from the top for a spike nail and the same size through the middle of strip (D). Nail a foot-rest on each end (KK). Now lay strip (D) on the floor so the hole at D will be under the hole at F. Put hlock L on the floor so its hole will be opposite the hole in the middle of D, and nail it to the floor 2 inches from the wall. Drive a spike through the hole in L and then through D into the wall. Now drop the slide (A) to the bottom of the chute,

and the end of lever (D) to the floor, and with two little stove-holts strip (E) to the hack at F and D. To use it work KK with the feet. To make it safe when not in use put a wooden pin in a hole in the wall above F.

D. A. McCOMB.

Making Collar Fit Shoulders



CUT a hole on the hame side of the collar, as shown in sketch. Take out a handful of stuffing, and sew up again. Make a good dent on the opposite side for the shoulder-bone to fit in, and it will not become sore. Make the right and left side the same. This method of making a collar fit over the shoulder-bone is good for both old and new collars.

JESSE RAHN.

To Make a Rope Halter



THE sketch shows how a cheap, simple and strong rope halter can be easily and quickly made. Take a piece of one-half-inch rope, any length from ten to twenty feet. Make a loop (A) on one end. Next make a common knot (C) about two feet from same end. Then place end through loop (A) and back through lower part of knot (C).

This halter can be made in one minute and requires no more rope than any other rope halter. The knot (C) makes it the best rope halter I know of because it can be made large or small by simply drawing B through knot C. B goes over head, D in front of nose, E under lower jaw and F is to lead or tie with. If used in stable, tie leading rope (F) to rope E; this keeps an animal from rubbing halter off.

W. R. BURNS.

Corn-Stub Smasher



TAKE two planks two by eight inches by ten to eighteen feet long, according to the size of your team. Wire or chain them together as in the drawing.

When the ground is frozen drag this over your corn-field, driving a little angling across the rows so it will not strike the hills too much in bunches.

This heats any stub-breaker we have ever used for leaving the field smooth.

D. A. McCOMB.

Headwork Winner

The first-prize contribution in the Headwork Shop in this issue is, "To Make a Rope Halter," by W. R. Burns.

Crops and Soils

Potash from Seaweed

By Harry N. Holmes

AMERICAN scientists in the search for a source of potassium salts that shall lower the price to farmers and make us independent of Germany have found great encouragement in the Pacific seaweeds. A peculiar variety very rich in potassium taken from the ocean grows in enormous patches along the California coast.

Already two attempts have been made on a commercial scale to extract the potash from this plant and both are past the experimental stage. One company works up forty tons of kelp per day and extracts twenty to thirty per cent. potash from the dried weed. The kelp is gathered from the beach, dried and burned on an open hearth. No fuel is required and potassium chloride is obtained from the ashes. Some sand is, of course, mixed with the product picked up in the process of gathering the kelp.

The other company sends out a large into the floating masses of weed and secures the material with a special cutting device free from sand. The dried product is not burned in the open, but heated in closed retorts by petroleum fires. This dry distillation process is analogous to the making of coal-gas, tar, ammonia, coke, etc., by distillation of soft coal, and in similar manner yields a variety of products. One ton of dried kelp yields 550 pounds of potassium chloride, 200 pounds of potassium sulphate, 5 pounds of iodine, 200 pounds of other fertilizing materials and 45 pounds of gum, creosote and waste. The outlook is most promising.

Shocking Corn Correctly

By A. J. Legg

IT IS not unusual to see many corn-shocks leaning and perhaps a number of them down before the corn is dry enough to be husked. This is usually the result of careless work at cutting-time. In order to stand up well the corn-shocks must have a good foundation to build upon. This is made by setting up one armful of corn,

drawing in four hills of uncut corn and tying firmly. Always set the bunch up straight in the middle between the hills drawn in so as to insure a foundation in the center of the shock to be set up. Then the corn must be set so as to be well distributed around the foundation bunch. The shock should spread slightly at the bottom so as to have a rather large base to stand on.

Some persons unknowingly start the corn-shock to leaning by pressing themselves against the shock when tying it. This should always be avoided. The shock should be drawn together at the top and firmly bound together by two bands. Do not be afraid of tying it too tight, as the hands will loosen as the stover cures out.

If the work is well done very few corn-shocks will fall down before husking-time. It pays well to be careful in setting corn up, since fallen shocks are always damaged, and many of them contain only moldy and rotten corn if they are left on the ground.

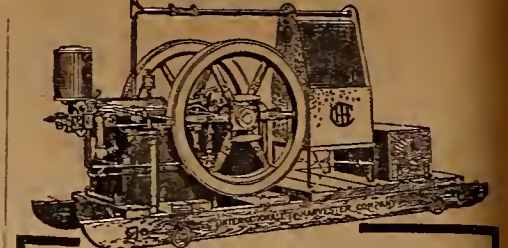
Mouse-Proof Granary

By James P. More

THIS mouse-proof granary is built on cement blocks or stoues. Under the sills and on top of the blocks is placed a piece of sheet iron or tin; this keeps the mice from



the building. The steps are hung on hinges, and can be lifted and hooked to ropes hanging in the awning. I have used this plan, and have never been troubled with rats.



Once Upon a Time

Once there was really no way out of it for the farmer. Plodding home from the field, he saw before him the waiting jobs about the house, barn and yard, jobs that took time and labor, and never seemed to end. But that was once upon a time. Today he lets the engine do those jobs.

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Live Stock and Dairy

Starting a Balky Horse

By David Buffum

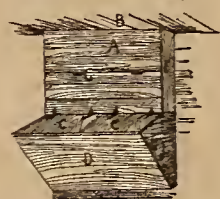
THE balky horse requires radical treatment. Whipping is of no use, as the whip, while it certainly punishes and in some instances is useful, is powerless to compel obedience. You must show the horse that, notwithstanding his superior strength, you can handle him.

First, however, I would recommend a little strategy. Have a foot-line on your horse, tied around his foot between fetlock and hoof and passed up through the belly-band and back into the wagon. (Of course your belly-band and foot-line must both be strong; do not forget this.) Now, when the horse balks, pull up his foot and hold it for quite a while so as to get him weary of standing on the other leg. Now release his foot and start him up (that is, if you can). Perhaps you can, and perhaps you cannot, but give it a fair trial.

If this does not work, take your horse out of the wagon, and strip off all his harness. Put on a halter in place of the bridle. Tie the hair of his tail into a hard knot. Run the halter rope through the hair of his tail above the knot, draw it until his head is pulled well around to his tail, and fasten with a half loop that can be untied by a single jerk. Now touch him up behind with your whip, and he will begin to turn around in a circle. Continue this treatment until he is dizzy, but do not, if you can prevent it, allow him to fall down and hurt himself. Now, while he is still dizzy and dazed, harness him as quickly as you possibly can, get into the wagon and start him off. You may use your whip, if you wish, when ordering him to march on, but do not strike him more than once. In nine cases out of ten the horse will start after this treatment. If he does not, take him out of harness at once, and repeat the treatment, turning him this time the other way. The two points to remember are, first, that the horse must be made thoroughly dizzy, and, second, that you must use the greatest expedition in harnessing him and starting him up before he recovers from his dizziness. The treatment will cure the worst balker if only applied with the judgment and "horse-sense" for which it is impossible to give instructions.

Feed-Box Keeps Full

By Paul Melotz



THE box keeps full of feed as long as there is any up-stairs. First nail boards (A) on the studding of the building. B is the ceiling of the barn. Nail flooring for a cover (C), and put it on with hinges. Make the front (D) and the end (E) strong. The studding (F) of the barn forms the sides. G is latches to catch door when open. H is the sill of barn. Have the feed up-stairs in a large bin made for it. The saving of feed and the cleanliness of it pays for the trouble of making the box.

To Cure Tail-Rubbing

By Dr. A. S. Alexander

"WILL you please advise me what to do with my mare to keep her from rubbing her tail? Have her in a box stall; have doctored her for worms; have scrubbed her tail with yellow soap and rubbed it with salty lard several times, etc., but she continues to rub it, and is gradually cutting the hair off near the root of the dock. Had same trouble last spring, but not during the summer." That is a part of a letter received from an Ohio reader.

As the mare you speak of is kept in a box stall, put a wide plank on brackets, shelf-wide, around the inside of the stall at such a height that the edge of the plank will come against her hind parts slightly below the tail. By this plan tail-rubbing

will become an impossibility. Make her work or take abundant exercise every day. Treat the rubbed tail as follows: Scrub clean, and dry perfectly; then pour on and rub in a mixture of equal parts of kerosene and machine-oil. Repeat the treatment as often as found necessary. Reduce rich feed, and add carrots or other roots to the ration. If the trouble persists mix one dram of granular hyposulphite of soda in the feed night and morning.

My own experience with horses for the saddle is that it is best to keep their feet pared down to proper size and to shoe rather lightly. DAVID BUFFUM.

Can't Throw 'Em Out

By Wm. Granger



NO MORE rounding up of the stalks when this simple device is used. It took me only half an hour to make it.

Throw the hay or stalks in the manger, hook up the shelf, and the cows cannot throw them out. The shelf is made of one board the length of the manger, and wide enough to reach to the top of the cow's beads. Fasten it to the manger with two hinges. Nail a two-by-four from manger to ceiling, and drive a large staple in it. The shelf can then be hooked up.

Use the Chute

By Clifford E. Sternberg

A LARGE number of farmers, though having overhead feed-bins, persist in shoveling the grain up into bags. A better way is to cut an eight-inch hole in the middle of the floor, inserting a square chute long enough to reach to within thirty inches of the basement floor. The slide should be about a foot from the lower end. A handle should be attached, so that the slide can be worked easily. Nails driven from the inside out and sharpened hold the bag in place. For ground feed a tapering chute should be used.

Silo Economics

By Ralph Brown

NO DOUBT many brother farmers without silos spend some of their leisure time thinking of the advisability of building one. I would advise such men to visit a few silo farms and watch the feeding of the silage and study the merits or demerits of the various silos. Here are a few of the advantages of a silo:

Silage can be stored in one fifth or one third the space required for the same tonnage of hay or fodder. This saving of storage means much in this day of costly lumber.

One acre of good land will yield on an average two tons of hay valued at thirty dollars and costing three dollars to cut, cure and store, leaving a balance of twenty-seven dollars. The same acre, in a corn-growing section, will yield ten tons of silage valued at forty-five dollars and costing six dollars for storage, leaving a balance of thirty-nine dollars; twelve dollars more than the hay.

Corn cut, shocked, left to dry and husked is brought to the feeding lot with twenty-five per cent. of its feeding value lost. Silage is rarely subjected to a ten per cent. loss, and usually less than five per cent.

Crops can be placed in a silo during weather when it would be utterly impossible to make hay or cut and shock corn.

When a farmer realizes that about one third the feeding value of a corn-plant is in the stalks which are made palatable in a silo and practically lost otherwise, he will see where the silo is an economizer.

Silage keeps the digestive system in good condition, keeps young animals growing and thrifty, and produces better and cheaper beef than dry feed. It creates a keen appetite—a valuable asset in dairy cows.

When a man has a silo he knows just how many cows he can keep on a given number of acres. For example: a cow eating forty pounds of silage each day will consume about eight tons in one year, the average amount of silage produced on one acre.

Twenty acres of corn would supply the silage for twenty cows for one year. Of course silage is not a complete ration and must be supplemented by grain or other concentrated feed.

A silo will put the small farmer on his feet. Silage makes possible a saving of ten cents per day on a cow's ration. If you feed ten cows for two hundred days, you will have saved two hundred dollars on your feeding bill as compared to other rations. Ten cows feeding for two hundred days will require a forty-ton silo. A concrete silo of such capacity can be built for about one hundred dollars. That means something to a farmer. But that is not all of the problem. It has been proven by test that corn cut and stored as silage will yield thirteen per cent. more milk and eleven per cent. more butter-fat than an equal amount of corn cut and fed as dry forage.

Make Your Lame Horse Sound, Like This

You Can Do It While He Works.

We want to show you that there isn't any affection that causes lameness in horses that can't be cured, no matter of how long standing. We want to send you our instructive book, "Horse Sense" No. 3.



It describes all. And with the book we want to send you an expert's diagnosis of your horse's lameness. All this is absolutely free. Simply mark the spot where swelling or lameness occurs on picture of horse, clip out and send to us, telling how it affects the gait, how long animal has been lame and its age.

We absolutely guarantee Mack's \$1,000 Spavin Remedy to cure Spavin, Bone or Bog Spavin, Curb, Splint, Ringbone, Thoroughpin, Sprung Knee, Shoe Boil, Wind Puff, Weak, Sprained and Ruptured Tendons, Sweeney, Shoulder or Hip Lameness and every form of lameness affecting the horse. We have deposited One Thousand Dollars in the bank to back up our guarantee. Cures while he works. No scars, no blemish, no loss of hair.

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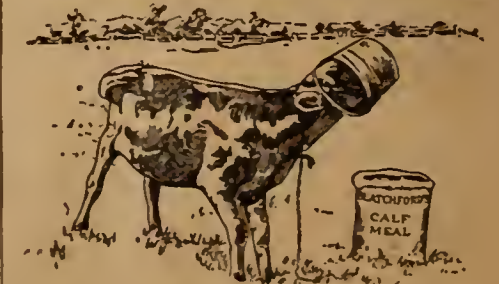
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Death to Heaves
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Coughs, Distemper, Indigestion.
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50 Lbs. for Heaves.
At druggists or sent postpaid.
THE NEWTON REMEDY CO., TOLEDO, OHIO

"Licks the Bucket Clean" Blatchford's Calf Meal

As good as New Milk at half the Cost.



100 pounds makes 100 gallons of Perfect Milk Substitute.

Send for pamphlet, "How to Raise Calves Cheaply and Successfully Without Milk."

