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The Celery City—By Jennie Martin McDaniel

THE lovely little Florida town of Sanford is situated on the banks of Lake Monroe, that beautiful body of water through which the St. Johns River flows, and that travelers tell us bears a striking resemblance to the Sea of Galilee. Sanford is known as the Gate City of South Florida, and well deserves the name, since it is at the head of navigation of the St. Johns River, and is a railroad center as well, about half a dozen lines running from there in as many directions.

With its beautiful location, an ideal climate, and the surrounding country at one time a succession of magnificent orange groves from which abundant returns came annually, the future seemed indeed bright for Sanford. She bade fair to become a city of some size and importance; but a change came in a night. The disastrous freeze of 1895 was a blow, and it fell heavily. The thermometer went down, down, until it reached a point lower than had ever been known before by the oldest inhabitants. The orange trees, which were heavily laden with their luscious golden fruit at this season, were killed to the ground, and thus was swept away in a single night the mainstay of the town and the country around about. The people were disheartened. It requires years of toil and patience to bring an orange grove into bearing, and some had already spent the best years of their lives in doing this.

Up to this time farming of any kind had only been carried on in a very small way, as a sort of side issue, for every effort had been bent upon orange culture, which had been so eminently successful. Some new source of revenue must now be found, however, for the people to reestablish themselves in the financial world, and the returns must needs be quick, for there would be no orange crop to depend upon when another season should have rolled around. Then it was that the planting of celery began by a few and upon a very small scale as an experiment. It proved to be a successful venture. Encouraged by the lead of the pioneers in this new Florida industry, many joined the ranks of the celery growers from year to year. Now, in the vicinity of Sanford, there is a small army of them, and crops have increased accordingly. It is estimated that there will be a greater increase on acreage in the coming season than has ever been known before.

PREPARING CELERY FOR SHIPMENT

The soil is peculiarly adapted to the growth of celery. The country abounds in artesian wells, and the trucker may own his water supply. A flow of pure sparkling water may be obtained at a depth of about one hundred feet, and as the secret of the trucker's success lies in being able to regulate his irrigation, a practical system has been worked out. Terra-cotta pipes that are perforated at intervals are laid in the ground, and through these the water is carried through the fields. These pipes serve a double purpose, as they are drains in case of overflow, for the celery fields are in low lands.

A celery planter who cultivates from three to five acres with care and energy is sure of a good living, and is practically independent of the labor question, for he can do most of the work himself, and rest a good part of the year, too. The quality of the celery grown at Sanford is second to none, and is considered by many to be superior to any other. It is becoming known far and wide, and some day will be quite as famous as that of Kalamazoo.

The following figures indicate the production for the past season:

Number of crates of celery hauled by express	15,077
Number of crates of celery hauled by freight	108,873
Total	123,950

The average price per crate received by the shipper at Sanford was $1.75, making a grand total of $216,912.50 for Sanford celery growers.

Mere statistics are dry. The history of this little city reads almost like a bit of romance. These energetic, industrious people have bravely fought their way

[CONCLUDED ON PAGE 2]

VIEW OF THE FLORIDA CELERY FIELD

MINING AND FARMING

Solve Labor Problems With the Golden Rule

Two letters from coal miners lie on my desk. One covers two sheets of note paper, the other many sheets of letter paper. The first tells me about his success as a farmer on five acres of land, a success of which he may well be proud. Among other things he says:

"Last year was the first year I stayed on top of the ground since I began mining twelve years ago. I have been quitting two years—that is, working in the mine only part of the time—but now I am out for good, and my wife is more than glad of it. The past year we have sold something over four hundred dollars' worth of chickens, eggs, vegetables and fruit off the place, besides had all of the best sort of stuff to eat that we wanted. We shall do better as we get experience."

Further on he says: "Mining is hard work, and it makes many of the fellows a little rough, but they are all right at heart. Lots of them never drink a drop of spiritous liquors, and lots more are very temperate about it, and all the better class are looking forward to the day when they can come out and stay out. They earn every cent they get, and it is necessary to have a union to get fair treatment. Some people seem to think we are unreasonable in our strikes, but if they fully understood things as we do they would decide that we are very reasonable. You know that everything we get from the trusts must be wrung from them. They are not going to give up any of their advantages without a bitter struggle. And the same can very nearly be said of the operators, especially the large companies. I will admit that at some of the mines they have cracked the heads of some who tried to break a strike, but it is hard to control some of the rougher fellows, same as it is in a game of football. I think that the rough work of this character is about ended. Operators have learned that it is better to be fair in their treatment of a lot of miners than to force them out, and then try to fill their places with men who will work for the price of a drink if they can't get any more. I think you have the right view of the matter. The union will become stronger and operators will deal more fairly, and if both sides exhibit a spirit of fairness, instead of seeking to get an advantage of each other, there will be no more strikes. I have always contended that the unions should select men for officers who are known to be fair, and know that the operators have rights that should be respected, and the operators should put up men to represent them who are known to be in favor of a square deal all around. A square, open deal is always right. Underhanded pettifogging and cheating either by secret deals or so wording contracts as to place the other party at a disadvantage is always wrong, and the party that works that sort of game always loses in the end."

THE SQUARE DEAL

The above is one of the best letters I think I ever received. This man is as near the Golden Rule as anybody is likely to get. The square deal is always a winner. A man, or body of men, may secure a temporary advantage by some sharp practise, but in the end they lose much more than they gain, and also lose the respect and confidence of the injured party. In all deals thereafter they are suspected of treachery and double dealing and treated accordingly.

I know a man who wrested a political office from another by forging protests and letters of a libelous character, which were accepted by the congressman as genuine and without question, and who, when he saw his error, destroyed them to keep himself out of trouble and put an end to the incident. The man still holds the office, but that something that works unceasingly for justice has dogged his footsteps all along. He has gained nothing but the contempt and distrust of those who were his best friends, while trouble has beset him to the right and to the left, and the end is not far off. A square deal is always best. It leaves no sting, no outraged conscience. And there is no avenging Nemesis harrying one through life, destroying all pleasure with a vague fear and disquiet that will not down. It is far better to lose fairly than to win unfairly or by treachery or villany.

MINER'S TROUBLES

The other letter mentioned goes into all the details of mining. The writer desires to show the justice of the demands of the miners, and he introduces many side issues, some of which have little bearing on the subject. There is no question that the immigration from southern Europe has been encouraged almost wholly by the operators of the coal mines. They have tried to flood this country with cheap labor to crush the miners' organizations in order to make a larger profit on their product. There may have been instances where an operator has voluntarily raised the wages of his men, but it is plain to anybody who cares to investigate the matter that the greatest efforts of the operators, big and little, have been to beat down wages by any means they can employ, from lockouts to flooding the country with the least desirable class of immigrants on the face of the globe. There have been measures introduced into Congress for the restriction of immigration, but they have always met with the solid opposition of mine operators and all who can use that class of labor to increase their profits. This opposition has been effective because people have been kind enough to send to Congress the men who are most interested, or those who can be interested. These interests control most of the leading dailies throughout the country, and are able to create sympathy and win votes, and so control legislation. I have always thought it unfortunate that labor has been compelled to so largely depend upon the "yellow" press to show up its grievances. There are a few notable exceptions. The labor organizations could advance their interests immensely by securing control, or the championship, of more of the higher-class dailies.

NIAGARA FALLS

This correspondent hopes that the "harnessing of Niagara Falls" will go on despite the opposition of those who favor the preservation of one of the grandest natural wonders in the world. Last summer I took my little girl to see this great cataract, then on down the great gorge, Lake Ontario and the beautiful St. Lawrence River to Montreal, and Niagara is the one thing she remembers most vividly. She has set all of her little schoolmates wild to see it. I don't see how any one who sees it can desire for a moment its destruction. I am glad to know that steps are being taken to preserve it for all time. If all the water that comes down Niagara were to be used for the production of electrical power, how long before one company or trust would control every volt?

FRED GRUNDY.

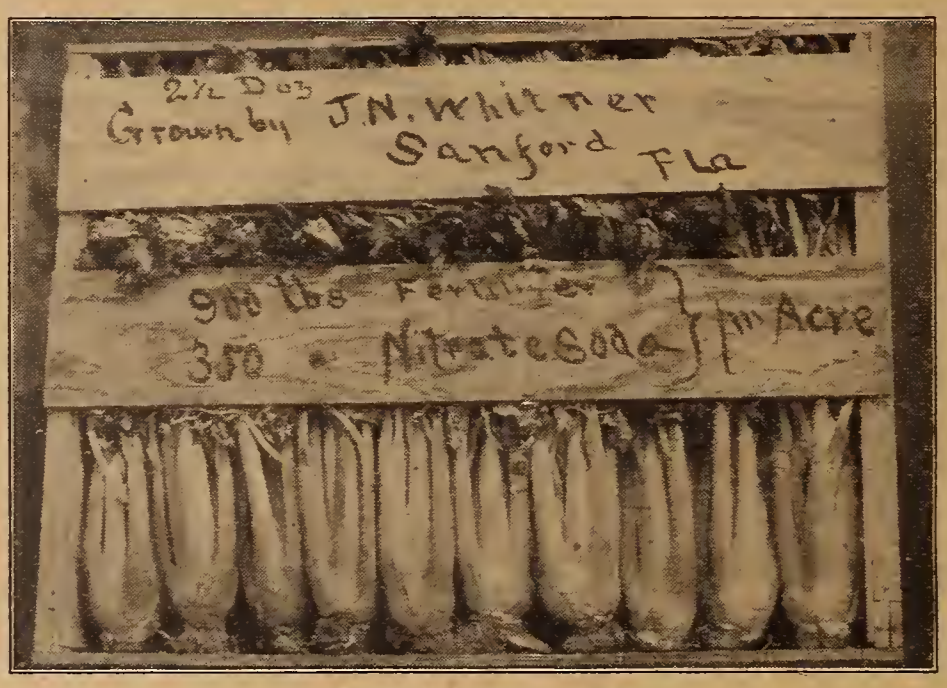
THE PRODUCT OF OUR DAIRIES, STOCK FARMS AND GRAIN FIELDS IN 1906

Just how vast is our national production of meats and "dairy goods" is shown by the official figures of our export of these commodities during the year 1906. In addition to the immense amount produced for home consumption, we sent abroad last year two hundred million dollars' worth of meats, thirty-five million dollars' worth of cattle and a little over ten million dollars' worth of butter, cheese and milk. This is the most noteworthy feature of our export trade in agricultural products, indicating an increase of sixty per cent during the past decade.

According to a recently issued census bulletin, at the close of the year 1905 there were in the United States 8,926 butter, cheese and condensed-milk establishments. These had a capital of $47,255,556, employed 15,557 wage earners, paid $8,412,937 in wages, reported the cost of materials at $142,920,277, and products valued at $168,182,789. Of the total number of establishments, seventy-four per cent were located in the states of New York, Wisconsin, Iowa, Illinois, Minnesota and Pennsylvania. These states reported products valued at $113,799,670, or sixty-seven and seven tenths per cent of the total for the United States. New York ranked first, with products valued at $31,047,776, and Wisconsin second, with products valued at $29,994,791. Nine states reported the manufacture of more than 20,000,000 pounds of butter each, Wisconsin leading with 89,155,975 pounds. New York and Illinois, with half the total number of establishments, produced 195,905,407 pounds of the total condensed-milk product. New York, Wisconsin, Ohio, Michigan and Pennsylvania reported 287,880,391 pounds of cheese, New York leading with 132,836,482 pounds.

The increase in the number of flour-milling establishments has also been phenomenal. At the same date, according to the bulletin already quoted from, there were in the entire country 10,051 merchant flour and grist mills in the United States in 1905, with a total capital of $265,117,434; they manufactured products to the value of $713,033,395. The amount of grain reported as used was 754,945,729 bushels, valued at $585,065,067. There were 131 establishments manufacturing starch as their principal business in 1905, and their products were valued at $8,082,904. This industry shows a great decline as compared with 1900, which is attributed to a falling off in the export trade, due to a large increase in the manufacture of potato starch in Europe, particularly in Germany and Russia. The three principal starch-manufacturing states, named in order of value of products, were Indiana, with $2,048,072; New York, with $1,561,913, and Iowa, with $1,063,055.

Our government and people are invited by the Dutch government to be represented at the Third International Dairy Congress, which will meet at the Hague from the sixteenth to the twentieth of September next. The congress will be similar to former congresses held at Brussels and Paris in 1903 and 1905, and will include three sections, as follows: 1, legislation; 2, hygiene; 3, industry. An international agricultural exhibition will be held at the same time. The exhibition will include cattle, dairy produce, horses, pigs, sheep, goats, poultry and tame rabbits, bee farming, agricultural products, the cultivation of heathland, forestry, land improvement and river fishing, state protection of agriculture, newest discoveries in agricultural machinery and horseshoeing. Dr. A. J. Swaving, 88 Lange Voorhout, The Hague, Holland, is the general secretary, to whom all communications relating to the exposition should be addressed.



A CRATE OF FLORIDA CELERY

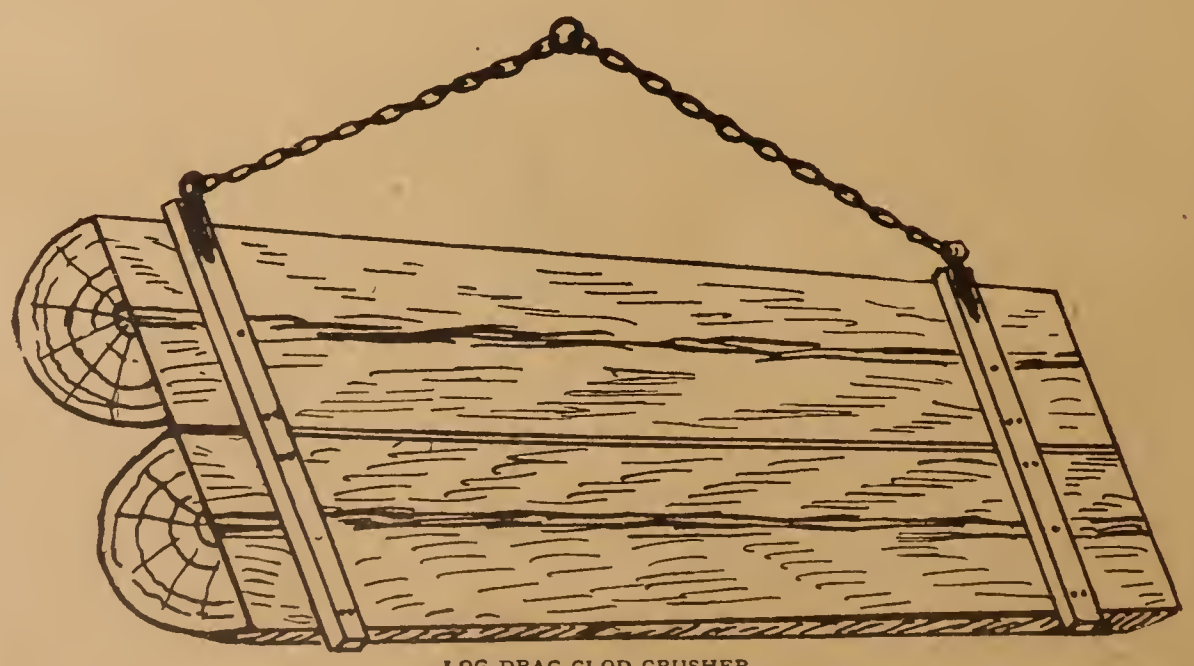
A LOG DRAG CLOD CRUSHER

I have used about every kind of drag, or smoother, but never until we put one together as a last resort to crush a field of sun-cured clods in the fall have I seen anything like the one represented in the illustration. As to appearance it isn't picturesque enough to attract attention, however unique it may be, but for utility, well, as to those I have used, it has them all beat clear around a quarter section for crushing clods; not just breaking them, but mashing and grinding them up into dusty and molecular infinitesimalness. With enough horse power in front of it, and, if necessary, some added weight, this log drag will break down and pulverize any field of clods that were ever turned up by a plow.

It may be made eight feet long or more, although six feet makes a good draft for a team if the log is sizable. Select a straight hardwood log twelve or more inches in diameter as nearly the same size at both ends as possible, and saw in two equal halves. If the wood is straight-grained you may be able to split it well enough with maul and wedge, but sawing is better, and it will be an advantage if you can take it to a sawmill and have it halved. Fasten together with crosspieces as shown, and if a heavy log, use three or even four crosspieces two by six inches, firmly spiked. Secure eye straps with lag screws, attach spreader chain with clevis to each end, and it is ready for use.

In the spring this is better than a roller, since it serves the purpose of breaking the clods, leveling at the same time, and does not pack the ground, which is often a disadvantage.

RICHARD MAXWELL.



LOG DRAG CLOD CRUSHER

THE CELERY CITY

[CONTINUED FROM PAGE 1]

from poverty to prosperity, and Sanford is rapidly returning to her former glory, and will once more take her place with the coming cities of South Florida. For ten years after the depression there was not a single house erected, nor a coat of paint applied to those already there. Immense brick buildings on the principal streets stood vacant for years, but now they are being occupied by prosperous business men, and the music of the saw and hammer is heard on every hand, while right merrily the work of renovating a dilapidated town goes on. Sanford has taken on new life, and celery is the stimulus. Shall we not call it, then, "The Celery City?"

A firm recently wanted to advertise something in FARM AND FIRESIDE, and stated that it was "Free." We investigated the matter, and found that the article was not free, but that our people would have to do a certain amount of work to get it. Do you know what we did? We said, "You cannot put that advertisement in FARM AND FIRESIDE if you say it is "free;" there must be no "Ifs nor Ands." That's how we protect our people against fraudulent concerns. You need have no hesitancy in writing to any advertiser in FARM AND FIRESIDE. If any one should not treat you right in any way, just let us know.

COST AND EFFICACY OF SPRAY MIXTURES

At the recent New York State Fruit Growers' meeting at Penn Yan, Professor Parrot (Geneva station) gave the comparative cost of spray mixtures as follows:

Bordeaux, 50 gallons	$ .28
Bordeaux and ¼ pound Paris green, 50 gallons	.44
Bordeaux and three pounds disparene, 50 gallons	.80
Lime-sulphur wash, 50 gallons	.50
Lime, sulphur, sal soda, 50 gallons	.70
Lime, sulphur, caustic soda, 50 gallons	.81
Kerosene, limoid, 10 per cent oil, 50 gallons	.82
Kerosene, limoid, 15 per cent oil, 50 gallons	1.25
Lime, sulphur, 20 per cent oil, 50 gallons	1.64
Scalecide, 5 per cent oil, 50 gallons	1.25
Scalecide, 8 per cent oil, 50 gallons	2.00
Scalecide, 10 per cent oil, 50 gallons	2.50
Crude petroleum, 50 gallons	5.50
Kerosene emulsion, 10 per cent oil, 50 gallons	.85
Kerosene emulsion, 25 per cent oil, 50 gallons	1.56
Crude-oil emulsion, 10 per cent oil, 50 gallons	.87
Crude-oil emulsion, 25 per cent oil, 50 gallons	1.67

This statement of prices, however, does not tell the whole story. At first glance it would appear that the cost of crude petroleum is so much out of all proportion with the cheap lime-sulphur wash as to take it practically out of consideration. Yet the cost of treating an acre of apple orchard in Youngstown, Niagara County, New York, was found by the New York Experiment Station people to be only $17.30 an acre when sprayed with crude petroleum, to $10.80 an acre when sprayed with lime-sulphur wash.