At your Dealers or

BLATCHFORD'S CALF MEAL FACTORY
WAUKEGAN ILLINOIS

Poultry-Raising

Some Barred Rock Records

An Egg-Production Breeding Experiment That Shows Remarkable Results

By B. F. W. Thorpe

THE breeding of heavy-laying poultry is attracting new converts every year. Both the organized public egg-laying contests and the private tests by individuals clearly bring out the fact that any one of a half-dozen varieties of chickens can be made about equally productive if a heavy-laying strain is developed by making use of the right system of selection and breeding.

A good illustration of success on a small scale now being achieved in breeding heavy, continuous layers has come to light in Mr. H. S. Mathewson, of Massachusetts.

Only a small number—a dozen or two Barred Rock breeding birds—are kept, on account of Mr. Mathewson's advancing years, but his results secured in egg production are equal to those of many who keep several times as many hens.

The foundation of his flock of pure-bred Barred Rocks was purchased seven years ago, and all of his hens have been trapped steadily from the start.

The best layer of the first generation bred by him laid only 166 eggs in her pullet year. Mr. Mathewson has since succeeded in breeding a pullet that laid 260 eggs in twelve months. The same hen continued laying after the year was completed, bringing her total egg production up to 305 eggs between molts. Her molt that year was delayed until January.

After molting this hen again began to lay the last day of February following, and laid thirty-three eggs in the next succeeding thirty-nine days, when an accident cut off her egg-laying career April 7th.

On the Egg Job Six Years

This strain of Rocks developed by Mr. Mathewson is proving unusual in respect to continuing heavy egg production late in life. His star performer to date in this respect is Queen Bess.

During her productive life of six years to date her record is as follows: 1907 (pullet year), 154 eggs; 1908, 195; 1909, 224; 1910, 196; 1911, 142; 1912, 98. This is a total of 1,015 eggs in six years, an average of 169 eggs annually. In her third year she laid 224 eggs in 261 days. Her eggs average twenty-six ounces to the dozen.

Another hen, a year younger, that promises to do about equally well, has produced as follows: 214, 188, 168, 148, 146—an average yearly production of 172 eggs against 183 for Queen Bess for her first five years of laying.

As an indication of the high uniformity of production of the birds of his breeding note the following performance: thirteen pullets in 1911 laid 2,595 eggs, an average of 199 eggs each. None of these pullets laid less than 150 eggs in their first year of production. The best producer among these pullets laid the 260 eggs previously men-

Late molting has been found to be unerring indication of heavy egg production and is always considered by Mr. Mathewson in selecting his breeding stock. Needless to say, the feeding and care given to these productive birds leaves nothing essential lacking for their comfort and requirements.

A scratch feed composed of two-thirds oats and one-third other mixed grains, which are varied according to season, and a dry mash of wheat-bran, ground oats and barley, corn, gluten, alfalfa and oil-meal,



Mr. Mathewson and Queen Bess

also meat-scrap, pulverized charcoal, grit and oyster-shells are never lacking. Green succulent feed is as regularly provided as the grain feed.

Mr. Mathewson attributes his success to the fact that he is "always on the job" and knows his birds intimately.

In recognition of this success of Mr. Mathewson's, FARM AND FIRESIDE is preparing to mate some females of his breeding to a pedigreed male bred by Dr. Raymond Pearl. This cockerel has breeding qualifications that it is expected will insure unusually heavy egg production from seventy-five per cent. of his get, when bred to females of ordinary production and correspondingly higher yield from stock of specially heavy-laying propensity.

During the present season Barred Rock hens of the FARM AND FIRESIDE experiment yards, descended from the famous Maine Experiment Station stock, have been mated to the male bred by Doctor Pearl. One of these hens produced 217 eggs in her third year of production.

Green Cut Bone

By T. Z. Richey

IF ONE would have the hens do their very best, animal food must be fed in some form. Green cut bone is perhaps the best, as well as the cheapest, animal food. In localities where it can be purchased regularly, and in sufficient quantity, it will pay any poultryman to invest in a bone-cutter.

Green bone is especially rich in protein and mineral substances, which enter largely into the formation of the egg. These elements are deficient in the ordinary grains grown on the farm.

Green bone taints very quickly, and care should be exercised, feeding it only when fresh and sweet. An ounce for each hen three times a week is sufficient.

Skim-Milk for Poultry

By A. E. Vandervort

SKIM-MILK had far better be fed to the fowls on the farm than to hogs. It is not only a great chick-grower, but for egg production it is excellent. I have always noticed that my hens laid exceedingly well when fed skim-milk, but to further test its value I tried a little experiment with sixty pullets.

They were put into two pens, equally divided, all of one variety and all as near the same age as possible. The pens were side by side, and the interior arrangement was the same. These two pens were fed exactly alike and a strict account kept of their feed. Their morning feed consisted of a grain mixture of equal parts of wheat, oats, barley and buckwheat. This was fed in a deep litter, a small handful to each fowl. At night they were fed all the whole and cracked corn (equal parts of each) they would eat up clean. A dry mash mixture was kept before them all the time. This was made as follows: one hundred pounds each of wheat, mixed feed, hominy, dairy feed; fifty pounds of oil-meal, and fifty pounds of beef-scrap. Sprouted oats and mangel beets were fed for their green feed. One pen had skim-milk, while the other had just fresh water to drink.

The test was begun on November 1st, and accounts were balanced with both pens the following May 1st. Those which

drank water had but little over half as much credit for eggs laid, while their feed had cost more than the pen which was fed skim-milk. The proceeds from the eggs sold from the skim-milk-fed pen were \$52.65, and the feed cost \$18.97. From the pen that was not fed skim-milk the proceeds from eggs were \$30.94 and the feed cost \$23.72. Since trying this experiment I have repeatedly tried these tests with the different breeds I have with about the same results, and now skim-milk is of first importance in compounding my feeding ration for my fowls.

I have found that the best way to feed it is sour, if possible. It may be some trouble to sour it in very cold weather, and then it may be fed sweet. But never feed sour one day and sweet the next. Better feed one or the other all the time. When I do not have a full supply of the milk for all pens I prefer to feed it to certain ones all the time, and not change about.

I have found skim-milk also a great chick-grower. I feed it to my chicks from the time they are hatched. Until they are about a month old the milk is cooked and made into cottage cheese, and after that age they are fed the milk in the same manner as the adult fowls. Since using it bowel trouble has not affected my chicks, while before it did.

Culling the Youngsters

By T. Z. Richey

ON MANY farms it is customary to keep all the pullets and dispose of nothing but the cockerels and old stock. If one would build up a good, vigorous strain of poultry it is necessary to cull the pullets and keep only such as show a strong, vigorous constitution. The inactive pullet, the one that seems to grow slowly, should be included in the coop with the surplus cockerels. The lazy, under-sized pullet will make, at the best, a poor layer, and should never be included in the breeding pens.

Don't invite, excite or ignite—trouble.

When we have learned to glorify the commonplace we are mastering the lesson of life.

Save Your Chicks From Lice

Safe—effective—quick in its action. Sprinkle it on the roosts—in the cracks—in the dust bath—on the young chicks—use it on lousy stock—it's a sure lice destroyer.

DR. HESS Instant Louse Killer

kills lice on poultry and farm stock, also destroys bugs on cucumber, squash and melon vines, cabbage worms, slugs on rose bushes, etc. Sold in sifting-top cans—guaranteed—1 lb. 25c; 3 lbs. 60c (except in Canada and the far West). If not at your dealer's, write us.

DR. HESS & CLARK, Ashland, Ohio.



MAKE HENS LAY
more eggs; larger, more vigorous chicks; heavier fowls, by feeding cut bone.
MANN'S LATEST MODEL BONE CUTTER
cuts fast, easy, fine; never clogs.
10 Days' Free Trial. No money in advance. Book free.
F. W. MANN CO., Box 32 MILFORD, MASS.



Queen Bess laid an average of 183 eggs per year for five years

tioned. Two others laid 231 and 228 eggs respectively. In 1912 his record pullet laid 246 eggs.

Mr. Mathewson has bred this stock with the intention of preventing his hens from becoming broody. Of course he wants them to lay heavily. Queen Bess is now falling off perceptibly in laying, but has been broody hut twice in her six and a half years of laying. A three-year-old hen with a record of 231 eggs has never been broody.

His plan of breeding has been to select as breeders the best producing yearling hens and older ones, excluding any that show an inclination to broodiness and to loafing. He also gives very careful attention to the males used for breeding. In-breeding and line-breeding have been followed, always making exceptional vigor a prime requisite on both sides.

Pedigree Counts as with Cows

In some important respects Mr. Mathewson has followed the principles discovered by Dr. Raymond Pearl, which have been described in FARM AND FIRESIDE.

PRINCE ALBERT

the national joy smoke

has put the "Indian Sign" on all the tongue-broiling, smartweed brands. P. A. can't bite your tongue nor any man's, patented process removes the sting.

Sold everywhere in 5c bags, 10c tins, pound and half-pound humidors.

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



The Market Outlook

Harvest Gold

By Berton Braley

HERE'S a stream of yellow gold.
Here's a flood of wealth untold,
Not the metal hard and cold,
But a gold that's rich and warm,
Sprung from acres manifold.
Mighty ranch and tiny farm;
Ripened on the spreading plains
Underneath the kiudly rains,
With a color gently won
Through the alchemy of sun;
Here's a wealth men may not scorn,
Here's the yellow gold of corn.

Never was there mined or panned
In Alaska or the Rand
Richer treasure than the soil
Yields in answer to our toil;
Here's a living gold that brings
Vaster tribute than a king's,
Slaying famine, ending dearth.
In the farthest realms of earth;
Here is strength and here is food
For the hungry human brood,
Here's the warmth of summer days
Prisoned in the golden maize.
Here's the wealth men may not scorn,
Here's the yellow gold of corn.

Little Lessons from a Big State

By E. P. Stiles

TEXAS has just had the biggest assemblage of farmers, as farmers, ever held in the State. About three thousand gathered in convention at the Agricultural and Mechanical College for five days. The Farmers' Congress took the first three days, having an attendance of something over two thousand men and women. The last two days were utilized by the Farmers' State Institute. The attendance at each was distinct. All were engaged all the time in discussing rural problems.

A Speaker—"How long does it take a Texas man to catch, harness, hitch up and drive a double team out of the barn-yard ready for work in the morning?"

A Farmer—"Nine minutes."

Audience—"Oh," "Ah," "Eh?" "Is that so?"

Speaker—"How do you know, Mr. Farmer?"

Farmer—"I have timed myself."

Speaker—"Are you accustomed to timing yourself about your work?"

Farmer—"Yes. I find my watch one of the most important tools on my place."

Speaker—"I have charge of over seven thousand cultivated acres. When I took charge it took twenty to twenty-five minutes to do what you say you do in nine minutes. In order to pick out the best men, I had my five foremen time their men for two years. Now it takes our men but eight minutes to do what it formerly took twenty-five minutes to do. The watch is a great tool on the farm."

A Texas farmer at the farmers' institute offered to pay for a telegram to every senator at the capital, if the farmers present would sign the telegrams to their respective senators. The telegram was to urge the appropriation of generous sums for the advancement of agricultural education.

The offer developed the information that only one fourth of the farmers present knew who their senators were. Evidently Texas farmers are not goods-box whittlers, else they would have known.

The farmer who offered the telegraph charges said that three fourths of the farmers before him were not attending to their business. He said it was their business to know who their servants at the capital were and to see that they did their duty to their constituency. Another Texas farmer said the most important motor on the farm is the intellect.

The co-operative plan of marketing cotton which brought about this result was the biggest thing which appeared in this year's session of the Texas Farmers' Congress. The Texas Cotton-Growers' Association gave practically its undivided attention to this subject and endorsed the plan.

American cotton will be held in warehouse in England, financed by English capital, until it will bring the grower, on the basis of "middling," fifteen cents per pound. As it costs about two cents per pound to deliver it from the farm to the spinner, the spinner will have to pay seven cents for it in Liverpool.

The American growers are determined to fix the price of cotton at fifteen cents and to sell at that price, neither higher nor lower. In other words the American cotton growers have determined that their cotton shall go to the English spinner at

fifteen cents, plus costs, no matter what the cotton gamblers have to say about it.

Here is a paradox brought out at the Texas Farmers' Congress. English capitalists have formally contracted to put up sufficient money to enable American cotton-growers to warehouse their cotton until English spinners are compelled to pay the grower fifteen cents a pound for it; and the English spinner is complacent. Why?

Because the English spinner would rather pay the American grower fifteen cents per pound and have the satisfaction of knowing that every other spinner had to pay the same price than to incur the risk of having cotton drop after he had exercised his utmost judgment in making his own purchases; and for other similar and equally good reasons.

September Liquidation

By L. K. Brown

THE heavy liquidation of hogs which came in August has continued into September. A combination of unfavorable conditions has caused it—the dry, hot weather has seared the pastures and corn-fields, raising the price of corn, and disease has become prevalent over widely scattered districts. All these tend to enlarge the marketing. Seldom has there been such a deluge of undesirable hogs as has occurred this season. August is apt to see considerable of this stuff, but this year it has been larger than usual, and on September 1st Chicago received its largest run on record for that month.

Naturally the average weight has decreased, and the market shows a wide range of values. Unfinished hogs, because of their numbers are appraised well down the scale, while prime shipping weights, because of their scarcity and the persistent eastern demand for this class, sell well.

During periods of more favorable weather marketing has decreased and prices have advanced sharply, but this has usually brought in a strong delegation again and caused a decline. The packers have been good buyers for some time and give the market considerable support on breaks. They have large holdings of provisions which will be consumed before long and they do not care to allow prices to go to a low level.

As long as unfavorable conditions continue the liquidation can be expected to continue, but at its close sharp appreciation is generally looked for. Wherever there is no danger from disease and feed can be had, finishing should pay, as light receipts and advancing prices are to be expected as soon as the tide turns.