This is to be explained partly by the fact that it takes at least five times as much lime-sulphur wash, and possibly even more, to do a thorough job than crude petroleum, and partly by the saving of labor for the preparation of the spray material when we use petroleum. I feel safe in stating, too, that one gallon of clear petroleum will do about the same work that we can expect from two gallons of miscible oils on the market. With the large orchardist the point of first cost must and will always be of much and even paramount importance. For the owner of a small orchard or of a few trees this point of cost is largely overshadowed by that of convenience in securing and applying the remedy, and of the wear and tear of spraying apparatus or other equipment, this wear and tear being reduced to a minimum when we use oils, either clear or miscible, and reaching its maximum (in fact, a very considerable figure) when spraying with lime-sulphur wash, as this is so corrosive in its nature as to require the utmost carefulness in its manipulation and application.

The use of either the lime-sulphur wash or of crude petroleum is attended with some risks. In deciding which to select, the user must do so with a full understanding of their true nature and qualities.

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REPRESENTING AGRICULTURE

At one of our recent Farmers' Club meetings the new member for the Thirty-fourth Congressional District, Mr. Peter A. Porter, paid his respects to his constituents in a neat speech, saying that he felt under no obligations to any political machine, and would take his orders from no one save his constituents, the farmers of his district, who had so generously supported him in the last election.

There is a ring of evident and genuine sincerity in Mr. Porter's words, and especially in his assurance that he will not forget "the good old cow" which served him so good a turn. Here in the western end of New York we feel that we have in Mr. Porter a true friend of agriculture, and we shall have no hesitancy to go to him with any of our troubles which can be cured by national legislation, confidently expecting that he will give his best efforts to our cause.

It is now up to the farmers of other congressional districts to exert themselves on behalf of the selection and election of true friends of agriculture for Congress. With a few more shining examples as given by the farmers of this Thirty-fourth Congressional District and of the state of New Jersey, we may well be assured that the American farmer will easily secure just such legislation as he may desire, and that, among other things, the absurd free-seed graft, as well as the selfish opposition to the much desired parcels post, will be wiped out.

USING PHOSPHATE ROCK

Some of our experiments have recently turned their attention upon raw phosphate as a source of supplying our crops with phosphoric acid, the element of plant food especially needed in the production of grain crops. As early as 1890 I mentioned in these columns that "floats," the ground South Carolina phosphate rock, might in some cases be used to advantage, especially for cereal crops and on land well supplied with humus, or in any case when sufficient time can be allowed for the phosphoric acid to become available.

At that time I knew of several cases of "floats" being used with very good results by Southern wheat farmers in place of the more expensive dissolved rock applied by their neighbors. The raw rock has nearly twice as much phosphoric acid as found in dissolved rock, and can be bought for about half as much money. In other words, we can buy about four pounds of phosphoric acid in raw phosphate for the same price as one pound of it in superphosphate.

Raw bone meal has been, and still is, used quite commonly as a phosphatic fertilizer for general garden and field crops. Of course, it also contains several per cent of nitrogen which is lacking in "floats." Be that as it may, however, it seems to me that the powdered raw rock is well worth even more attention than it now receives as a source of phosphoric acid for many special purposes.

The Ohio station has recently pointed out again the fact that the phosphoric acid in "floats" may be made available by the acids developed in fermenting manure. It is not unlikely that acid soils to which "floats" are applied will also slowly change the phosphoric acid from the insoluble into soluble forms, and in the same operation become sweetened. By using "floats" freely in our stables as absorbents, and thus charging our compost heaps with just the plant food of which they are "short," we cannot lose anything and will have a chance of gaining much. Phosphoric acid at one quarter its regular price is well worth consideration. T. Greiner.

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CABBAGES BY THE TON

What becomes of all the cabbage that the farmers are now raising?

Hundreds of travelers passing along the Racine and southwestern line of the Chicago, Milwaukee and St. Paul Railroad between Racine and the Fox River have asked this question time and again.

From this section of the Badger State the product of both the early and late varieties is shipped by the trainload.

If it depended on the recommendation of the doctors the truck men would not have the big market that they now have. For one may make the rounds of all of them to find scarcely one of them to speak a good word for this vegetable. They will say that for the human system it is low in nutrition, makes neither flesh nor blood, and if they don't come out with it plain and unmistakable, they will intimate that the stomach is better without it.

Despite this estimate of the pill makers, there has been a wonderful increase in the production of cabbage. The commission men, the grocers and dealers, and even the peddlers, will tell you so. All of them are keeping more in stock and are selling more than they ever did.

It is the chefs of the big hotels, the head of the cuisine of the dining-car lines, the restaurants and the thousand and one other eating places of the big cities that have caused the cabbage farmer to increase his acreage and to make his land yield more.

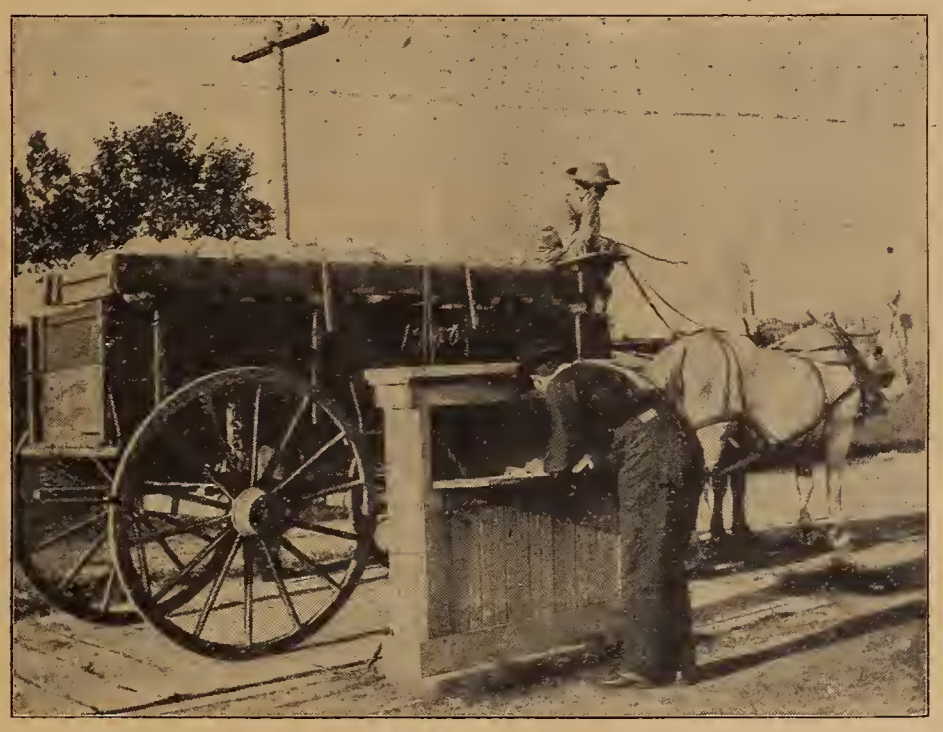
In recent years the cooks, the domestic-science people and even the home folks who have created new fads in cookery have set cabbage before a hungry man in scores of different ways. Where once a man was content with ham hocks and cabbage, corned beef and cabbage, or a dish of cold slaw, he is now found asking for it cooked in cream or in some one of many other ways of preparing it that have been invented in the last decade. The newest and best recipe books, even those that are issued by society people, who risk signing their names to the make-up of a delicacy, deal liberally with cabbage.

The physicians say that all of the hospitals taboo cabbage. But is there any doubt that many a convalescent about the time his appetite is ready to do business in the old frame once more fairly craves at least a mouthful of this vegetable that has been cooked with meat?

If a close observer will notice the people who are being served at dinner at which cabbage and meat together is on the menu card, he will find that the number of persons who order the combination is in excess of those who ask for beef or pork alone.

The eating-house men admit that there is a greater call for cabbage. The men who sell it say the same thing. But the best proof may be seen in the cabbage fields of Wisconsin during the cabbage season.

Here is the history of cabbage raising at one station—Union Grove. Less than ten years ago fourteen carloads were shipped from this station. The next year there were thirty-two, and the next sixty. Later there were one hundred cars, and from this it jumped to two hundred and fifty. Last year the product was expected to go to six hundred cars from this single station, but the bugs got hold of the late cabbage and cut down the output materially. It is estimated that one thousand acres adjacent to Union Grove were planted in cabbage. The product is almost entirely shipped to Chicago, whence it is distributed to many states, largely to the South, particularly to Texas and Mexico.



CABBAGES BY THE TON

In order to better fit the land for the production of this crop great quantities of stock-yard and feeding-pen manure are shipped to the different stations by the carload. It is hauled all the way from fifty to seventy-five miles. J. L. Graff.