A Selling System That Brought Success

By Maurice Floyd

IN FARM AND FIRESIDE of April 26th is an interesting account of the success met with by the Ozark Fruit-Growers' Association in marketing its strawberries. Besides the factors which are mentioned as contributing to this success—high-grade fruit, carefully graded and packed—another should be mentioned and that is the Association's system of selling its fruit, so far as possible, on the track instead of consigning it to some commission firm.

When Mr. P. A. Rodgers assumed the management of this association several years ago, nearly all the fruit was consigned, with the result, as he states it, that "most Ozark growers shuddered at the mere mention of consigning," while very little was sold on the track. At once he commenced a fight to cut down the consignments and build up the track sales—a most difficult task because the consigned fruit of this and other associations, as well as many independent growers, was continually coming in competition with the fruit which was sold outright.

At the end of the 1906 season Mr. Rodgers and his sales-manager, J. W. Stroud, went before their local associations with their annual statement showing an average price of sixty-six cents more per crate for berries which had been sold outright than those which had been consigned. During the past season thirty strong local associations marketed their berries through one central agency, and practically all of this fruit was sold outright before it left the shipping station.

This system insures the much desired competition among the buyers.

Sheep-Market Encouraging

By John P. Ross

AT TIMES during the three years in which I have been allowed space in FARM AND FIRESIDE, I have felt doubts as to whether I had not fallen into the habit of entertaining too optimistic views as to the future of the sheep-market. Two seasons of drought and one of storm and flood, together with the uncertainties of tariff changes, have caused me to fear that I should have to take a few reefs in my too flowing sails. Just now, however, when things were looking pretty black, a sudden change for the better appears, and all the signs and portents on the live-stock horizon tend to reassure me of good times, at least for the immediate future. The depression visible during the earlier part of last month passed away, and toward its close prices rallied and the sheep-market showed remarkable strength and activity for that rather trying time of year.

Comparing the figures for August with those of July, prices have improved. Best sheep in July averaged \$4.50, and lambs, \$7.55; in August, though the average for the earlier part of the month was below that of July, yet for the week ending August 30th prices for top sheep were \$4.90; bulk, \$4.25 to \$4.60; top lambs, \$8.25; bulk, \$7.50 to \$8.10.

A noteworthy feature of the trade just now is the scarcity and consequent high prices of feeding lambs. A year ago they were regarded as too dear at \$6, and now they are hard to get at \$7 and upward. It would usually seem a dangerous speculation to buy at those prices, but in many sections feed is plentiful, and it will not be very surprising if by the holidays lambs should be selling around \$9, though it would be too risky to prophesy such a thing now.

The demand for wool is improving and prices for some classes are higher, while the market generally shows a steady improvement, western wools selling from eighteen to twenty cents. There is a good call for pulled wools.

Since so much of the success of sheep-breeding depends upon the condition of the ewes at pairing-time it is worth while just now to take thought as to what that condition should be and how it can best be secured. More than once I have called attention to the very much higher percentage of lambs Old Country shepherds are able to get and to rear, especially out of the Down breeds, than we seem to be able to secure over here. Since we have as good specimens of those breeds as are to be found anywhere and our climate and foods are as good for sheep-raising, there must be something superior in their practice to that which generally obtains among us, and I believe that it consists in the means which they employ to bring the ewes to the ram in the best possible state of health and in good firm flesh, but free from fatness. Their practice is to keep them for a month prior to pairing on the best old pasture available, and if the grass is not of the best, to help it out with as much good timothy or meadow hay as they will clean up. To this it is customary to add a daily ration of one-half to three-fourths pound of oats and bran (two parts oats, one part bran) with a sprinkling of linseed-meal. Corn is considered undesirable for the ewes at this period, as being too fattening.

The Con Man in the Country

[CONTINUED FROM PAGE 4]

smoothly. We are asking none from those who put in the farms, although we shall be glad to have them subscribe for cash stock if they wish, so we shall have to sell enough to outsiders to provide the cash capital, or at least most of it. That is my task—to sell this stock."

"Can you do it?" she inquired.

She was such a very practical young woman that she quite upset him at times, but he felt that he was making progress. While she made disconcerting comments and asked disconcerting questions, she advanced no serious objection to his plan.

He assured her that his facilities for putting out such an issue of stock were exceptionally good. Then she asked how much there would be.

"I think," he replied, after a moment's hesitation, "that we would have to capitalize for \$250,000. I figure that the ten farms included in our plans would be put in at an average valuation of \$10,000 each, which would take \$100,000 of our stock. That's a pretty liberal valuation, Miss Baird. You have good land here, but you

still have a long haul to a railroad, and there's a lot of development work still to be done. Then we'll want to put about \$50,000 into our model town. That will all come back to us later in rents and public service charges, but we'll have to provide it now. It will take \$50,000 of stock to provide the necessary cash capital, and the other \$50,000 will cover promotion expenses."

"And you're the promoter?" she suggested.

"Yes, of course," he replied, "but you must understand, Miss Baird, that the promotion expenses may be quite heavy."

She nodded thoughtfully. Then she looked down at him, awaiting her decision, with a whimsical smile. It was really quite absurd—she on the fence, and he, still holding the rolled map in one hand, arguing his case from below.

"The judgment of the court is," she announced, "that you may have the farm—for \$15,000."

As soon as he had recovered from the shock of this he pleaded with her to be serious.

"I am," she said, descending from her perch.

"You can't expect to get any such price," he argued.

"I'm not trying to sell," she retorted. "Let me tell you something about this farm, Mr. Babbitt," she went on, quite earnest now. "I made it, so far as it has been made, and I'm rather proud of it. I'd like to finish the job. I came here with my father, but he died before the work was fairly begun. He left me a little money in addition to a farm that was only partly paid for. I didn't know what to do. Everybody seemed to expect me to either give up the farm or else marry some man who could go on with the work. I didn't want to do either. I was strong and healthy and country-bred. I had already learned that this is a country of men—real men—and that a woman may live alone out here in much greater safety, so far as molestation is concerned, than she can in the city. I wanted to finish the job."

"My neighbors, when they discovered this, encouraged me; the idea seemed to appeal to them as plucky and novel, and they have been very good to me. They keep closer watch than you would suspect, Mr. Babbitt. That big bell of mine makes a noise that travels far. I could sound an alarm on it that would start every man within hearing in this direction instantly, and the alarm would be passed on to others. They'd come on horseback and on foot, by road and across fields, and there would be little chance of escape for anyone who had sought to harm me. But that is an unnecessary precaution here. I am merely trying to make the situation clear to you."

"The encouragement given induced me to go it alone. I got a woman for companionship and to do the work about the house—perhaps a little for propriety too, but not in the least because I was afraid to live here alone. I have two men working for me now, living in a little bunkhouse I've fixed up for them, and I've never had an uneasy moment because of them. And I'm making good!"

"Can you understand what that all means to me? I work in field and barn and garden myself, but I am making good! It's a man's job, and I'm a woman—not a very old woman either; but I'm making good. It's quite an achievement, I think! Anyhow, I'll go into no combination farm, and you'll have to pay my price for my land. It is quite useless to argue the question."

Babbitt made a quick mental review of the whole situation.

"I'll give you a hundred dollars for a thirty-day option at your price," he offered.

"Two hundred," she stipulated.

"All right," he agreed. "Put it in writing, and the money's yours."

Riding back to the railroad town that he had made his temporary headquarters, Babbitt's mind was busy with many things.

"These farm papers," he grumbled, "are spoiling the easy-money graft. They're telling the farmer more about stocks and bonds and corporation business than most city men know. Think of the way that girl talked up to me on points she'd no business to know anything about! And then turned me down the way she did! That's what comes of too much education. Pretty soon a Wall Street sharp won't be able to talk to a farmer on a bond issue to float a new star in the Milky Way without finding himself tripped up. But I'd like to get her!" he added thoughtfully but equivocally, leaving it in doubt whether he wished to get her personally or financially. Perhaps he didn't know. "She's a peach, all right," he went on, "but too smart—too infernally smart. I'd like to get her!"

It will be reasonably clear from this that her pride of achievement and disinclination to give up her unfinished task made no particular impression upon him. Which was quite natural. His pride of achievement was measured solely by the amount of money it represented; he never had experienced the satisfaction of doing anything otherwise worth while.

[TO BE CONTINUED]

What is Your Best Trapping Trick?

Tell Farm and Fireside in not over 250 words your most successful method for luring the common fur-bearing animals such as the skunk, otter, mink, muskrat, etc., to your traps. The best contributions will be paid for at \$1.00 each. Prizes of \$3.00 and \$2.00 each will be awarded for the first and second best contributions.

No manuscript will be returned unless special request is made and stamped envelope enclosed. Contributions should be addressed "The Trapping Editor," and mailed to reach Springfield on or before October 15th.

Garden and Orchard

Plan for Strawberries

By J. W. Campbell

THIS is my plan for setting out a strawberry-field. Plow the field moderately deep early in the spring, thoroughly pulverize the soil, and make a good seed-bed; wait a few days for the soil to settle, and after a rain work the ground again. Do this frequently until ready to set out plants.

Secure good, well-rooted plants, free from blight or disease. Take a three-foot-six-inch corn-planter wire, and stretch through the field, holding the ends with stakes four feet long; set a plant at every hutton. After you have set one row pull the stake and set just the length of it, which is four feet, then go to the other end of the field and set stake likewise; this will make your rows three feet six inches one way, and four feet the other way. By this method you can plow and cultivate the plants both ways and save a great deal of hoeing.

Commence cultivation soon afterward, and cultivate often, the oftener the better, both ways through the field, paying no attention to the runners until about the last of July; then cultivate the rows the four-foot way, and always cultivate shallow. I have never yet failed to get a good stand and plenty of vines set for the coming year; I have sometimes worked my herry-field as many as twenty-five times during the season.

When the cropping season is over go over the field with a mower, and take all cuttings from the field; then, with a pair of disk cultivators, reversing the disks to throw the soil away or out, straddle the rows, leaving a space about six inches in the row; repeat this operation two or three times, throwing the soil away from the row and cutting the vines and plauts until you have plenty of loose soil. Now reverse the disk, and throw the soil to the row, repeating the operation two or three times before you leave the field. Then take a hoe and go over the rows, and cut out all plants except one good, strong plant about every ten inches, pulling a little loose dirt around this one. After the first rain comes your plants will start anew and throw out new plants.

Keep up the shallow cultivation until late fall, keeping out all weeds, and you will have a new field of berries. A top-dressing of some good commercial fertilizer or well-rotted manure worked in the soil is a great benefit, in fact it is essential.

Money-Making Garden-Sass

By F. N. Darling

ALMOST every business man has some kind of a hobby. C. G. DuMunn, who lives in south central New York, spends most of his spare moments during the spring and summer growing prize vegetables which he exhibits at the local fair. He is not a trained agriculturist, but he has the peculiar knack of producing garden crops which are almost always sure to take first prize. Vegetable gardening is a pleasure to him because it is his hobby.

Mr. DuMunn did something last year that nobody else in the village thought of doing. In his back-door yard there is an old flower-bed ten by sixteen feet on which he raised forty dollars' worth of onions and radishes.

This was his plan for making such a profit from such a small area:

About April 1st he planted one hushel of onion-sets in rows eight inches apart. Then he placed over them a covering of straw to keep off the frost. As soon as they were large enough to eat they were put in bunches of twenty or twenty-five and sold to the local groceryman for five cents a bunch. He sold three hundred bunches.

About the first of May radishes were sown between the rows of onions, and as soon as these were large enough they were placed in bunches of about thirty and sold for five cents a bunch to the local merchants. Five hundred bunches were sold.

The cost of the onion-sets and the radish-seed, including all labor items, was about ten dollars, which leaves a net profit of thirty dollars realized from crops grown in an area of ten by sixteen feet.

This suggests the possibility of doing big things on a small scale. Mr. DuMunn sold enough vegetables from his small area to pay his grocery-bill for one month. Of course this scheme might not be practical in all places and under all conditions, but it is at least worth trying by those who live near town.

Strawberries in Alkali Soils

IHAVE never had the chance to experiment with strawberries in alkali soils. For poor soil the best remedy usually is stable manure. Strawberries are known to succeed better on soils rather inclined to be sour or acid than on alkaline lands. We can make the soil acid to some extent by plowing under heavy crops of any green

stuff in warm weather, may this be clover, or vetch, or cow-peas, or rape, or many others. Where the land can be irrigated there should be no difficulty to neutralize the alkali, or wash the excess out. But we can expect that the stations in the West and in States where alkali lands are common can give to the owner of alkali lands the best and most reliable information on the proper treatment of such lands, and about what prospects one would have for producing a paying crop of strawberries, or any other. T. GR.

A Grove That Pays

By Horatio Markley

OUR groves of catalpa and locust trees planted nine years ago last May with the three objects of profit, shelter and beauty have been doing well. They are twenty-five feet in height, eight inches in diameter and stand, on an average, one thousand to the acre. This year, for thinning purposes alone, one hundred posts per acre have been cut from part of the grove, and we expect to be able to harvest an equal amount each year on an average for the next twenty years until the number of trees has been reduced to one hundred and sixty to the acre, when they should be sixty feet in height and eighteen to twenty inches in diameter. The posts cut now will average about ten cents, as there are many small posts. Two are cut from a tree in many cases.

By the time the trees are fifteen years old the better trees should cut five posts each. The old idea of cutting off all the trees as soon as each will make a single post must be abandoned as wasteful, and the better plan of gradually thinning adopted, for two reasons: the very young trees will not make as durable posts as those of more mature growth, and the larger growth of the older trees will be worth much more for uses other than as posts. When planting a grove of catalpas we believe the better way is to have in mind the growing of mature trees for timber and lumber purposes, making the cutting of posts from the thinning a secondary matter that will pay a good rental for the land while the permanent trees are developing. In following this plan no sprouts are allowed to grow from the stumps. All the space is needed by the remaining trees. The planting of forest trees is so new to us that many mistakes are being made. The majority of the groves with which I have become acquainted have been partial failures. One mistake often made is to neglect cultivation. The catalpa especially responds to clean cultivation until at least three years old. A few years ago it was recommended to cut the young trees off close to the ground at two years old and allow a single sprout to grow from the stump, making a straight whip-like growth. This sometimes resulted in a fine tree, but more often it either bent over or broke off from the stump. We now know that the better way is not to cut a straight tree at all, and if some are crooked or forked cut them at one year when the sprout will not make so rapid a growth. It is even better to allow two or three sprouts to grow for one year to brace each other somewhat.

Probably the commonest mistake of all is to keep the trees too closely pruned.

The trees should be allowed to have limbs and plenty of leaves, very little pruning being done the first few years. Only in that way can a rapid growth be obtained. If planted one thousand to the acre they will grow tall enough without early pruning.

Outdoor Storage of Apples

By M. Coverdell



CHOOSE apples that are sound and free of worms, following the plan here given, and they will be successfully preserved till the early varieties ripen in spring.

Dig a pit eighteen inches deep, either circular or oblong, any length desired. Pit should be located on a north-side slope, to prevent early thawing out in spring. Good drainage should be insured. Let pit air out well; see that apples are dry; wait to store as long as possible.

Some cool day line the pit with straw or leaves, heaping the apples up in it till they are in the shape of a cone; cover them with dry hay, straw, weeds or corn-fodder (2), just enough to keep the dirt off the apples. Over this place a six-inch layer of dirt (3), to hold it down and protect the fruit from dampness. Pat dirt down firmly with back of spade, and in case of heavy rains cover with old lumber, canvas, oil-cloth or cheap roofing.

Let the pit stand thus till this layer of dirt freezes (if apples are lightly frosted, so much the better), then cover it at once with about a foot of straw, manure and barn-yard litter (4), which will preserve the six-inch layer of coldness near the stored product, yet prevent further freezing. Toss a three or four inch layer of dirt over the litter, to hold it in place and shed the snow-water and rain from the pit, packing it down well with the spade.

GARDENING

BY T. GREINER

The Sprayer in Autumn

OUR knapsack and auto (compressed air) sprayers do not come much in use these days. The one I generally use for garden work, a substantially made, so-called automatic sprayer, with copper tank, placed within handy reach and sight in the greenhouse, reminds me, however, that it is nearly time for the fall spray. If we use it for nothing else, spraying the currant-bushes in a scale-infested locality should never be neglected. Spray in fall, and again in spring, or the scale will get them. For currants, as for pears, I prefer the oil spray. Crude petroleum applied when sap begins to flow in spring, or is still flowing in fall, is most effective. Scalecide or other miscible oils will do and are cheaper. Spray the hushes thoroughly and from different directions. And while you are at it go also over the gooseberry-bushes. I do not know whether the bushes suffer much from scale attacks; but certainly we had many of our gooseberries show the tell-tale red spots. Better make a sure thing of it.

A Good New Cabbage

The newly introduced Copenhagen cabbage seems to occupy just about the same place among early market sorts as the Danish Ballhead does among the winter cabbages. It is a good one, flat or roundish, solid, fairly fine-grained and a favorite with buyers. Whether it is as early as Jersey Wakefield and Eureka, I am as yet unable to say. It seems to be. For another season, however, the home or market gardener can easily do worse than plant the Copenhagen Market.

Late Cauliflowers

We usually get our best and whitest cauliflowers late in the season. Hot sun is not much to their liking. It is always well to protect the heads from full exposure to the sun rays. Break two or three of the leaves next to the head (inside) at about the middle, folding the outer halves over the head, or pin or tie some of the big outer leaves over the head tent fashion. Anything to keep the hot sun from directly striking the pure white head! Otherwise it may soon become spotted and worthless.

Celery Requirements

Humus and water are the two chief needs of celery. With frequent rains celery in rich soil will do all right. If rains fail, don't expect a good growth and succulence of celery-stalks, unless you give the plants plenty to drink. The closer celery is planted, the more water it wants. Where planted in solid beds, after the fashion often called "the new celery culture," too much water can hardly be given in the ordinary garden. Weeds require water too. They rob the celery of water. Pull them out.

Sprayers are Expensive

It isn't the proper use of sprayers that hurts them half as much as the rest, and with it the rust and corrosion. Sprayers are expensive. They need care, otherwise you will meet troubles and repair expenses when you wish to spray next season. The most important thing to do is to rinse the pump and tank very thoroughly with clear water every time after it has been used. Otherwise sediment will dry in the valves, and on the inside of tank and pump, and clog the nozzles, and when you try to spray next year the sediment will peel off in flakes and otherwise give you a lot of trouble. Take off hose and nozzles, and clean every part. When dry put the machine together again and store in a safe place. This will help you that much next spring.

Blanching Celery

The simplest way to blanch celery, especially in the earlier part of the season, is by means of boards set up on edge, in inverted V fashion, over the row of celery. Pieces of heavy wire eight or ten inches long with two inches at each end bent at right angles, then dropped at intervals over the upper edges of the two boards, will hold them in position. Or little stakes may be driven into the ground along the row for the same purpose. Start at one end of the row to board them up in this way. As the plants have become sufficiently blanched for use, take them up and shove the boards along to another section of the row. Celery will blanch in two or three weeks. Thus the same boards may be used two or more times in succession. Celery to be stored for winter use need not be fully blanched. A little hanking with earth to make it grow upright will be sufficient.

If you want to tear down don't begin until you have something as good or better to take its place. Anybody can take a hammer and knock; it takes skill to build.

Foolish to Buy Wood Shingles

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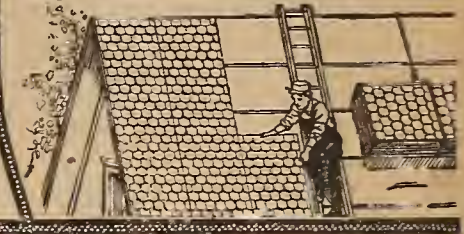
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AGENTS

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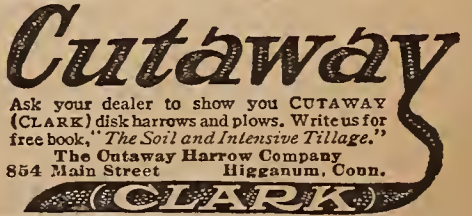
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The Woman's Law

A Woman's Novel for Women—and for Men

By Maravene Thompson

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A graphic story about those who rob the man who has to borrow.

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And Then—

The strong story of the burglar who changed his life and heart, became a good and useful man—a wonder tale of human nature—good medicine for all of us.

This advertisement is only about the November number of The American Magazine. There are twelve rich, varied numbers every year—and a joyous surprise in each one.

THE AMERICAN MAGAZINE is issued by THE CROWELL PUBLISHING COMPANY, Publishers of Farm and Fireside and the Woman's Home Companion.



EVERYBODY who eats food, drinks liquor or buys things from the druggist knows the pure-food label, the so-called guarantee label; the label that was put on the packages pursuant to the national purpose to "let the label tell." We do too; let it tell almost everything except the facts. If the motto of the food-law initiators had been "let the label lie," their alliteration would have been just as good, and it would have been vastly more accurate.

Don't accuse me, now, of being extreme in that observation. It isn't mine; it is the opinion of Doctor Alsberg, the Chief of the Bureau of Chemistry; successor to Doctor Wiley as chief administrator of the law. Doctor Alsberg has been looking into the workings of the law, on its legal and administrative side, and has decided that there ought to be no such label. He is going to have it taken off if there is authority to do so; and the solicitor of his department has told him that the authority exists. Exercising it will make us much wiser.

Ask ten people what that label means, and nine of them will tell you it signifies that the United States Government knows what's inside the package, and is certifying that it's good for you. Most of them will be certain that it means no poisons are used without being plainly indicated on the label. Nearly everybody will be certain that it is insurance against adulteration. Everybody assumes that somehow it is a guarantee of quality. The guarantee label means none of these things. Here is what it means:

What the Guarantee is

The firm of Bunkem & Foolem are manufacturers, say, of a preparation warranted to remove superfluous hairs. When they begin selling it they file with the Department of Agriculture their guarantee as required by the law. It reads:

"We, the undersigned, do hereby guarantee that all articles of food or drugs which are now or which may hereafter be manufactured, packed, distributed, shipped or sold by us are not and will not be adulterated nor misbranded, within the meaning of the Food and Drugs Act, June 30, 1906."

That's all. Bunkem & Foolem, when they file that guarantee, simply agree that in case any jobber, wholesaler or retailer of their goods is arrested or charged with selling bogus preparations, they will stand behind him and bear the expenses and responsibility! The average citizen very naturally thinks, from its reading, that the Government is doing the guaranteeing. Far from it. The Government probably never heard of the particular article bearing the label.

Suppose Bunkem & Foolem get up a formula to remove undesirable hairs from the countenance. They guess it will do the business, and, preparatory to putting the lotion on the market, they file this guarantee with the department. The department doesn't even know whether they intend to sell hair-remover or hair-restorer, and doesn't ask. The firm proceeds to put up its goods with handsome labels and that sanctimonious "guarantee," and sells them. Now, suppose an ancient maiden lady with an embarrassing tendency to develop a mustache buys a bottle of the stuff and rubs it on her lip; and suppose the stuff turns out to be a hair-restorer of unexampled vigor. In three weeks she is a veritable bearded lady. What can she do about it?

This Law May Puzzle Anyone

Just this. She goes to the drug-store and complains that the Bunkem & Foolem Hair-Remover she bought has turned her into a freak with a mustache that needs waxing twice a day, and she's going to sue the druggist for damages.

"But, my dear madam," replies the suave druggist, "those goods came to us under the pure-food and drug guarantee. We are not liable; the people for you to sue are the manufacturers."

The lady doesn't find it convenient to sue somebody in another part of the country; she doesn't understand all her rights in the premises—nobody else does, either, for that matter—and she goes away wondering why the United States should play such a trick on her. The truth is that Bunkem & Foolem might use the very same formula for a hair-remover and a hair-restorer, and the government label could be put on both without being questioned by the authorities!

Let the Label Tell the Truth

By Judson C. Welliver

We have been seven years, now, learning how very much of a sham is our boasted pure-food law. When the act was passed, Doctor Wiley and others familiar with the real problem to be met wanted it to give some government authority the power to fix food and drug standards and pass on formulas. That is, the food-law administration would be empowered to fix the proportion of certain drugs, etc., that might be

GUARANTEED BY BUNKEM & FOOLEM UNDER THE PURE FOOD AND DRUGS ACT OF JUNE 30, 1906. SERIAL NUMBER, 4-11-44

What the label says, but what does it mean?

used; to forbid the use of preservatives or adulterants which it believed dangerous or fraudulent. But that was bitterly opposed by the interests that wanted no such legislation, and was left out of the law on the ground that it would be too radical a step to take at the beginning.

So, as the law passed, it merely provides that to adulterate or misbrand goods entering interstate commerce shall be a misdemeanor. It defines adulterating and misbranding. But, in the complicated processes of manufacture, no general definition of the sort is worth anything. A few substances are, for instance, forbidden to be used in making confectionery, and then the law adds, "or other ingredients deleterious or detrimental to health." Who is to decide what "other ingredients" are "deleterious or injurious"? The courts! It means a lawsuit every time a sample is seized, analyzed and found to contain something the Bureau of Chemistry thinks is "deleterious" or "injurious." The manufacturer of course maintains that it isn't hurtful; the law doesn't specifically forbid it; no regulation or standard fixed by the authorities forbids it, and it becomes a question of fact to be decided by a court on the testimony of experts.

That is an utterly impossible sort of law. Conflicting decisions, dubious "expert" testimony and scores of other embarrassments arise to make efficient administration impossible.

Shall the Lawyer Decide Questions of Chemistry?

The law assumes that the buyer will know what he is getting and refuse to take preparations that contain dangerous drugs. How many people really do know that? The law enumerates a few things that must be indicated on the label; but it leaves out a long list of others, which therefore may be used without even indicating their presence. Thus such poisons as mercury and arsenic are not even required to be shown on the label.

Look now to the difficulties of enforcing such a law. A sample of some preparation is seized and analyzed by the government chemists. They thereupon issue a "Food-Inspection Decision." What is this? Nothing on earth but the expression of an opinion that this certain preparation is not a proper one under the law. That opinion is backed by no authority to enforce it. After getting this opinion from his experts, the Secretary of Agriculture must certify the opinion to the federal district attorney wherever the seizure was made, and he must prosecute, so that a court of law may finally decide whether the chemists were right or wrong about a chemical fact! Think of having a lawyer decide a question in chemistry! Worse, think of the hopelessness of the lawyer who, sitting on the bench, must make that decision, when you keep in mind that he will be confronted by all the "expert" testimony that the manufacturers can hire!

Secretary Houston is going to demand a sweeping amendment of the law, including authority to fix food and drug standards. That is a very difficult thing to do, but yet it must be done if the law is to be of any real use.

Fixing food and drug standards will prove one of the most difficult tasks the Government ever undertook. Here is an illustration that Doctor Alsberg cited when I talked with him:

"Chocolate," he said, "is the cocoa-bean ground up. Cocoa is the same thing, but with part of the fat, or

cocoa-butter, removed. Cocoa is not so rich as chocolate. Many people who cannot drink chocolate, because it is too rich, find cocoa very pleasing and desirable. Moreover, powdered chocolate will cake in hot weather because of its high content of fat; cocoa will not. Now, suppose a 'food standard' had been prescribed, before the process of making cocoa was invented, that required the entire content of fat; cocoa will not. Now, suppose a 'food perfectly natural; yet it would have prevented the introduction of cocoa, which has proved highly useful, and is the only form in which many people can use chocolate!'"