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HOW THE STATE PROTECTS THE FARMER AGAINST FRAUD

In the early seventies of the past century the use of commercial fertilizers had become general in the United States. The necessity for testing the effectiveness of these, to protect the farmer against the tricks of unscrupulous dealers, has one of the chief impelling purposes in the establishment of agricultural experiment stations throughout the country, Connecticut leading the way in 1875. This prime need of protecting the farmer in the purchase of his supplies has never been lost sight of, although the work of the experiment station has broadened and progressed to a great extent. The annual expenditure for fertilizers in this country now aggregates more than fifty million dollars. In an article in a recent number of the "American Monthly Review of Reviews" John Phillips Street says of this fertilizer consumption:

"It was for the experiment stations to point out that a fertilizer was valuable chiefly for the available nitrogen, phosphoric acid and potash which it contained. Whether these were secured by the mixing of raw materials into a commercial fertilizer or through the natural processes of animal digestion, it was the amount of these fertilizing elements—elements which repeated experiments had shown were essential for plant growth—that determined the fertilizer's value. The use of commercial fertilizers being a new venture for the farmer, the multiplicity of brands, their frequently misleading names, and the tendency to utilize any sort of waste product, regardless of its fertilizing value, in the manufacture of fertilizers, soon made it apparent that a systematic inspection and control of these materials were necessary for the farmer's protection.

"Accordingly, laws regulating the sale of fertilizers were passed successively in every state east of the Mississippi, and in Arkansas, Louisiana, Missouri, California and Texas. While no two state laws are exactly alike, they agree in general in requiring that to each package of fertilizer shall be attached a statement as to its guaranteed composition, the name and address of the manufacturer and the net weight of the package. The inspection official is authorized to issue licenses or certificates allowing the sale of the fertilizer, to collect samples, make analyses of the same, publish the results, with such comments as he may deem necessary, and prosecute violators of the law. The laws differ in the amount and manner of levying the tax, the method of stating the guaranty, the materials exempt from inspection and the penalty for violation. While the inspection is committed to different officials in the various states—commissioners of agriculture, state chemists, and directors of experiment stations—the great bulk of the actual analytical work is performed in the laboratories of the experiment stations.

"The published analyses show exactly how much nitrogen, phosphoric acid or potash the fertilizers contain, and whether the amounts supplied agree with those promised by the manufacturers. In the early days of fertilizer inspection wide variations from the guaranties were common, arising either from carelessness or ignorance on the part of the manufacturer, or from a deliberate intention to deceive the intending purchaser. It must be admitted that even at the present time these variations have not ceased to exist, nor is it probable that they ever will, but deliberate fraud is the exception, not the rule. The publication of the results of the inspections permits the farmer not only to verify the guaranty given with the goods which he purchased, but also to compare its analysis with that of other brands, thereby affording him the opportunity of making a wise choice in his future purchases."

The question of the purity of cattle feeds is also of vital importance to the farmer, and here also the government in most of the states steps in and protects him against fraud. In 1897 Massachusetts passed a law requiring inspection of these feeds, and now most of the New England and Middle States have similar laws. Says Mr. Street in the article already quoted from:

"It is the inspector's duty, moreover, not only to ascertain whether a given feed satisfies its guaranty, but, in mixed feeds particularly, also to determine just what materials the manufacturer has used in compounding his mixtures. Some of these materials may simply be worthless, while others may be positively injurious. The detection of the adulterations practised and the publication thereof have resulted in almost driving the offending feeds out of the markets of those states having feed-inspection laws. An adulterated feed in the New England or Middle states is now very exceptional, and if such is found it is usually some new product whose sale quickly diminishes, if it does not entirely cease, after its analysis has once been published. In most of the states the following feeds are exempted from the provisions of the law: Hays, straws, whole seeds or unmixed meals made directly from the entire grains of wheat, rye, barley, oats, maize, buckwheat and broom corn, and wheat, rye and buckwheat brans and middlings. However, since very gross adulterations of wheat bran, feed and middlings with corncobs, broom corn and pulverized rock have been observed in several of the states, these feeds are also gradually being brought within the provisions of the law."

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FIXING ATMOSPHERIC NITROGEN

WHAT occurs when bacteria in the soil cause the decay of organic matter is not known. As to nitrogen we know that the bacteria living in the nodules of the leguminous plants are not the only ones that "fix" nitrogen from the air. Certain germs present and possibly aiding in the decay of organic matter have the same power. It must be remembered, on the other hand, that in the decay of this organic matter, part of the nitrogen is lost, sometimes as actual free nitrogen and sometimes in other forms. It must not be assumed that all the nitrogen absorbed by the roots of a clover crop, for instance, through the co-operation of the bacteria in the roots. is saved for the soil and for succeeding crops if the clover is plowed under. A large part of the nitrogen may escape again into the air, if the decomposition is not carried forward under exactly the right conditions to conserve it. If air is excluded too much, if lime or some other base is not present, or if too cold, a large part of the nitrogen may be lost. Again, the act of decay in the soil aids in setting free insoluble plant food. The decay of the stems of wheat or other grains gives rise to large quantities of carbonic acid, which act on the phosphates and possibly also on other insoluble elements, making them soluble and available to the plant roots in the immediate vicinity. Plant roots excrete carbonic acid gas as well, and all these factors act on plant food already in the soil. Decaying manure also makes the soil spongy, increases its water-holding capacity and does an amount of good not possible to measure by any chemical analysis, either of the manure or of the soil.—Country Gentleman.

BROOD COOP FOR CHICKS

In Fig. 1 is shown the framework of a light brood coop for chicks without hens. It is made from a shallow grocery box. Two upright pieces of narrow board one-half to three fourths of an inch thick and twice as long as the depth of the side

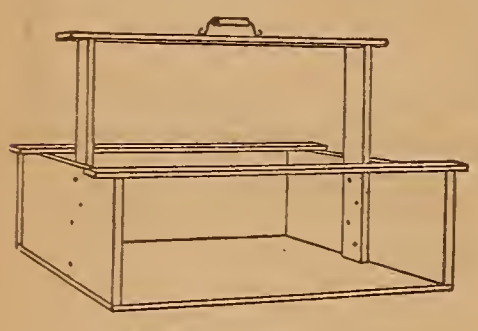


Fig. 1—FRAME FOR BROOD COOP

are nailed on the inside of the box, from which the top and one side have been removed. On top of these uprights and parallel with them at front and back of the box three strips of the same stuff as the uprights, but about four inches longer

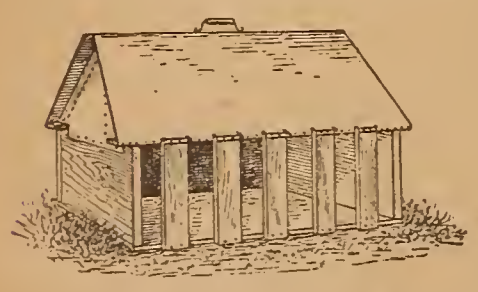


Fig. 2—COOP COMPLETE

than the box, are nailed. In front several upright slats are fastened. Over the frame a roof of stiff building paper is stretched and tacked, and an ordinary package handle fastened by screw eyes to the center of the ridge pole for easy carrying. The gable ends are closed with triangular pieces of building paper tacked to the box body and the upright, the edges next the roof being turned outward parallel and fastened to the roof by wire staples or other convenient method.

If a hen is to be used in the coop, one of the upright slats in front should be hinged below and latched above, so she may be readily put in and taken out. Such coops are so easily and cheaply built, and are so easily carried from place to place, that they will commend themselves to all. Fig. 2 shows the coop complete.—New England Homestead.

ROADSIDE FRUIT TREES

Americans who visit Belgium with observant eyes, and note the rows of fruit trees bordering the public roads, come away impressed with a sense of wasted opportunity in their own country. Just think what an abundance there would now be of fruit of all kinds, as well as of umbrageous beauty everywhere, if the miles and miles of dull, shadeless American roads had been planted with hardy apple, cherry, plum and pear trees! The cost would have been slight, the amount of care required small, the returns, how large! In the neighborhood of towns and cities, also, the abundance of roadside fruit which the boys might be permitted, under slight restrictions, to pick up and eat at will, would have been a protection to private trees, which few persons now attempt to grow on account of the general apprehension that the boys, not the cultivator, would get the fruit.—Maxwell's Talisman.

Review of the Farm Press

FEEDING RACK

One way to build a rack for feeding sheep, that is fastened to the side of the barn, which will not allow the seed to fall into the sheeps' wool, would be to build it on the opposite plan than is

A GOOD FEED RACK FOR SHEEP

usually followed for building such racks—that is, instead of having the top of the rack farthest from the wall, have it nearer to the wall at the top, slanting outward at the bottom. The sheep can pull the hay out underneath, and being larger at the bottom than at the top it will slip down into the rack as it is eaten away. This will also prevent the seed from dropping into the wool.

A square rack can be built out in the open on the ground, and the sheep can get the hay over the side, eating from the top of the rack. In this way they can get all they want without injuring their wool, by having timothy or clover seed dropping into it.—The Farmer.

CROP TO PRECEDE FALL SOWING OF ALFALFA

Early spring grains, such as wheat, oats, barley and emmer, make good crops to precede fall sowing of alfalfa. The land may be plowed immediately after harvest, and by frequent cultivation, pulverized, so as to produce a firm seed bed, or simply disking and harrowing at intervals after the grain is harvested, until time for seeding the alfalfa, will put the soil in good seed-bed condition. Millet is often used as a crop with which to precede the fall seeding of alfalfa. However, it has a similar fault to cow peas and soy beans, in that the crop matures too late for the soil to accumulate moisture, and get into good seed-bed condition for seeding the alfalfa.—A. M. TenEyck in the Kansas Farmer.

RAISING CARROTS

It has always seemed strange to the writer that carrots were not more universally grown, for not only are they remunerative commercially, but they are most excellent for feeding live stock, especially horses. It is a well-known fact that carrots when fed to horses improve their wind greatly.

The gross profit from an acre of well-grown carrots should be about three hundred dollars. A light loam or sandy soil suits them best, with but a moderate application of manure. For general cultivation the writer prefers the Rubicon, Danvers and Long Orange, for if grown in excess of the market they can be profitably fed to the live stock.