Again, take vinegar, which is one of the finest illustrations. The old process of making it was to put pure apple-cider in a barrel and let it stand long enough to sour. That process required several weeks. A standardized formula for making cider would have compelled it to be continued.

Yet a much more rapid and cheaper plan has been devised which produces cider quite as healthful. That process might be unknown yet if there had been hard and fast standards and formulas.

Standards, then, must be prescribed in such manner that they shall not be unduly rigid. They must not interfere with improvement and discovery. There are cases in which adulteration is not only excusable, but desirable; it makes foods vastly cheaper. But of course the adulterated article must not be permitted to be sold as the genuine.

Suppose We Adulterate Some Foods

Especially is there need that the whole pure-food administration be placed under federal law exclusively, to avoid the conflict between state and national regulations. Some of the States have better laws, regulations and administrations than the Federal Government has provided.

What do you think of this as an illustration of the difficulty of fixing even the simplest kind of standards. There was recently passed an amendment to the pure-food act, requiring that the contents, by weight, number of measure, of any parcel, must be exactly as represented on the container. Seems perfectly plain, doesn't it? And simple honesty? To be sure. Yet this is what happened:

A carton of soda crackers was seized in Nebraska, and the contents, being weighed, were found decidedly short of the amount indicated on the outside of the packet. It was a plain violation of law. The package was shipped back to Washington as evidence, and when weighed there was overweight. The same thing happened in a number of cases with crackers; it is constantly happening with all manner of foods.

The explanation is disgustingly simple. Nebraska has a dry climate; the atmosphere absorbs the moisture out of such articles, and they lose weight. Ship them back to the moister climate east, where they were prepared, and they take in the moisture again.

Tragedies—Can They be Prevented?

The New York food regulations permit dried apples to contain up to 27 per cent. of water. New York being the headquarters for dried apples, its standards are regarded in the trade as safe. So when this 27 per cent. standard was permitted, the New York manufacturers pretty generally adopted it. As a matter of fact, the limit ought to be about 22 per cent. But the New Yorkers went to making dried apples with 27 per cent. water, and of course it looked good to them: selling 5 per cent. more water meant 5 per cent. more easy profits. They climbed on the bandwagon and praised the food regulations—until.

That's the tragedy. It turned out that dried apples with 27 per cent. of water would ferment as soon as the weather got a bit warm. The result was that New York dried apples, made up by the thrifty people who had sought to cash in that extra 5 per cent. of water, spoiled wherever they went, the dried-apple business of the State was given a black eye, and other people got a lot of the trade.

Food standards may kick either way, unless they are made by people who know what they're about. The troubles about the net-weight law have compelled the inauguration of an elaborate, nation-wide study of problems of standardizing weights and processes. It is much easier in theory than in practice to make ideal and workable laws.

The Lean Years—By J. L. Sherard

Illustrated By W. C. Nims

THOUGH stars blazed over his head, Allen's reflections were steeped in bitterness. Back and forth he paced the short length of the piazza, his mind traveling its circuit only to come back to the starting-point.

Sleepless and disturbed, Mollie rose and tiptoed to the door. "Allen, you're keeping the baby awake," she warned. "It is late. Come in and go to bed."

"All right, dear," he called back. "I'll be in in a minute. I'm puzzling about some things."

His minute was an hour. He sat motionless in the rocker after that, and went over the entire situation again.

The head of the firm, whose books he was keeping, had that day announced a reduction of ten dollars a month in his salary. A general process of retrenchment, it was explained, was necessary to save the credit of the firm. Business had been dull for months.

Four years before Allen had left the farm he inherited from his father. He had wanted to move to town where life would be easier and comforts and pleasures show up more creditably on the daily balance. His wife had shared his feeling of distaste for the country. Like him, she had been bred there and had acquired that longing for the city which experience alone can either justify or shatter.

The farm having been in a sad state of neglect, Allen had been willing enough to give a five years' lease, at a small annual rental, to Tom Mullen, who had worked for him as a hired hand. Then Allen took a bookkeeper's position in a small town and he and Mollie enjoyed the change at first. The only drawback was that although the salary was fair they never quite managed to live on it.

Allen began to borrow of the bank, keeping the situation secret from his wife. He also denied himself in every possible manner in order to give her little pleasures and luxuries.

At length, however, the time came when he had to meet his notes, and there was but one recourse. It had been inevitable from the beginning, but Allen had fought it desperately and silently to the end. He gave in at last and signed a mortgage covering his sixty-acre farm.

"We'll take a new start, though, girlie!" he encouraged. "We'll learn the lesson of living and saving from others who are doing better on less. Everything will come out all right in the end."

Allen had often thought favorably of selling the farm and using the proceeds to begin business on his own account, but he could never quite muster the courage to take the risk. The little place was rich in sentiment, and then, too, though he got an inadequate rental, he clung to it as a nest-egg hoarded up against a day of possible misfortune.

An investigation among the clerks in the store proved to him that other men earning smaller salaries were living with their families in apparent comfort, and some of them had built from their savings modest cottages on the outskirts of the town and were making the building and loan associations help carry their burdens. He studied the way to do this and then Mollie and he tried to apply it to their own household. They tried very hard but saved nothing, and their horizon of happiness became terribly circumscribed. They had been reared in a different atmosphere, and their habit of life on the farm cried out against such pitiless restriction.

Finally Allen found himself under the humiliating necessity of negotiating another loan on his property. He continued the old subterfuge he had resorted to in the beginning of his troubles. He borrowed from Peter to pay Paul.

The last week in September came. Mollie began to droop and show signs of a breakdown. Then the oldest child—there were three children—was taken with scarlet fever. Allen gave up his job to help her nurse the sick boy. When the quarantine was lifted he returned to the office to find another man at his desk and his job lost.

He used sharp language to the manager and the latter flew into a temper and blurted out, "Well, you've lost your snap and ginger. You're a dead one—a back number. Get out!"

So that was the real reason! Allen repressed a mad impulse to strike the man in the face. He walked out of the store, head erect and step firm, and strolled to the little parked area in front of the court-house where the street loafers were accustomed to lounge under the friendly shade of a spreading oak. The place was deserted. He sat down on the polished iron bench to let his temper cool.

A big, clean wind was blowing. The leaves were red and gold upon the oak and two hydrangia bushes standing in the grass-plot reminded him of those which clustered about the porch of the old farmhouse. He thought of harvest and teeming barns. As he dreamed he became suddenly aware of the sheepish gaze of Tom Mullen, the boy to whom he had leased the farm. Allen felt instinctively that he was a messenger of new misfortune, and he resented it.

"What is it, Tom?" he asked irritably.

"I got a proposition to make, sir," said the boy. "Old Man Stuckey what died a short time ago left a fine livery business, and his widow wants to sell out. It's a chance for me, and if—I if I could get somebody to take the farm for the rest of the year I could buy them horses at a bargain and make a rich strike. It's a good business. I jes' dote on horses. It's what I've always wanted to do. You wouldn't lose a cent; no, you wouldn't; I g'arantee it, sir. I've got two fellers figgerin' on it now."

Tom went on rapidly elaborating his plans. Allen listened; in his heart a hope, vague and shadowy at first, had developed by quick stages into an earnest conviction.

"You can't buy the stable business, Tom," Allen's manner was gentle and considerate, but brimful of doubt. "I understand that Mrs. Stuckey wants four thousand dollars for it, spot cash."

For answer Tom drew a bank pass-book from his inner coat pocket. He opened it and pointed to the entries. "That's the profits I've taken out of the old place—a thousand a year on an average."

"Four thousand dollars!" Allen gasped.

"It'll average more'n a thousand now," Tom explained. "It was poor and badly washed when I took

But it was a splendid chance. They had proven themselves round-headed nails in square holes here in town. He did not blame himself or Mollie or the city. It was simply a case of misfit.

Eager to close a trade, Tom insisted on taking Allen out to the farm, to which the latter promptly agreed. A telephone message, via a neighbor's wire, told Mollie that he would not be home to dinner on account of urgent business in the country.

The drive to the farm behind Tom's spirited bays set Allen's blood tingling like old wine. He had worked almost without a vacation for four years, and in all that time, with the exception of a day or two every summer, the country with its allurements had remained as a closed book.

Tom had, indeed, done wonders with the old place. Well-ordered fields, pleasing to the eye in their regularity, had supplanted the ill-cultivated and gully-washed lands that Allen knew of old. The young farmer conducted his landlord over the thriving farm, explaining in detail how he had distributed the field crops to best advantage and emphasizing the possibilities of truck-growing for the eastern markets. In common with many of his neighbors, Tom had been highly successful in the spring with early asparagus. Profits had been large. Then, too, there was the peach industry just started, to which experts declared the ridge of high land running in a narrow strip across two counties was peculiarly well adapted.

The more Allen learned of the farm and its possibilities, the more enthusiastic he grew. He caught himself wondering more than once whether it were possible that Tom was laying some trap for him, skilfully baited. But no, it could not be, for he could see enough with his own eyes to form a pretty fair opinion of the farm's potential resources. The practical difficulty in the way of a trade was his lack of funds. He confessed the situation shamefacedly.

"That's all right," Tom replied. "You can take over the stock, tools and all the rest, and I'll carry your note until summer and allow you some money besides for runnin' expenses."

Allen stammered his thanks, and the agreement was made tentatively.

Before starting home Allen filled a large basket with autumn flowers to take to Mollie, goldenrod, asters, cosmos and lusty thistles. In the neck of the woods beyond the creek he gathered bright leaves.

When he entered the bleak, unlovely cottage he called home, he found Mollie lying down.

"You didn't know I was going to be laid up," she smiled weakly into his face. "Don't blame yourself. It is nothing. I'll be all right by morning. Now, sit down beside me," she said "and tell me where you've been and what you've been doing."

Allen stirred measily. She looked so pale and listless he was afraid to proceed. But in a moment the memory of all that he had suffered in the past four years swept over him and he unburdened his heart freely and frankly to the woman he loved and with whom he should have shared his trials in the beginning.

When he had finished a brighter and fresher expression, the flame of hope rekindled, lit up her face, and she sat up.

"Oh, how I'd like to go nutting!" she cried.

Allen pushed her gently back among the pillows, and tiptoed hurriedly out of the room. In a moment he returned, dragging the hamper. He pulled off his coat and began removing its fragrant cargo, piling the mass about her with no regard to artistic effect. "I've brought some of the woods and fields back to you," he said.

Allen surveyed his work with the pride of a master. A sweet odor filled the room.

"You haven't told me yet what you think of Tom's proposition," he said inquiringly.

"Tell Tom we'll come," Mollie cried between laughter and tears, as Allen piled the branches and blossoms about her. My soul has starved long enough for the dear old place. We were foolish children to leave it—for this—for anything, but now we'll go back and begin to live. Let's have early breakfast in the morning and start packing first thing."

"Of course it is a bad season to go back on a farm," Allen regretted. "If summer instead of winter were ahead of us—"

"Never mind," Molly interrupted, "I've learned a good many things in town about being social and I'll make the winter hum with a Fancy Work Club and a Housekeepers' Club, and a Book Club. We'll meet in the schoolhouse—"

The door opened and in rushed three youngsters. "Who wants to go nutting and sleighing and coasting and skating?" cried Allen, whirling them around excitedly. "Who wants to own his own fields and snow-

drifts?" "And his own life," sighed Mollie, rising and flinging the cushions into order. "No more loafing about on sofas for me. If the farm gives me back my life I'll make something of it."



Allen pushed her gently back among the pillows

it. Now it's in fair shape and gettin' better every year. There's the orchard I put out the first year—jes' ready to bear next season. I didn't mind makin' improvements because you give me such liberal terms in the lease. A man with a family, if he knows his business, ought to lay up a thousand a year from now on, barrin' cyclones, ball-storms and earthquakes."

Allen searched his companion's face sharply. He saw no trace of deceit there. "Tom, do you think I could manage the place? I've a hankering to go back."

"Bully for you!" was the sincere response. "Of course you can manage it. But I thought you was a fixture here."

"The strings were cut this morning," Allen laughed. "Give me the refusal of your lease. I'll manage the lessor. Saturday I'll give you a definite answer, and if I can take the place we'll move out at once."

He had made the time reservation on account of Mollie. He was resolved to be frank and, putting aside all false pride, lay the entire situation before her. If she did not care to return to the farm, he would make other arrangements and go forward as best he could.

FARM AND FIRESIDE will wish its readers a Happy New Year on October 11th. One of the best gifts it will bring is a new serial by Adelaide Stedman, author of "Poor Relations" and "The Road to Happiness." This is a story of love in conflict with prejudice and selfishness, but strong enough to create a bright to-morrow from "The Burden of Yesterday."

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The Common-Sense Way

By Merle Hutchinson

THE Epworth League and Christian Endeavor Societies are considering at this time the value of sociability, of chums, of co-operation. In the California town of Moldovia there is in progress a fine example of co-operation. There, as in most places, all sorts of good works were going undone or half done, and though there were several churches, no one of them was strong enough to support the hospital, the girls' home, the playground or the other local philanthropies needful for the town's welfare. Now, surely the churches, already organized, and organized for the express purpose of making the earth a better place to live in, would naturally be the sources from which such enterprises should draw support. So they are, in one sense, for the founders of almost all the great charities, the beginners of almost all the reforms, are people belonging to some religious organization. The people of Moldovia had seen the multiplication of agencies for justice and for kind deeds going on wherever a community had awakened to its needs and its duties, and it occurred to them that it would be more economical, as well as friendly, to have the churches take hold of these matters together and promptly. So all the denominations have joined to support the various activities for the betterment of the town. If there is any sudden call for aid, if there is a fight to be made to save a cause or kill a wrong, there, already banded, and used to working together, are all the church people of the place, regardless of whether they reject infant baptism or hold to a necessity for bishops, prefer the prayer-book or the prayer-meeting.