It requires from three to four pounds of seed to the acre, depending on the distance between the rows. The plants should be from three to six inches apart in the rows, and the rows wide enough apart for a horse cultivator to be used. A good bit of hand thinning can be saved by going through the rows first with a hoe and cutting out a hoe's width, leaving about three or four plants between the first hoe's width and the next. Carrots are free from insect or other enemies, as a rule, and demand no extra attention.

There is no farm-raised animal that doesn't relish carrots, from the fowls up. The writer still believes, at the risk of being called old fashioned, that we would have healthier and more contented live stock if we fed more roots and less mill feed; also that our farms would pay better if we didn't put all our eggs in one basket. For example, if a man goes in for dairying exclusively, and is by chance unfortunate enough to have to kill all his herd on account of tuberculosis, he faces temporary embarrassment, to say the least; whereas if he had fewer cows, and other crops to depend on, such as beets, carrots, strawberries, potatoes, etc., he would feel the loss so much less. —A Farmer in The Country Gentleman.

"NITRO-CULTURE" ONCE MORE

As is well known, plants like clover, alfalfa, peas and beans improve the soil in which they are grown. It has been shown that this improvement is mostly due to the nitrogen which these crops add to the soil. Scientific experiments show that this nitrogen is taken from the air and made into the body of the plant. It enters the plant through the little knobs, or nodules, which are often seen on the roots of clover or peas. The work of absorbing and holding it is done by tiny germs or forms of life known as bacteria. Unless these germs are present the nitrogen will not be saved and thus gained. The little "knobs" are really the houses in which millions of these germs live.

Unless these bacteria are present in the soil the plants will not act to save and hold the nitrogen from the air. It is claimed that one great reason why alfalfa, cow peas or crimson clover often fail when started in a new locality is because these bacteria are not in the soil —therefore the plants cannot thrive as they should.

The theory is that if these bacteria can be added to the soil they will grow rapidly, and thus become numerous enough to help the crops. To do this about three hundred pounds of soil from a field where alfalfa grows well is scattered over an acre of new seeding with the seed. This is called "inoculating" the soil, and it generally helps to start the crop.

"Nitro-culture" is the result of efforts to introduce these bacteria without using the soil. The bacteria are cultivated or grown in warm water. When they become plentiful, cotton is dipped in the water and then dried, thus leaving the dried bacteria. The cotton is then sealed and sent to those who order it. This "nitro-culture" is put in pure water with sugar and certain chemicals, so that the bacteria may develop and spread all through the water. The seeds are then wet with this liquid and sown—the theory being that they thus carry the bacteria with them.

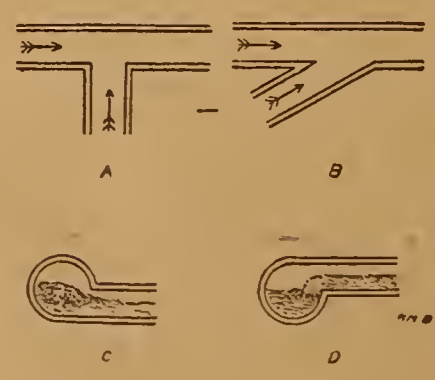
The theory is all right, but both experiment and practise seems to show that this "nitro-culture" is inferior to actual soil. We would not advise farmers to buy it except as an experiment.—Rural New-Yorker.

A POINT IN TILE DRAINAGE

Join all side lines or laterals to the mains by the use of "Y" connections.

In joining a lateral to a main give the last three or four tile extra fall. Also make the entrance of the lateral into the main flush with the top rather than even with the bottom of it.

A represents a common angle for joining a lateral to a main, while B represents the correct angle. D shows a better height for joining a lateral than C.—H. M. Bainer in Wallace's Farmer.



HEAP BIG FARMER

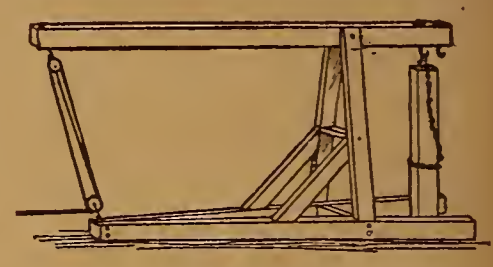
It should not be forgotten that it was the farmers that through the so-called "Granger legislation" wrote it into the jurisprudence of this country that the state is greater than any of its creatures and has the right to regulate the business of any corporation it has created. That was disputed and ridiculed until the farmers made it law and stayed with it until the highest courts pronounced it good law. That is the foundation of all the laws we now have to regulate railways, life insurance companies and other corporations. The farmers in the seventies laid the foundation of the laws that President Roosevelt is using to curb corporations.

The trouble is that we farmers do not appreciate our power. We are by long odds the biggest frog in the puddle, if we only knew it. If we would get together and hustle a little we could get the legislation we should have and officials would fall over themselves to enforce that legislation.—The Farmer's Call.

HANDY POST LIFTER

A few years ago the writer made a lifter which he used and which he believes is about as simple as has been made up to this time. With this we have lifted eighty posts in half a day and were not nearly so tired as we had been when lifting only a dozen in the old way. We hitched a horse to it to move it from one post to another, so that all we had to do was to attach the chain and draw the post from the ground.

The accompanying illustration shows the appearance of the device when it is completed. The base is made of three planks put together like a letter T, as shown in the drawing. To this two upright pieces were bolted and braced. From the top of this the lever was attached. This lever should be made of two oak two-by-sixes bolted together and



POST LIFTER

without a flaw in either. After they have been bolted together they form a plank four by six. From the long end of the lever to the apex, or where the two pieces of the base frame join, a block and tackle should be connected.

To operate the device, all you need to do is to pull it up to the post as shown in the drawing, attach one end of the chain to the post and the other to one of the hooks shown in the end of the lever. If with one attempt the post is not lifted, release the power and attach the hook on the end of the lever to the chain nearer where it is attached to the post and take another pull.

We have lifted eight-inch posts in this way that were sunk three feet in the clay. You do not need to use a spade at all, simply couple on the chain and begin drawing. Where you have a large number of posts to lift every year, the device is practical and will pay in half a day's work for the time spent in its construction. It can be shedded and used another season.—Journal of Agriculture.

DAIRY NOTES

A good cow seldom gains weight while giving milk.

The dairyman who wins out must study his business.

Remember that the milk cow needs special care now.

Just now a pound of butter looks like thirty cents, which means that it looks good.

A pound of grain ration, well balanced, for each three pounds of milk the cow gives is about right.

A cow with a valuable pedigree will usually produce milk better and cheaper than a scrub, but the pedigree does not do it.

Keep tab on all your cows. If one drops below her average, change her feed. Keep trying until you find out what is wrong.

An abundance of bedding makes the cow comfortable, keeps her clean, saves the liquid manure and turns the strawpile into A 1 fertilizer.

Never dwarf the calf for want of feed. A few dollars saved here may mean a poor cow later. Also do not keep the calf fat. Use sense in raising her.

A good dairyman can tell a good cow from a poor one, but the best dairyman can't tell a two-hundred-pound cow from one that will give three hundred pounds of butter fat yearly.—Kimball's Dairy Farmer.

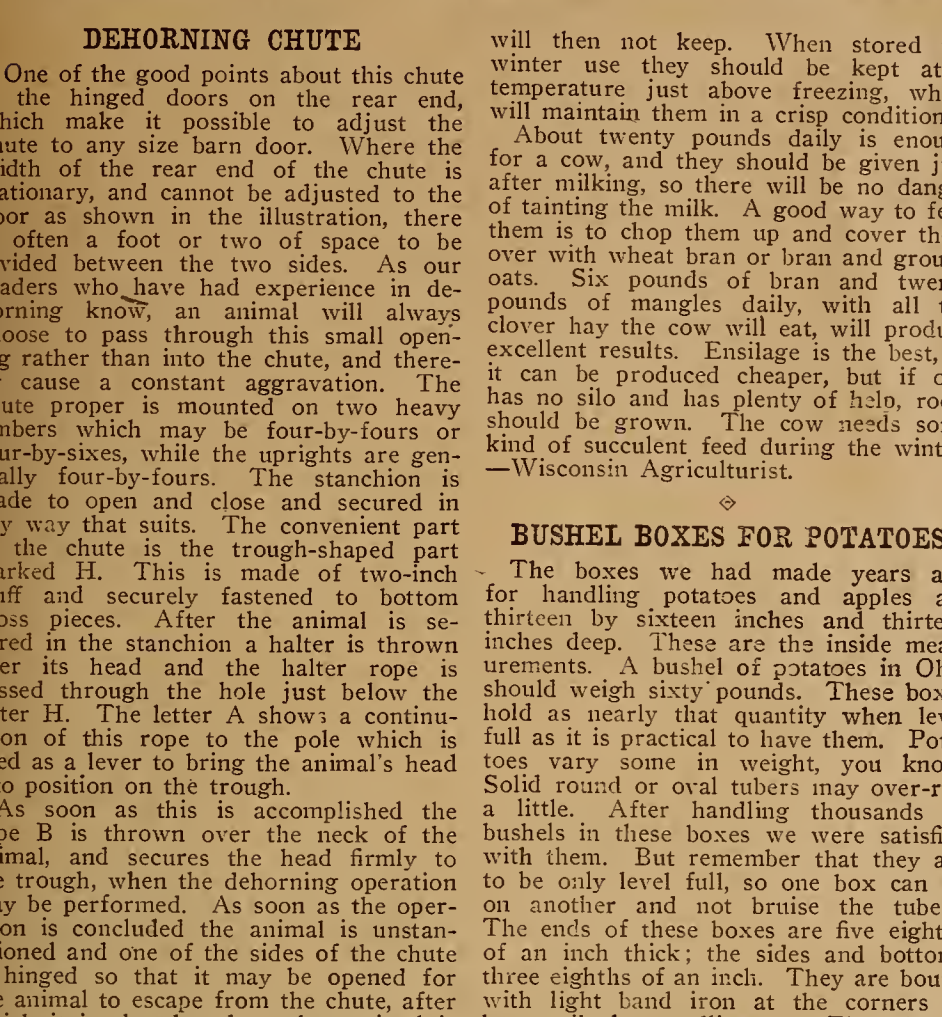
Not long ago we started a crusade for two things—for the best and most helpful farm paper in the world, and for the "million mark." Our subscribers tell us that we have the former now, and the latter is coming soon—if *you* will help.

Review of the Farm Press

DEHORNING CHUTE

One of the good points about this chute is the hinged doors on the rear end, which make it possible to adjust the chute to any size barn door. Where the width of the rear end of the chute is stationary, and cannot be adjusted to the door as shown in the illustration, there is often a foot or two of space to be divided between the two sides. As our readers who have had experience in dehorning know, an animal will always choose to pass through this small opening rather than into the chute, and thereby cause a constant aggravation. The chute proper is mounted on two heavy timbers which may be four-by-fours or four-by-sixes, while the uprights are generally four-by-fours. The stanchion is made to open and close and secured in any way that suits. The convenient part of the chute is the trough-shaped part marked H. This is made of two-inch stuff and securely fastened to bottom cross pieces. After the animal is secured in the stanchion a halter is thrown over its head and the halter rope is passed through the hole just below the letter H. The letter A shows a continuation of this rope to the pole which is used as a lever to bring the animal's head into position on the trough.

As soon as this is accomplished the rope B is thrown over the neck of the animal, and secures the head firmly to the trough, when the dehorning operation may be performed. As soon as the operation is concluded the animal is unstanchioned and one of the sides of the chute is hinged so that it may be opened for the animal to escape from the chute, after which it is closed and another animal is driven in. The dimensions for this chute may be made to suit the size of animals to be dehorned. However, it is a good plan to make it large enough to accommodate large animals, as the chute comes



DEHORNING CHUTE

very handy in performing any kind of an operation on an animal when it is necessary to secure him. The hinges and latch on the side door and on the swinging gates at the rear should be made extra strong and not less than three in number, as sometimes an animal will throw itself and place more or less strain on the sides of the chute. The width of the chute at the stanchion is commonly three feet, while at the rear end it is eight inches wider.—The Iowa Homestead.

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GROWING AND FEEDING MANGLES

The mangle is one of the best of root crops for farmers to grow, because it outyields all other varieties and is easily harvested. Unlike the sugar beet, the mangle grows well out of the ground and is harvested with comparative ease. Just when to sow the crop will depend somewhat upon the season and the condition of the soil as to moisture. From May 20th until June 1st is the best time. The soil should be mellow, deep and moist. Repeated plowing and working before planting is proper, as it purifies the soil, retains moisture and kills weeds. The crop should be thinned at the proper time, and kept perfectly clean. Roots must not be allowed to freeze, for they will then not keep. When stored for winter use they should be kept at a temperature just above freezing, which will maintain them in a crisp condition.

About twenty pounds daily is enough for a cow, and they should be given just after milking, so there will be no danger of tainting the milk. A good way to feed them is to chop them up and cover them over with wheat bran or bran and ground oats. Six pounds of bran and twenty pounds of mangles daily, with all the clover hay the cow will eat, will produce excellent results. Ensilage is the best, as it can be produced cheaper, but if one has no silo and has plenty of help, roots should be grown. The cow needs some kind of succulent feed during the winter. —Wisconsin Agriculturist.

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BUSHEL BOXES FOR POTATOES

The boxes we had made years ago for handling potatoes and apples are thirteen by sixteen inches and thirteen inches deep. These are the inside measurements. A bushel of potatoes in Ohio should weigh sixty pounds. These boxes hold as nearly that quantity when level full as it is practical to have them. Potatoes vary some in weight, you know. Solid round or oval tubers may over-run a little. After handling thousands of bushels in these boxes we were satisfied with them. But remember that they are to be only level full, so one box can sit on another and not bruise the tubers. The ends of these boxes are five eighths of an inch thick; the sides and bottoms three eighths of an inch. They are bound with light band iron at the corners to keep nails from pulling out. They should be made of very light lumber. Mark this. You do not want to handle a lot of unnecessary dead weight. There are hand holes cut in each end. This particular length was given to the boxes so two would just go end to end in a common wagon box.—T. B. Terry in the Practical Farmer.

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CORN AND HOGS

In this great corn garden of America the principal feed for the farmer's hog is, and always will be, corn in the ear, because it is the cheapest and most convenient; but to get the best results we must give him a variety of food without regard to cost or labor, especially when very young, slops made of bran, middlings and oil-cake meal. In the warm months, with plenty of grass of any kind, clover being the very best, with a moderate supply of corn we may always hope for paying results, while in cold weather, when slopping is impracticable, we may obtain good results by feeding corn liberally with the fodder, and this saves the labor of husking, or with clover hay. But the very best of all is for them to follow grain-fed cattle, and we doubt the wisdom of feeding hogs at all in the winter time without the presence of at least some grain-fed cattle. But no matter how well fed, they must have plenty of salt and plenty of good clean water to drink, and in addition we use wood ashes, charcoal and stone coal.—J. B. Cummings in National Stockman and Farmer.

Gardening

BY T. GREINER

ONIONS AFTER ONIONS

A LADY reader in Ingersoll, Canada, asks how long onions can be grown on the same land in succession. "Mine," she says, "have been in the same spot for ten years, but last year they were very small."

Theoretically there is no limit to the length of time that onions can be grown on the same spot right along, and there may be cases where the crop has been planted with good results on one and the same piece for even more than ten years in succession, of course under a perfect system of tillage and especially with the free use of manures. In practise, however, we find it advisable to make more frequent changes of location, or at least in the manner of manuring. When onion maggots or onion diseases once begin to invade the field, then it is high time to change.

The fact that the onions are "very small" one year would not necessarily indicate that the supply of plant foods has become exhausted. The presumption is that when the land is liberally manured annually, every year should leave it richer in plant foods than it was the year before. Yet there may be other more or less mysterious or undetermined influences at work which are unfavorable or create unfavorable conditions for the perfect development of the crops.

In that case the best thing to do is to plant other garden crops—peas, early potatoes, beets, carrots, cabbages, early tomatoes, strawberries, etc.—for a number of years, or at least change the nature of the manures we have applied or substitute dressing of lime, or wood ashes, or other commercial fertilizers for the stable manure if annual application of such had been habitually made. Then, after a few years of cropping, or still better, after a change to clover, vetch or other leguminous crop for a year or two, we are in shape again for resuming onion planting.

DISHORNING EARLY PLANTS

A New York State reader asks about the proper way of cutting back overgrown early tomato plants. "Should the whole top be cut off, leaving only the stalk?"

If I can grow my early plants so as to maintain a well-balanced, stocky growth without cutting, I prefer to leave them in this way, and I always aim to give them the room they need, so as to prevent any heroic treatment of this kind. But when the plants have been left too long in the "nursery row," and have run up so tall and spindling that I cannot again get them into the required shape without cutting, then I do not hesitate to cut. It is the lesser of the two evils, and possibly not much of an evil, anyway.

Nor do I ever cut the plant back more than is necessary to get it back into the desired low and stocky growth. We could cut off the top just above the seed leaves, and after some delay get a plant again having two main branches. But in almost all cases I cut off only the spindling top, leaving a number of the lower leaves, and the lower branches if there are any already. Bear in mind what shape you want, then cut accordingly.

STUMP ROT AND CLUB ROOT OF CABBAGES

Experienced gardeners, especially of the old school, have often warned against the practise of following cabbage with cabbage on the same land, as the risks from insects and fungous diseases, among the latter stump or club root, multiply with every succeeding crop. The main reason, however, why successional crops of this vegetable seldom succeed is the fact that a cabbage crop makes excessive demands for the potash of the soil. A large yield may take up five hundred pounds of potash an acre.

Yet a New York State reader writes that he has grown Danish Ballhead cabbage on a ten-acre lot of muck land for fifteen years, the crop doing well every year. He had never seen a sign of stump rot until last year, when he had five acres in cabbages. Three acres planted with plants of his own raising gave a good yield of healthy cabbages. Two acres were planted with purchased plants. These were all destroyed by stump rot, as also were the cabbages of the neighbor from whom the plants were purchased.

The question now is, will it be safe to set cabbages again on the two acres? I think not. Evidently our friend's muck land has been entirely free from the fungi of these diseases, and he might have gone on raising cabbages on this soil for years to come, using plants of his own raising, without seeing a sign of stump rot or of club root, although it is believed that the spores of the latter are present in most of our cultivated fields, and require only favorable conditions for their development.

The plants grown by the neighbor, however, undoubtedly brought the infection, and were probably grown in infected soil. The spores have now become mixed with the soil of the two acres, so that succeeding crops will be likely to suffer.

Dressings of lime have often been recommended for counteracting the tendency to club root. I would prefer heavy applications of wood ashes or of muriate of potash. This disease is seldom troublesome where proper attention is paid to the health and nourishment of the plant. In our friend's case, however, I would quit raising cabbages for a while, unless another piece of ground is available for the crop.