Enlarge Your Platform

There must always be room for much honest difference of opinion as to the meaning of many passages in the Gospels, but there has never been the least doubt as to the command to love righteousness and our neighbor as ourself. Here is a platform wide enough to hold all the people of any community. A good and doubtless truly devoted officer of one of our largest church organizations wrote the other day, to an inquirer as to methods, that his denomination joined in the topics of study outlined for the use of all the Protestant denominations, save when a missionary topic was assigned, in which case they dealt strictly with the missions supported by their own sect. It is as though a little society preparing comforts for the army in the field met each month throughout the year to learn just what the one regiment to which their boxes went was doing, but remained in cheerful ignorance of the whole great war, and whither it was tending, and whether the policy of its leaders were wise or weak. When one thinks of the weary centuries of dispute and dissension and cruelty through which the world is slowly working its way to justice, one echoes Sill's verse:

'Tis not by guilt the onward sweep
Of Truth and Right, O Lord, we stay;
'Tis by our follies that so long
We hold the earth from heaven away.

There will always be differences of opinion in matters of belief, in matters of policy, and certainly in matters of taste. But we are at liberty to put the emphasis where we choose, on the points of agreement or on the points of disagreement. We begin to see, at last, after untold suffering and loss, that it is better to agree that our young people have safe and right recreation, that our sick be tended, that our criminals be made better instead of worse, than that we win our neighbor to our own particular theory of life.

Working Together for Good

Co-operation as a general practice in trade may seem impractical. At least it is still far away. But co-operation among those already banded together for righteousness is not only practical; anything else is monstrous and absurd. Now that the bitterness of conscientious warfare over tenets has died, it is surely often some admixture of jealousy that keeps the different sects from working together, rather than any profound distrust in one another's belief. Co-operation whenever and wherever found in business, in philanthropy, in government, in sports, means always some sacrifice of individual preferences or individual gains. Increase of power is not to be had without some personal loss. That

must be faced at the outset, and, when once faced, one comes to see that the gain in friendliness, in sympathy, in understanding, as well as in accomplishment, is far beyond any seeming loss to the prestige of any organization.

The Beginnings of the Nation

By Merle Hutchinson

THERE is a close kinship between the chronicles of the Israelites and the chronicles of the Angles and Saxons, the Teutons and Celts. Biblical history was written after the fashion of all primitive narratives. The reader finds himself instantly in the midst of the story. There is little introduction or explanation. Characters appear and vanish, and what can be known about many of them must be picked out by the student and woven together afresh.

A year and a month the horde of homeless people dwelt in the plain before Sinai. They had come there an unwieldy mixed multitude. But when they took up their march of perhaps a hundred miles to the land of Canaan, they set forth in an established order.

A Year's Progress

They had kept the first anniversary of the Passover, the feast that was to have so great an effect on the solidarity of the race. The other main feasts, those of Pentecost and of the Tabernacles, had been decreed. Judges had been appointed, the priesthood established and order of worship ordained. To the governors this year's work must have seemed a triumph, and the land of promise indeed near.

But more than a year is needed to turn slaves of a tropical land into fearless warriors and hardy settlers. The plain of Paran, "that great and terrible Wilderness," as Moses calls it, was too stern for the mass of the people, in whose memories the green valley of the Nile was still fresh. The low, sparse growth of the desert, the carefully treasured water, the monotonous diet, made them restless and discontented, till at length, helped on by the ruffraff of Egyptians, the "mixed people," who had followed in the train of the escaping bondsmen, they broke into open mutiny. The cry of the rebels is very childish and withal very human. We can feel the barren heat of the desert in the querulous words, "We remember the fish we did eat in Egypt freely, the cucumbers and the melons and the onions." The traveler to-day in Egypt brings home these same pleasant memories.

The Seventy Elders

Before this menacing uprising of thousands of men and women little better in control and endurance than children, the leader is for the first time discouraged. They had moved off on this last stage of their journey so proudly that it must have seemed to him their dangers were nearly past, but here was a menace greater than any outward foe, and the gravity of the situation leads to a further step in the organization of the nation. There are already seventy judges. Now are chosen seventy elders who are to be teachers, prophets, as well as executive officers. It is with the ordaining of these seventy that occurs one of the happiest and most characteristic incidents in the career of the lawgiver. Two of these elders had been absent from the service by which they were to be set apart and endowed with the "spirit of Moses." But seeing need of wise words in their part of the unruly camp, they nevertheless spoke out to the best of their ability, and spoke with such power that the news of their influence reached Joshua, one of the most devoted of the leader's helpers. Full of anger at this uncanonical assistance, he brought the news to his master, crying, "My Lord Moses, forbid them!"

Moses' reply has the splendid self-forgetfulness and calm of George Fox and John Woolman. It could have come from the pages of either Quaker journal. "Enviest thou for my sake? Would God that all the Lord's people were prophets, and that the Lord would put His spirit upon them."

A few months more of this hard and anxious life, and they would be within the lovely land of their fathers. So the leaders believed. Little did they foresee the heart-sickening disappointment before them, the dissension and disaster, the forty long years of waiting and learning. But with such a spirit no disaster could dismay, no disappointment crush. Moses and "his young man Joshua."



Mrs. Dairyfarm—"I declare, I never saw anything like the easy way I can wash all these greasy milk pans. I used to have to scald and scrub them. But Fels-Naptha Soap just makes the dirt disappear and it's no work at all!"

Anty Drudge—"I told you so! And no carrying heavy pails of hot water either! I guess you're glad you took my advice."

With cool spring water, Fels-Naptha Soap, and no tire-some scrubbing, milk pans will shine like new.

Fels-Naptha Soap is just as good for all housework. The weekly wash will be on the line in half the time it used to take, and you won't be all tired out with hard rubbing up and down on a washboard. The clothes don't have to be boiled, either, because Fels-Naptha Soap works best in cool or lukewarm water.

Just follow the directions on the Red and Green Wrapper.

Fels & Co., Philadelphia



The Corn Lady

The Corn Lady Writes to Her Sister, Who is Teaching Her First Country School, About Real Language Work

DEAR SISTER SUE—You are just the same sunshiny girl as ever. I can tell that from your letters, for you declare you have the best pupils and the best people anywhere. Better be careful what you say. Remember, your big sister thinks there is another country school that is hard to beat. But I'm glad you like yours, and there's no surer way of finding out the goodness in people than to be looking for it, and to be reflecting a good quantity of it yourself.

You say you are worried about your language work, that your pupils don't seem interested in it, and that you are surprised at the lack of spelling, punctuation, capitalization and, most of all, in the lack of clear expression of thought that they show. Well, have you noticed what you have been asking them to write about? No person in the world can write clearly unless they are trying to express something they know about, something which is a part of their own life. Yet we expect our boys and girls to write well on "The Rubber-Trees of Africa" or "The Walls of China." We deserve to get poor work when we use no better judgment than this.

If we want good results in our language work we must ask our pupils to write about the things of their own lives in which they are vitally interested, and about which they have something real to say. I have had each pupil choose some subject related to the farm or the farm home, and we are going to make some Language Booklets for our Farm and Home Evening. We are going to talk our subjects over with the people in the district and township who are authorities, look them up in books, farm bulletins and farm journals, and try some experiments of our own too.

These are some of the subjects that the girls have chosen:

- "A Dinner for Thrashers," giving men and recipes in right amounts and showing balanced ration.
- "A Modern Farm Kitchen," telling labor-saving devices used and cost of each, size, arrangement of furniture, sanitation, etc.
- "Sweeping and Dusting," the right way to do this, and reasons.
- "How to Do Common Things," a series of short compositions on washing dishes,

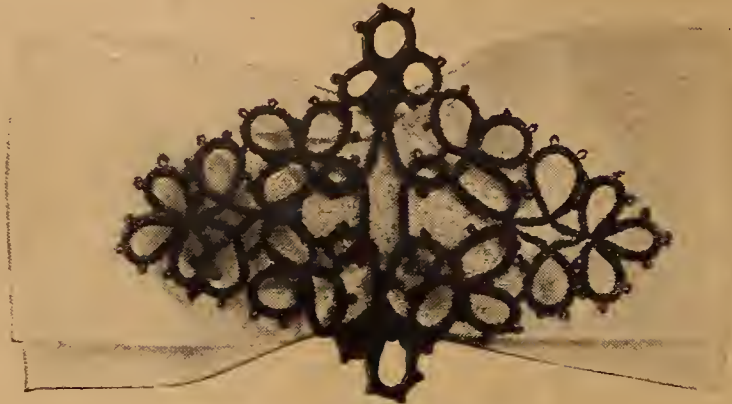
- making beds, etc. This is for the primary children.
- "Music in a Farm Home."
- "Poultry-Raising for Profit."
- "What is Good Bread?" taking up the bread score-card and explaining the points.
- "Why Fried Food is Not Healthful."
- "Getting Rid of Flies."
- "Why I Sleep with Open Windows."
- "The Way I Keep My Room."

The boys, too, have some interesting subjects:

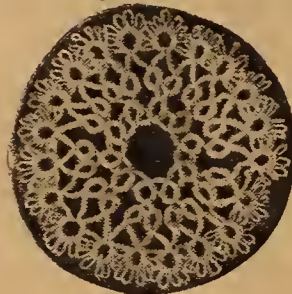
- "My Experience with Pigs," by a boy whose father gave him the "runts," and who succeeded in raising some good pigs from them.
- "The Plan of Crop-Rotation on Our Farm," telling the rotation used on each field for the past five years.
- "The Growing of Alfalfa," selection of

- seed, method of preparing seed-bed, time of seeding, etc. Value of the crop.
- "How to Make Good Roads," being an explanation of how to make the split-log road-drag and use it.
- "Selecting, Storing and Testing Seed-Corn."
- "Feeding Beef-Cattle."
- "The Care of Horses."
- "The Way I Trained My Colts."
- "The Kind of a Farmer I Expect to Be."
- "How We Made Our School Grounds Beautiful."

Dainty Tatting Trimmings—By Mrs. M. S. Buell



Collar ornament of tatting



Tatting medallion



Edge of tatting and crochet

Directions for making these three designs will be furnished upon receipt of four cents and a stamped, self-addressed envelope. Evaline Holbrook, Farm and Fireside, Springfield, Ohio

We assure our readers that these directions will be easy to understand and follow. In case of difficulty, however, Evaline Holbrook will be very glad to supplement them by further advice

When we have studied hard on these chosen subjects, each pupil will make a Language Booklet, written carefully and illustrated with drawings and clippings. Results of experiments will be given, and a cover with an attractive and appropriate design will be made. These will not be sent to printer or binder, but will remain our own handiwork as well as our own brainwork. We are only going to make these Language Booklets once each year, so we shall put our very best and most enthusiastic work into them. We want careful writing, punctuation and all. But above these technical things we are just going to get so interested in our subjects and so full of them that we shall really write something worth while.

Can't you have your pupils try this too? Then I will have some of our booklets mailed to you, and you can mail some of yours to us, and so we can compare our work and get new ideas. Of course we shall send them back again, for the boys and girls will prize their booklets and want to put them away to keep. We are going to have some really fine work, and I wish you could see how interested some of the fathers, hired men, mothers, grandmothers and aunts are getting because of the questions they are being asked along some of these lines. They all know that school is interesting the children in their every-day work.

I suppose you have heard of the Oregon plan of school credit for home work. I think I'll try that this winter. Work just seems to be getting more interesting every day, doesn't it? And aren't these wonderful days to be walking home along country roads with the tangling riot of goldenrod and purple asters on the banks?

From your big sister, HELEN.

Vegetarian Suppers on the Farm—By Jessie V. K. Burchard

THE country seems the ideal place for a vegetarian diet to be followed, and at no time more so than in the "fall of the year," when fruits and vegetables are in their glory. Peaches, pears, apples, late blackberries, melons, sweet corn, Lima beans, tomatoes, peppers, cucumbers—who would not be satisfied to live a long while on these delicious foods exclusively?

Some recipes for dishes named in the menus follow, and doubtless the experienced housekeeper can supplement them with many more equally good.

Corn Fritters—Select corn that is well grown but tender; cut and scrape from the cob the pulp of eight ears. To this add a teaspoonful of salt, a little pepper, the beaten yolks of two eggs and, last, the whites beaten very light. Fry by spoonfuls in a spider, browning the little cakes nicely. These are delicious, but are made tough by the addition of milk or flour.

Candied Sweet Potatoes are quickly prepared by slicing cold boiled or baked potatoes half an inch thick and laying the slices in a pan large enough to hold them in a single layer. Spread the slices with melted butter, sprinkle sparingly with salt and pepper and liberally with sugar, and let bake in a moderate oven till brown.

Cabbage-and-Green-Pepper Salad is refreshing for a warm day, and is very simple in construction. Chop cabbage fine, add one fourth as much chopped green pepper, moisten with French dressing, and serve on lettuce-leaves very cold. A little chopped parsley may be sprinkled over each serving. The busy woman will find it a help to make up a quart of French dressing at one time and keep in the refrigerator, using as wanted. Fill a quart bottle two thirds full of good olive-oil, put in a tablespoonful of salt, a tablespoonful of sugar, half a teaspoonful of paprika, and fill up the bottle with a good, mild vinegar. I like to add to my dressing half a teaspoonful each of cel-

ery-salt and onion-salt, but the best way is for the individual taste to be consulted, and let each housewife make it as her family likes it.