SHIPPING ONION PLANTS

Seedlings of Prizetaker and Gibraltar onions, ready for transplanting, can easily and safely be forwarded by mail or express. I have sometimes wrapped smaller quantities of them with moist moss, and then in waxed paper, and thus placed them in a pasteboard box (such as a common shoe box or smaller), and forwarded hundreds of miles by mail. They invariably arrived in good condition. Of course the plants may be severely cut back at both ends, as if for transplanting, which will save transportation expenses and add to the likelihood of their safe keeping.

For larger shipments I would line cheap splint baskets with wet moss, and stand the seedlings upright upon a moss layer in the bottom. A friend of mine in New Jersey, who owns a farm in Florida, recently asked me whether it would not be feasible for him to have his onion plants grown on his Florida farm and shipped North for planting on his New Jersey farm.

In my opinion this is a good idea. I can see no reason why such plants for shipment to any of the more Northern states could not be grown in open air in Florida at almost no expense, and planted where otherwise the expensive greenhouse-grown plants must be used. If I owned a farm in Florida I doubt whether I would much longer raise my onion seedlings here in this cold climate under glass. I believe onion plants could be successfully grown and wintered over even as far North as Norfolk, Virginia.

CRATES FOR POTATOES

A good lot of bushel crates is as indispensable in the market garden as it is on the farm. We need them especially for potatoes, and I know of no package in which to carry a lot of early potatoes to market than crates that are as light as they can be made without weakness, and a little longer one way than the other, so that three crates when empty can be nested together, to save room and for convenience in carrying.

I prefer the slatted crates with corner re-enforcements. Such or similar crates can be bought from various dealers in crate and box stuff in the flat at from eight to twelve dollars a hundred, and I believe that is as cheap as we can expect to get them anywhere.

We use such crates altogether for the transport from the field and orchard, and to market or the storage place, of potatoes, tomatoes, onions, beets, pears, apples, and many other products, and would be sorely puzzled about managing this part of the business if we had to do without the crates.

I have also used such crates during early spring, when they are not otherwise needed, as nests for sitting hens. In that case they are filled nearly full with clean, fine hay, pressing it well into the crate, making a nice soft nest, and placing the crates in rows on the floor of the hatching room. In short, we need these crates, and a liberal supply of them, and find use for them almost the whole year around.

TREATING MANURE FOR GARDEN CROPS

D. C., a Tennessee reader, asks whether I would advise him to add copperas to the manure heap to pulverize it, or whether any chemical change would take place which would result in injury to the roots of vegetable crops. The most natural "breaking down" of coarse manure, as a result of which it is made fine and put into a homogeneous, earth-like shape, so that it can be easily and evenly mixed with the garden soil, comes in due course of decomposition or rotting. The admixture of copperas, whether green copperas or iron sulphate, or blue copperas or copper sulphate, would only prevent the natural decomposition of the raw manure, and I do not advise it, although in the small quantities these chemicals would be used and applied to the soil they would not injure the roots of the plants.

I do not know of any chemical substance which could be added to a manure heap for the sake of hastening its decomposition and helping to "pulverize" it in a practical and economical way. The substance which we do add, and which I strongly advise to add to the manure as made in the stables, is plain superphosphate (acid phosphate), or possibly even plain phosphate (floats), and this for the double purpose of saving and "fixing" the free ammonia that is liable to escape and be lost to the land, and to add phosphoric acid, of which stable manure has only a scant supply.

By all means use superphosphate or phosphate in this way, and use it freely. You can risk all the "chemical changes." The best way to hasten decomposition and get coarse manure in best possible shape for application to garden land is by mechanical means. Fork over the manure, re-enforced by the addition of the phosphates, from time to time, and do it quite thoroughly.

AUTOMOBILE DELIVERY

I am also asked whether I know of any one using an automobile for the delivery of vegetables to customers or hauling any produce to market. So far as I know, gardeners and farmers generally are rather slow to avail themselves of this modern method of rapid transportation and delivery. In the cities the express companies and many merchants deliver parcels and merchandise by way of the auto. Farmers who in many cases are put to inconveniences and risks by the reckless management of automobiles on the part of their owners and "chauffeurs" do not look with an excess of favor upon the auto, and grumble about being crowded off their own highways. But there are instances where they themselves might with profit avail themselves of this method of rapid transit and transportation. I would be pleased to hear from any reader who either uses or knows of a neighbor who uses, an automobile for the delivery or marketing of garden products.

PEPPERS FOR MARKET

An Ohio reader writes us that he is a "sort of a pepper crank," and wants to know what varieties are the best to grow for market, and what kind of fertilizer gives the best results. Many of his plants failed to set fruit. Variety, Chinese Giant. A variety is wanted that bears well.

I have never had the least trouble about peppers refusing to set fruit as fully as may be desired. In fact, it seems to be the nature of the plant, when surrounded by favorable conditions, to bear fruit very freely. My plants, even of the Chinese Giant, are always heavily loaded with fruit. But the soil must be very rich. There is no use attempting to grow a profitable crop of peppers on poor land, or land not well supplied with humus. It should be a warm, well-drained loam. The humus gives it life and preserves the needed moisture. Stable manure is almost indispensable, unless the land is a rich clover sod, when any good complete fertilizer analyzing say four to six per cent nitrogen and six to ten per cent each of phosphoric acid and potash may be applied broadcast at the rate of five hundred to one thousand pounds an acre.

Chinese Giant does first-rate for me, but it is one of the latest sorts, and plants must be started under glass not later than March, preferably the fore part of that month. Ruby King is a good variety among the older ones, and with me has always proven quite productive. In the great pepper districts of central New Jersey the newer Neapolitan pepper, a very early and very prolific variety, is the leading sort, and carloads of it are shipped from there to New York City.

The Italian growers there also have a variety which in general appearance closely resembles a red tomato. This promises to become (or has already become) the leading later sort. It is being introduced this season under the name of "tomato" pepper.

All these sorts are very mild and sweet. The demand for them is constantly and rapidly growing, and we have to enlarge our patch from year to year. The people at large also seem to become "pepper cranks."

Fruit Growing

BY SAMUEL B. GREEN

SOME COMMON CAUSES OF FAILURE OF FRUIT TREES

CAUSE 1: POOR VARIETIES

TOO MANY parties buying fruit trees a tree is a tree, no matter what its variety. There is a great difference in the various kinds offered by nurserymen as regards vigor, hardiness and bearing qualities. Select good standard kinds and do not start with new high-priced sorts. Of the new varieties offered, not one in ten is as good as the best kinds now known is the experience of experimenters everywhere.

The Minnesota State Horticultural Society in Minnesota, and other state horticultural societies in other Northern states, publish lists of desirable fruits. These can be had for the asking. The experiment stations of the various states will also gladly give information of this kind.

CAUSE 2: POOR STOCK

The planter of trees and seeds is dependent to a great extent upon the honesty of the parties with whom he deals. There are comparatively few men who can tell the different varieties of trees by the bark and twigs, although there is quite a difference in this respect. Many a man has planted what he thought was the right kind, to find on their coming into bearing that he had put in five or six years in cultivating worthless sorts. It is a good plan for buyers of nursery stock to deal direct with the nurserymen who have good reputations. As a rule it is best to buy such material from near-by nurserymen, provided they are the right kind of people.

The nursery agent has done much good in the way of persuading people to buy fruit that never would have been bought otherwise. On the other hand, he is very often an irresponsible party, whom it is best to avoid, at any rate, until his established reputation is known.

CAUSE 3: INJURIES

Most farmers can set out a tree so as to make it grow, but in the busy season, when the weeds get high, they are apt to leave the care of the orchard to help that are also much hurried, and as a result the trees are barked in cultivation, or perhaps the young stock is turned in among them and irreparable damage is done. Or perhaps in the winter the trees are gnawed by mice or rabbits and are hopelessly girdled.

The orchardist on a large scale is pretty apt to look out for these sources of injury, but it is the man who sets out only a dozen or two trees that is most liable to have trouble of this kind. On this account I have for many years recommended that farmers who set out but a few trees should box the trunks of the trees up to the lower branches, using for this purpose two eight-inch and two six-inch boards, and then filling inside the boards with earth. This box-like affair around the tree protects from sun scald, mice, single tree injuries, gnawing of the bark by sheep and cows, and unless the snow is high, protects from injuries by rabbits. It is far better to set out a dozen trees in good shape, protected in this manner, than to set out a large number without such adequate protection. Trees that are boxed in this way may be mulched in winter without danger of injury, which is a good practise in all extremely severe locations. At the Ohio Experiment Station one orchard, grown by the mulching process, has the trunks of the trees surrounded by galvanized wire netting.

◈

NORWAY SPRUCE FROM SEED

W. C. L., Audet, New York—The Norway spruce can be easily grown from seed, but it is scarcely advisable for those who want but a few specimens to start in this way. They had better start with two or three year old seedlings or larger plants from nurseries.

For several years I have looked after a seedling evergreen nursery for our state forestry board, of which I am an ex-officio member, and we have been very successful in raising Norway spruce and pine seedlings, and have now about seven hundred thousand on hand, which have cost us not over seventy cents a thousand. The soil used in this work was a light, sandy loam, which is the best kind of soil for evergreen seedlings. It is situated in rather an airy place, which is also desirable.

The land was as carefully prepared as for a first-class garden, and laid out in beds eight feet wide. These beds were covered with lath screens, each four feet square, and so made that they could be removed in cloudy weather.

The seed was sown early in the spring (although I have had good success in sowing seed as late as the first of June). It came up readily, and as soon as it showed above the ground it was covered with lath screen, for the purpose of affording some shade, the object being to give a change of sunlight and shade the whole day. The young seedlings do not do their best in full sunlight. The seed in this particular case was sown in rows four inches apart and covered about three fourths of an inch deep. I have, however, had very excellent results from seed sown broadcast.