A recipe for Apple Sauce seems superfluous, and yet there are so many people who make a task of this very simple and healthful dish. The method I recommend to your notice is to wash the apples and cut them up, skin, seeds and all, discarding only the decayed and imperfect parts. Put them over the fire with as little water as possible, according to the juiciness of the apples, let them cook slowly till tender, then pour into a sieve, and use a potato-masher to force them through. In a few minutes the pulp will be in the dish below, while the skins and seeds alone remain in the sieve. Sweeten to taste, adding a very little salt, and nutmeg or cinnamon if liked.

Souffle Potatoes—Bake twice as many potatoes as you need at dinner-time, cut a thick slice from the top of those you wish to prepare in this way, scoop out the inside, and wash it thoroughly with butter and cream, salt and pepper, refill the skins, and set away till supper-time, when they are browned in a hot oven.

French-Baked Potatoes are like French-fried, only done in the oven. Put enough lard into a dripping-pan to make about an inch in depth when melted, set in a hot oven, and let it get very hot. Cut potatoes into eighths lengthwise, put them into the hot lard, and let them bake till they are tender, stirring often; drain on soft paper, sprinkle with salt, and serve hot.

Deviled Tomatoes are excellent, and make quite a substantial dish. Peel and slice tomatoes, sprinkle with salt and pepper, dredge with flour, and fry in butter. Place on a hot platter, and pour over this dressing. Four tablespoonfuls of butter creamed with two tablespoonfuls of powdered sugar, one teaspoonful of mustard, one quarter of a teaspoonful of salt, a little cayenne and the yolk of a hard-boiled egg; add one egg slightly beaten and two tablespoonfuls of vinegar. Cook over hot water till it thickens, stirring all the time with a silver or wooden spoon.

For Corn and Green Peppers cut the corn off the cobs, scraping all the pulp off the cobs, mix with half as much minced green peppers, a good lump of butter and

seasoning to taste; put into a casserole, cover, and bake in a moderate oven for fifteen minutes, then take the cover off, add a layer of buttered crumbs, and let them brown. Serve from the casserole.

For Lima-Bean Salad use any cold cooked Lima beans that are without milk or any other dressing, add a little minced onion and chopped green pepper if liked, moisten with French dressing, and serve on lettuce-leaves.

For Sauce Tartare to serve with cold baked beans, stir into a cupful of boiled salad-dressing half a medium-sized onion, two small sweet pickles, a few sprigs of parsley and half a dozen olives, all chopped fine.

Corn Chowder is a very substantial dish and should be served on a cool night. Put a large spoonful of bacon fat into a frying-pan, and when hot put in a medium-sized onion cut into thin slices, cook till soft and yellow, add a pint of water, and let simmer. Pare four or five potatoes, slice thin, put in a pan, pour over them the water from the onions, add more water if necessary, and cook till potatoes are tender. Then add a pint of green corn cut from the cob, a pint of milk, and salt and pepper to taste. Mix well, let it get very hot, stir in a spoonful of butter, and serve.

To Make a Stuffed-Tomato Salad is a good way to use left-over vegetables, such as beans or peas, combined with cucumber, celery and peppers, and moistened with French or boiled dressing. Fill into hollowed-out tomatoes, and top each with a spoonful of dressing.

For Sweet-Potato Puff bake or boil the potatoes well, season with salt, pepper and a little sugar. Add butter, a little thick cream, the beaten yolks of two eggs (to a pint of potato) and, last, the whites, beaten very light. Put into a buttered baking-dish, and bake in a moderate oven till puffy and light brown.

Corn Fritters	Tomato Salad	Corn and Green Peppers in Casserole
Cottage Cheese	Graham Bread	Souffle Potatoes
Peaches and Cream		Lettuce-and-Egg Salad
		Baked Pears
Deviled Eggs	Candied Sweet Potatoes	Stuffed Peppers
Cabbage-and-Green-Pepper Salad	Cabbage-and-Green-Pepper Salad	Stewed Lima Beans
Apple Sauce	Gingerbread	Cole-Slaw
		Apple Float
Lima-Bean Salad	French-Baked Potatoes	Cookies
Pears	Cookies	
Fried Eggplant	Potatoes au Gratin	Corn Chowder
Combination Salad		Waldorf Salad
Baked Apples and Cream		Bread and Butter
		Gingerbread
Deviled Tomatoes	Potato Salad	Macaroni and Cheese
Peach Shortcake		Stuffed-Tomato Salad
		Peach Pie
Cold Baked Beans, Sauce Tartare		Succotash
Cucumber-and-Tomato Salad		Hot Biscuit
Hot Corn Bread		Cottage Cheese
Peaches and Cream		Cookies
		Sweet-Potato Puff
		Sponge-Cake
		Cabbage Salad
		Peaches and Cream

Autumn Gowns, Stylish and Comfortable

Drawings by May Fairchild



No. 2387—Long-Sleeved
Waist: Large Armholes
34 to 50 bust. The price of this long-
sleeved waist pattern is ten cents



No. 2391—Long-Shouldered Rus-
sian Coat
32 to 42 bust. Price of pattern, ten cents

No. 2388—Six-Gored High-
Waisted Skirt

24 to 40 waist. Width of skirt at bot-
tom in 24-inch waist, one and three-
fourths yards. This gown was es-
pecially designed for the stout
woman and has long lines that are
sure to be becoming to her. The
price of this pattern is ten cents

No. 2367—Three-Piece Skirt: Plaits
in Front

22 to 34 waist. Width of skirt at bottom
in 24-inch waist, one and three-fourths
yards. Price of this pattern, ten cents



No. 2395—Long-Sleeved Waist:
Large Armholes
32 to 46 bust. Price of pattern, ten cents

No. 2396—Three-Piece Skirt: Plaits
at Back

22 to 36 waist. Width of skirt at bottom
in 24-inch waist, two yards. The price
of this three-piece skirt pattern is ten cents



No. 2392—Waist with Double
Collar and Cuffs
32 to 46 bust. Price of pattern, ten cents

No. 2393—Three-Piece Skirt: Side
Closing

22 to 36 waist. Width of skirt at bottom
in 24-inch waist, one and three-fourths
yards. Price of this pattern, ten cents



No. 2347—Surplice Waist
with Single Rever

32 to 44 bust. The price of this
surplice waist pattern is two cents

No. 2348—Two-Piece Draped
Skirt: Front Closing

22 to 34 waist. Width at bottom
in 24-inch waist, two and one-half
yards. If the elderly woman wants
an especially nice gown for dress oc-
casions this one is sure to prove
satisfactory. The price of this two-
piece draped skirt pattern is ten cents

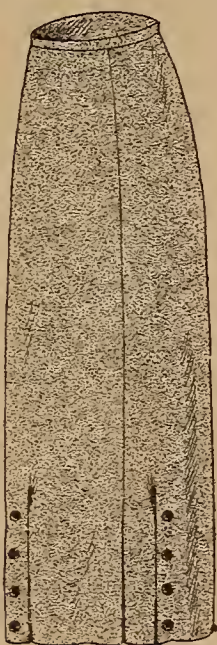
Problems of the Amateur Dressmaker

Answered by Grace Margaret Gould



No. 2355—Three-Piece Skirt:
Foot Plaits

22 to 36 waist. Material for 24-
inch waist, three and one-eighth
yards of thirty-six-inch material, or
two and one-eighth yards of fifty-
four-inch material. Width, one
and three-fourths yards. This skirt
may be made straight or caught in
with foot plaits. The price of this
three-piece skirt pattern is ten cents



No. 2216—Buttoned-in-
Front Dress: Large Armholes

6 to 12 years. The quantity of
material required for medium size,
or 8 years, three and three-fourths
yards of twenty-seven-inch mat-
erial, or two and seven-eighths
yards of thirty-six-inch material. This
pattern is especially good for a
school dress for fall, because the
waist is made with comfortable,
large armholes. The price of this pat-
tern for a little girl's dress is ten cents



What kind of a skirt can I make from a long cape of tan ladies' cloth? It is unlined and has seams over the shoulders and an extra shoulder cape

THERE will be plenty of material in your cape for a new skirt. I would suggest pattern No. 2355 for the skirt. This model is made in three pieces: two fronts and a wide back, the same number as you have in the cape.

The right front is wider than the left and has a deep hem on the edge. The skirt has seams over the hips and a broad, seamless back. There are caught-in foot plaits at the front. These plaits are made after the skirt is finished and give the fashionable drawn-in effect.

Buttons to trim the foot plaits and hold them in place could be covered with the tan cloth or made of brown velvet.

The skirt is quite narrow, measuring only one and three-fourths yards at the lower edge in the twenty-four-inch size.

If you care to do so, you can leave out the plaits, increasing the width at the

bottom and making the skirt perfectly plain. Should you decide on this style, I would suggest your stitching the hem on the edge of the right front and trimming it with two groups of three fancy brown bone buttons, one at the knee and the other at the lower edge.

In cutting out the skirt, place the pattern of the front with its front or straight edge several inches back from the front edge of the cape and have it come an inch or two up from the lower edge of the cape. In this way you avoid using in the skirt parts of the cape that might be a bit worn.

Fold the back of the cape with the fold directly in the center and place the back of the skirt pattern with the edge marked by triple crosses (XXX) on this fold. If there is any fitting to be done take in at the seams over the hips very carefully.

I have a flaring seven-gored blue serge skirt. Am anxious to make a school dress from it for my six-year-old daughter. What pattern can I use?

FIRST rip the center back seam of your skirt and take off the belt. Then press it well, and be sure to press the creases that have been made by the plaits in the back gores. I do not think you need rip all the gores apart. You will be able to cut the dress out just as well if the gores are together.

Use pattern No. 2216 for the dress. I am selecting this because the skirt is cut in gores. You would not be able to make a gathered or plaited skirt from the long narrow gores in your skirt. This little skirt is one of the new five-gored models. The right side of the front is wide and the left side of front and the side gores are narrow. There is a box plait in back.

You should be able to cut the right front of the skirt, the sleeves and the back of the waist from back gores of skirt, which are wide enough for them.

The fronts of waist, the left front, side and back gores of skirt and collar will fit nicely into the flaring lower sections of the narrower gores. Perhaps you will have to cut the belt on the cross of the material, but that will not matter very much. Lay it along the selvage edge of one of the side gores and be sure that it is straight on the material.

If you cannot cut a hem on the skirt from the pieces of material, cut off each piece three eighths of an inch below line of perforations indicated on pattern and face skirt with pieces of serge cut from upper sections of front and side gores.

You can introduce a bright touch of red or green by scalloping the edges and embroidering them as shown in the illustration, or you could cut all the edges straight and pipe them with plaid or striped silk cut bias of the material.

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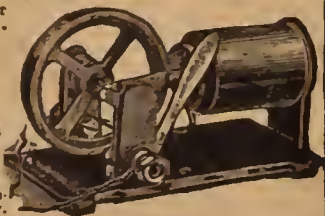
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A Whale-Hunt

The Story of a Boy, a Cannon and a Hay-Pitcher—In Two Parts

By D. F. Getchell

Illustrated by R. Emmett Owen

Part II.

THE men in all the boats stopped rowing, as out of the water not thirty feet from the Salmon Bluff craft rose a black mass side on. The details of what happened next differs in the stories of the twenty excited onlookers, but all agree that Captain Sam came down on the percussion cap of the cannon with his ready hammer. There was a roar, and the cannon sprang back into the bottom of the boat, almost knocking the gunner overboard.

The whale gave one mad roll and then sprang forward with a terrific plunge. The Captain's craft was carried against the nearest Onslow boat, smashing her rival's oars and fowling her anchor-rope hanging over the bow. Luckily, the Captain's careful arrangement of his coil of rope served now to good purpose, and the line was jumping free of the tub in round whirls as the great fish tore toward the upper bay.

But the harpoon-line was a very short one, and Captain Sam immediately realized that before he could get clear of the Onslow boat the coil would be run out. He also saw to his horror that someone had foolishly tied the free end of the rope to a seat, and as a result in a moment the tangled boats would be whirled away and probably pulled under water. He yelled to Uncle Jim to grab the hatchet near him and cut the rope. Uncle Jim seized the hatchet and made a blow at the leaping rope, but the hatchet was instantly jerked out of his hand and disappeared overboard, while he spun around and almost fell into the water himself.

Bill was near him. Suddenly it flashed into his mind that there was something he must do. Drawing his keen-edged jack-knife, he almost severed the rope with one cut at the knot near the seat, but before he could make a second slash all the coil had run out. Both boats gave a plunge, knocking everybody down, then the weakened line broke where Bill had slashed it and whipped out of sight, carrying Uncle Jim's hat in the curling end.

It all happened in a moment. The boats were huddled together, peacefully rocking in the slowly growing ebb-tide.

Captain Sam spoke first. "Why didn't you blame Onslow fellows keep out of my way?" he yelled. "If it hadn't been for you we'd be in tow of that whale right now."

"If you and your fool cannon were in Jericho we'd have scared that whale up on the flat," was the angry rejoinder.

"By Ginger!" interposed Uncle Jim. "I reckon the whole crowd of us ought to take off our hats to Bill here for saving us with that jack-knife of his, but then I can't take off my hat, as the whale did that."

Uncle Jim's remark turned attention to Bill and served to keep the peace, but Captain Sam was in a fighting mood. "I don't see what you fellows are kicking about anyway," he went on. "I've scared that whale up on your flats."

His remark might have led to further recriminations had not young Bill, who was thinking of nothing but the lost whale, suddenly let out a loud yell.

All eyes turned in the direction he was pointing and saw a foaming mass of water not a hundred yards away bearing straight down on the Salmon Bluff boat.

Captain Sam and Uncle Jim each grabbed an oar, but the heavy boat gathered way slowly, and to Bill's excited nerves it seemed that the monster was already upon them. But the Captain's efforts were in time, and the whale shot between the two boats, leaving a bloody wake that rolled over the gunwales. The frantic creature was heading straight for Allie's Gut, and as soon as it came to deep water its huge black tail shot up twenty feet into the air, and the vast body disappeared in a whirlpool.

That ended the whale-hunt. Twice in fifty years one of the monsters had been secured when stranded on the flats, but nobody had ever hunted and caught a whale in Cobequid Bay. None of the Salmon Bluff men, excepting Captain Sam, much less any of the Onslow farmers, had thought of actually catching a live whale, and they were all ready to give up the chase and go back to haying.

It is true that Captain Sam dared to suggest that they follow the whale beyond the Gut, but no Salmon Bluff farmer could imagine himself looking for a flying whale in a bay twenty miles wide. They were, in fact, well pleased that the adventure had ended where it had, and pleased to think of the good story they had to tell. In a short time

all the boats were hurrying homeward to escape the swiftly increasing ebb.

But there was one person who, saying very little, deeply sympathized with Captain Sam. Bill was woefully disappointed at the disappearance of the whale, and he kept his eyes glued to Allie's Gut, imagining every wave in the millrace now tearing through the Gut was the whale's spout. Even when the farmers were hard at work at their neglected haying he got the Captain's old telescope and scanned the bay until the great yellow flats lay bare and shining for miles. But no sign of the whale did he see.

That night he slept but little, and what sleep he did get was sadly disturbed, as he lived over in his dreams the excitement of the day. At four o'clock the gray dawn crept into his window from across the bay and found him wide awake. He glanced out and saw the broad, smooth surface of the tide, far run in the flood, shining in the cold light. He dressed hastily, and slipping quietly down-stairs got the telescope and scanned the bay. Almost immediately he gave a sudden exclamation and looked again. A great, black bulk was slowly drifting up stream a mile away.

A sudden determination seized him. Running down to the creek, he stepped into one of the heavy shad-boats which were already afloat and was soon pulling out of the channel of the creek.

It was hard work, for Bill was not used to heavy oars, but he managed to get past Big Flat into the swift flood-tide and went whirling up toward Onslow. He had been so busy with his big boat that he had hardly realized what he was doing, and he almost wished he had not come, when he awoke to the fact that he was alone in the middle of the great, silent bay. But the current gave him no chance to return, and he got up and looked about for the whale. There it was plain enough about a mile ahead, slowly drifting up-stream.

With difficulty he kept his heavy craft headed for the black mass, but he pulled until his hands were smarting with blisters. It was now broad day, and the sun was peeping over the Onslow hills. As Bill glanced ahead he thought he heard the sound of oars coming over the still water. He glanced again with anxiety and saw a boat heading into the bay from Onslow. He caught the rapid flashing of the oars, and it dawned on him that some early-rising farmers had spied the whale and were hurrying to secure it.

Bill remembered something in the "Cruise of the Cachelot" about a loose whale belonging to the person who first got hold of it. He bent to his oars in frantic haste, although every stroke made the tears stand in his eyes with the smarting of the salt water in his blisters. But he pulled away scarcely daring to look ahead. Now he could distinctly hear the quick "jog-jog" of the oars against the row-locks in the Onslow boat. He redoubled his efforts, and over his shoulder he could plainly see the black hulk of the whale on the waves.

Then he heard oars behind him, and saw a boat shooting out from Salmon Bluff around the end of Big Flat. He recognized Captain Sam's broad back as that of one of the rowers. But they were half a mile behind him. Hastily he took a glance at the Onslow boat and saw it was no farther from the whale than he was and shooting through the water under the quick strokes of two strong farmers.

In desperation the boy bent to his seemingly hopeless task. Suddenly he heard ahead an angry oath and a rattle of oars. He knew that something had gone wrong in his rivals' boat, but, too anxious even to look, he bent to his task with renewed energy. Just as he felt that he could make scarcely another stroke his boat stopped with a yielding motion, and he found her nosing along the edge of a black, slippery mass. Not fifty feet away an Onslow man was standing in the stern of his boat and wildly sculling with one oar, while his companion was as frantically paddling with a broken oar-blade.

Keeping an oar in his hand, the boy sprang onto the broad flipper, or fin, against which he had stopped. The boat sprang back as he leaped, and Bill found himself adrift on the upturned carcass of the dead whale.

"Here, you fellows keep off," he yelled at the Onslow men as they came alongside, "this whale's mine!"

"I reckon, youngster, it'll be easy for us to prove we got here as soon as you did," remarked one of them coolly as they worked their boat along toward the flipper.

But as they came up Bill, with a quick thrust of his oar, sent them flying off into the stream. "You won't get on here," he yelled, for he felt that while he was actually alone on the whale it would be his.

"Say, young feller," angrily shouted the man with the broken oar, "don't you do that again, or you're liable to get hurt. We're goin' to take that whale into Onslow, and don't you forget it."

"By Herons! not if I know it," a voice broke in. Bill looked up and saw Captain Sam and Uncle Jim coming around the whale's head. "By Herous!" went on the excited Captain, "you fellows had a lot to say about my old brass cannon, but I reckon it did the trick. And what's more, Bill here got on this whale first and it's his, and that ends the matter." So saying the Captain coolly climbed onto the whale and signaled to three other Bluff boats that were now hurrying across the bay.

Some time later Mr. Messenger, Bill's father, was exhibiting with much pride to his business friends in New York the following letter:

Salmon Bluff, July 30, 188—

DEAR DAD:
 Please find enclosed check for \$200 made in my favor by Samuel Watson to be placed to my account in savings bank.
 Your loving son, BILL.

Bill found himself adrift on the upturned carcass of the dead whale



The Housewife's Letter-Box

Do You Need Help?

Have you been looking for a special recipe for years? Do you need any information on household matters? And do you meet with little problems in the home that you wish someone would solve for you—someone who has had a little more experience than you? Then, why not make use of YOUR OWN department and ask the questions which have been troubling you? This department has proved that the spirit of helpfulness is abroad in the land, especially among the women of the farm. That our readers have the mutual desire to help one another is evidenced by the large and prompt response we have had to the questions which are printed here frequently. There is no payment made for contributions to these columns. All answers and inquiries should be addressed to "The Housewife's Letter-Box," care of Farm and Fireside, Springfield, Ohio.

If an immediate answer is desired, it will be sent, provided a two-cent stamp is enclosed.

Questions Asked

Will someone tell me—

What kind of feathers, and how many, to use in making a feather comforter, also what kind of cloth for the covering?
Mrs. M. O., Texas.

How to cook summer kale, or bar-cerole?
M. H., Ohio.

How to cut a five-sided quilt-block pattern?
A READER, Indiana.

How to cover a cotton felt mattress?
J. W. L., Nebraska.

The best way of cleaning dust and smoke from chenille portières?
Mrs. S. P. S., Connecticut.

How to remove butter-color stains from a gingham apron or dress?
Mrs. M. K., New York.

How to make good vinegar without cider?
Mrs. M. D., Pennsylvania.

How to make pickles green after they have been salted down, then soaked in water, and vinegar added?
Mrs. C. M., Pennsylvania.

What causes chrysanthemums to rust?
Mrs. J. S. W., North Carolina.

How to pickle onions and have them retain their natural color?
SUBSCRIBER, Massachusetts.

How to make the quilt-block known as "Odd Fellows' Links"?
Mrs. F. F., Ohio.

How to remove mildew from colored wash dresses?
Mrs. L. T., Ohio.

How to use Indian arrow and spear tips in making something suitable for the home?
D. H. L. R., New York.

Will Mrs. J. C. M., Washington, who contributed a recipe for cucumber pickles that will not shrivel, state whether the result would be the same if enough sugar were added to make sweet pickles? I have tried several recipes with poor success. They shrivel and are tough.
Mrs. J. V. W., New York.

Will someone please tell me how to make lemon sauce for puddings, also graham gems, and oblige?
Mrs. F. M. R., New Hampshire.

Questions Answered

For F. A. T., Wisconsin—

Honey Jumbles—Two quarts of flour, three tablespoonfuls of melted lard, one pint of honey, one-fourth pint of molasses, one and one-half level teaspoonfuls of soda, one level teaspoonful of salt, one-fourth pint of water, one-half teaspoonful of vanilla.

Oberlin Honey Cookies—Three teaspoonfuls of soda dissolved in two cupfuls of warm honey, one cupful of shortening containing salt, two teaspoonfuls of ginger, one cupful of hot water and flour sufficient to roll.

Honey Tea-Cake—One cupful of honey, one-half cupful of sour cream, two eggs, one-half cupful of butter, two cupfuls of flour, scant one-half teaspoonful of soda and one teaspoonful of cream of tartar. Bake thirty minutes in a moderate oven.

Mrs. Barber's Honey Cookies—One large teacupful of honey. One egg broken into the cup the honey was measured in, then two large spoonfuls of sour milk, and fill the cup with butter or good beef dripping. Put in one teaspoonful of soda and flour to make a soft dough. Bake in a moderate oven a light brown.

Honey Fruit Cake—Take one and one-half cupfuls of honey, two-thirds cupful of butter, one-half cupful of sweet milk, three eggs well beaten, three cupfuls of flour, two teaspoonfuls of baking-powder, two cupfuls of raisins, one teaspoonful each of cloves and cinnamon.

Mrs. Minnick's Soft Honey Cake—Put scant teaspoonful of soda in teacup, pour five tablespoonfuls of hot water on the soda, then fill the cup with extracted honey. Take one-half cupful of butter and one egg, and beat together; add two cupfuls of flour and one teaspoonful of ginger; stir all together, and bake in a very slow oven.

Honey Cake—One quart of extracted honey, one-half pint of sugar, one-half pint of melted butter, one teaspoonful of soda dissolved in one-half teacupful of warm water, one half of a nutmeg and one teaspoonful of ginger. Mix these ingredients, and then work in flour, and roll. Cut in thin cakes, and bake on buttered tins in a quick oven.
F. M. W., Pennsylvania.

If Mrs. J. M. W., Ohio, will send her name and address to the Housewife's Club, she will receive directions for making portières of beads and paper.

How to Clean a New Soapstone Griddle, for Mrs. R. B. R., Pennsylvania—Rub hard with salt, let it heat slowly; if it still sticks it is not hot enough. A soapstone griddle requires a very hot fire. You will need no grease, and grease will spoil it.
Mrs. J. W. H., Michigan.

Will the lady who contributed the oak-leaf design in cross-stitch send her name and address to Mrs. Anthony Fisher, Lakeville, Ohio?

Subscriber, Taunton, Massachusetts—If you will send to the United States Department of Agriculture, Washington, D. C., and ask for Farmers' Bulletin No. 359 on the canning of vegetables, we believe you will get better help than you can get through the Letter-Box.

How to Prevent Paint Flaking Off Inside Window-Sash, for N. R., Connecticut—Clean off all paint, grease or dirt, using sandpaper; then use two or three coats of good paint, which must be thin, letting a week elapse between each coat.
W. K., Canada.

If Mrs. M. A. D., Iowa, will send in her full name and address, directions for knitting a child's sweater will be mailed to her.

Spanish Pork-Chops, for Miss M. M., Michigan—Put two pounds of pork-chops into a baking-pan with one cupful of hot water. Place in a hot oven, and bake one-half hour, basting often. Then take out, sprinkle with salt and pepper, and cover with one pound of onions, sliced thin. Bake fifteen minutes, then cover with one-half can of tomatoes, and bake again for twenty minutes. Put meat and vegetables on heated platter, pour gravy around meat, and serve at once.
Mrs. B. H. S., Ohio.

Baked Beans, for Miss M. M., Michigan—Four cupfuls of white beans cooked until the skins crack. Drain, and put in bean-pot or baking-pan, and add one pound of salt pork cut in cubes, two tablespoonfuls of baking molasses, salt and pepper, and water to nearly cover. Bake three hours or more.
Mrs. B. H. S., Ohio.

Southern Corn Pone, for Mrs. E. E. K., Pennsylvania—One cupful of white cornmeal, one teaspoonful of salt, one tablespoonful of lard, enough boiling water to moisten meal, two tablespoonfuls of cold sweet milk and one tablespoonful of sugar. Stir all together, beat in two eggs, and add two teaspoonfuls of baking-powder. Have buttered pan very hot, and bake in quick oven twenty-five minutes.
Mrs. B. H. S., Ohio.

Southern Beaten Biscuit, for Mrs. E. E. K., Pennsylvania—One pint of flour, one rounding tablespoonful of lard, one-half teaspoonful of salt and one-half cupful of milk or water. Put lard and salt into sifted flour, blend thoroughly, and add liquid; the dough should be thick and stiff. Knead until it blisters, roll as thin as possible, prick with fork and bake in quick oven.
Mrs. B. H. S., Ohio.

If Mrs. D. A. K., Michigan, will send her name and address to the Fireside Department she will receive designs for making quilt-blocks of the letters R and G.

If Mrs. C. M., Illinois, will send her name and address to Mrs. J. H. Parsons, R. D. 2, Quinn, South Dakota, she will receive a block of the Swastika quilt.

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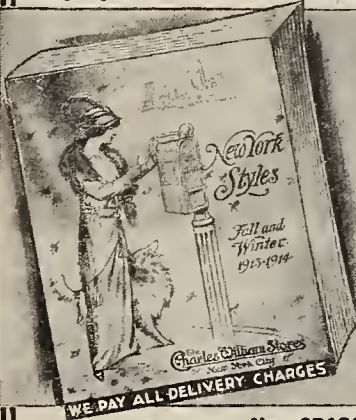
No. 24B2003—Women's Smart Tailored Outing Waist. Excellent quality striped flannel. Especially suited for early Fall wear. This waist has the natty roll collar and shoulder yoke, the manish set-in sleeves with their tailored cuffs, and other new style details that will appeal to every woman. Yoke is laced in front, effecting a pretty and chic trimming. Will wear well and launder splendidly, thereby insuring long service. Sizes 32 to 44 inches bust measure. Actually sold by other houses at \$1.25. State size. Our price prepaid. **75c**

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