One of the most troublesome pests is ground squirrels. Birds have also troubled us occasionally. These Norway spruce seedlings are now three years old and eight to twelve inches high. The only cultivation they need is to keep them from weeds, and if the soil becomes compact between the rows, to loosen it.

◈

PRUNING BLACKBERRIES

T. A. B., Ingersoll—As a rule blackberries should not be pruned until they come into flower, for the reason that their fruit buds are often toward the ends of the canes, and if pruning is done very early they may be all cut off. I know of a case where a party reported to me that his blackberries did not bear, and on investigation I found that he pruned them early every spring, and so severely as to remove all the fruit buds. In the case of the Eldorado and Rathburn blackberries, as with other kinds, they should be pruned when in flower, and then allow only enough flowers to remain to produce a reasonable crop. In some sections or with some kinds this might mean cutting off as much as half the flowers; in others, removing more.

There is no necessity of manuring raspberries or any other fruit every year. In fact, some soils do not require manuring at all, and I should never manure such crops until they showed a need of it by reason of decreased growth. So long as the growth is satisfactory do not encourage an overgrowth. Night soil and hardwood ashes would make a good fertilizer, but they should not be mixed together, but be applied separately. Coal ashes may be safely mixed with night soil as an absorbent, as it contains no potash that would start wasteful chemical action.

◈

SPRAYING FOR CODLING MOTH AND APPLE SCAB

G. W. H., Meadowgrove, Nebraska—It is the larvæ of the codling moth that ordinarily causes wormy apples. The best material to spray with, in order to prevent this trouble, is Paris green and water, at the rate of one pound to one hundred and twenty-five gallons, to which should be added one pound of quicklime. This material should be sprayed on the trees immediately after the flowers fall, and should be repeated three times at intervals of two weeks. For this purpose you will need a good spray pump with suitable spray nozzle.

If the apples are scabby it is a good plan to spray with Bordeaux mixture to which Paris green has been added. You had better write your experiment station at Lincoln for their bulletin on spraying.

◈

BERRY CARRIER

P. M. A., Lancaster, Ohio—The berry carrier commonly used consists of a box with sides three inches high, made of half-inch lumber and of just the size to carry six or eight boxes. Generally it is considered that six boxes are enough for one carrier. This box has a handle to it made by bending a piece of barrel hoop over and tacking it on opposite sides.

◈

PEACH TREES INJURED BY SCALE

H. W. G., St. Andrew, Florida—Please send specimen of the scale and injured twigs of your peach tree by mail. I cannot answer you intelligently until I have seen a specimen of it.

◈

Have you a piano, a real *good* piano in your home? If not, FARM AND FIRESIDE offers you an exceptional opportunity to get a magnificent $750.00 Harrington upright-grand absolutely free in our prize Pony Contest. All you have to do is to persuade some of your friends and neighbors to take FARM AND FIRESIDE. Perhaps if you don't want to do this yourself, your daughter might be glad of the chance. If your son wants to do it, and doesn't care for the piano, we offer a beautiful blue-ribbon pony team.

Live Stock and Dairy

STOMACH WORMS IN SHEEP

DURING the season of 1906 the stomach worm was especially destructive to lambs. Many farmers lost so heavily that the year's profit on sheep was wiped out. Such losses shake a man's confidence in the future success of the sheep business. Some farmers sold their lambs early in an unfinished condition in order to escape the probable loss; of course, such disposition entails a loss, but when the owner is little acquainted with the nature of the disease, and has had no experience in applying remedies, the prompt disposal may prove the best practicable solution of the problem.

To abandon sheep raising offers immunity from their loss, but carries with it the necessity of embarking in some other phase of feeding that may be equally hazardous. For instance, the farmers of a vicinity recently visited by the writer affirm that of stomach worm in sheep and cholera in swine the latter has proved the more disastrous. Infection in the swine plague seems less under the control of the farmer, and remedies have proved less effective than the remedies for stomach worm in sheep. Radical changes in policy of feeding disturb a farmer's methods of farming, so that many sheep raisers will give the lamb another trial this season before giving up sheep altogether. To such farmers—and they are many—a few facts about the stomach worm will likely prove of interest. Advice last fall after the lambs had died may have been ignored even by the greatest loser, or very likely he would have forgotten the essential points before the occasion arrived for their application. For this reason the time for its immediate use has always seemed to the writer to be the most profitable time to give advice. Precaution is better than cure in most things, and with internal parasites in sheep there is no exception to this time-honored money-saving adage; the time for prevention of stomach worm in lambs has arrived.

ITS HISTORY AND HABITS.

Before undertaking to outline the few facts that personal experience and study have brought to the attention of the writer, it will not be out of place to give a few facts concerning the history and habits of this pest; for it may be assumed that there are farmers so fortunate as to have escaped an experience with this trouble. Strongylus contortus, as scientific men call it, inhabits the fourth stomach of sheep and other ruminants. The identity of the organism has been quite well known to many farmers for a dozen years or more. Previous to its identification, the disease was often called "paper skin," because of the pallor that ensues from the depletion of vigor resulting from the sapping habits of the parasite. The worm varies in length from three fourths of an inch to a little over an inch, the females being appreciably larger than the males. The small size and caliber of the worms account for their not having been seen by so many farmers who have "opened" the dead carcasses of affected lambs. The first autopsy conducted by the writer several years ago resulted in the same kind of an oversight. The paunches of lambs examined by the writer usually have been found well filled with grass and showing no indication of worms. In fact, all published experience to the contrary, the writer has usually been unable to detect the "sick" lambs in the flock (of mutton breeds) from the healthy lambs; casually looking over the flock in the evening in my case has not served to indicate the lambs that were to die before the next morning. The sapping of vigor by the worms seems to stimulate an abnormal appetite in the lamb in many cases, as if the inroads of the parasite might in this way be outlived. There is some evidence that ample nutrition serves to mitigate the results of the attack, and that the lambs of strong assimilative powers and exceptional vigor may survive infestation that would prove fatal with weaker hosts. When the fourth stomach is reached in a progressive examination it shows little of contents other than a watery, "sticky" fluid, in which the worms are suspended in large numbers; they also adhere by their mouths to the inner lining of the stomach, from which they suck blood. The amount of blood determines the color of the worm; the paler worms appear so because they have no freshly drawn blood in their food duct. Worms may be found in the first few feet of intestine next to the stomach. The watery contents of the third stomach is supposed to be due in part to an abnormal secretion caused by the inflammation produced by the worms.

The person wishing to examine these parasites may do so to the best advantage by discharging the contents of the dead lamb's fourth stomach into a glass vessel; the worms soon settle to the bottom, and remain in the vessel when the fluid has been poured off. A farmer should have as clear an idea as possible of all parasitic enemies; therefore, he should examine the stomach of every dead lamb until he finds the worms.

It has been generally supposed that these parasites spend the winter in the stomachs of mature sheep, and that the rigors of zero weather are sufficient to destroy worms and cysts on pasture land, but recent investigations indicate that winter does not always cure "sheep-sick" land. However, the former notion holds good with regard to new pastures on which sheep have not been kept, the voidings of the ewe in this case being the primary vehicle of infection by which the young lambs contract the disease through eating polluted grass and through drinking foul water. The eggs are supposed to undergo a partial change after having been voided, so that the parasite is in condition to develop rapidly upon being imbibed by the lamb. It may be explained incidentally that many sheep have these worms in limited numbers, but still never seem to have been damaged in any marked degree; in fact, some authorities contend that the harboring of these internal parasites by sheep is perfectly natural, and that the total extinction of the pest is theoretically impossible. This view may be the proper one, so that the practicable policy of combating the evil would resolve itself to limiting the multiplication of the infection to some small extent that could do no visible and appreciable damage.

PREVENTION

Of normal methods of prevention, the supplying of fresh pastures is one of the most reasonable. This is right along the line of good sheep husbandry, whatever be the end in view. Good pastures and ample nutrition must not be overlooked. These are conducive to vigor, and vigor promotes the lamb's resisting power when the disease comes on. Proper facilities for watering precludes the necessity of the flocks drinking at ponds and ditches, into which the infection is sure to gravitate with the surface water. For a similar reason, high ground is preferable to low or swampy pastures. Very short grass renders it necessary that the sheep nibble closer to the ground, thus promoting the chance of imbibing the germs from the soil. The Ohio Experiment Station has conducted experiments through several seasons designed to ascertain the effect of confining the lambs during the day while the ewes are on pasture. In this case the lambs have access to the ewes at night, but never get any grass. This method appears to have been efficient, but not practicable, on account of the labor involved and the annoyance incident upon making the separation each morning. A proper medicated salt doubtless has a salutary effect, and may even possess some germicidal properties. The foregoing remarks cover the preventive measures that have been advocated in connection with this infection. In addition to these, it may be said that breeds on a Merino foundation have proved much more immune to this parasite than have the mutton breeds. This may be explained on the ground of their long-established vigor of constitution, due to differences of environment in the formative period of their development.

GASOLINE TREATMENT

As previously mentioned, the season of the year is at hand when the farmer may begin to employ measures designed to prevent the scourge of stomach worm in his lambs next summer. The use of the gasoline treatment on the ewes before turning out to pasture is the most common specific preventive. This is essentially the same as the treatment prescribed for infested lambs later in the season. The dose for lambs weighing fifty pounds or over is usually one tablespoonful of gasoline in four times the amount of milk; the dose for full-grown ewes may be doubled. Each dose must be mixed separately, as the emulsion is not permanent when allowed to settle. After mixing each dose, shake well in a small bottle, and drench the sheep at once. The most practicable method of administering is with a short section (fifteen inches) of half-inch rubber tubing with a small funnel attached. A syringe with a long delivery tube is equally effective. Some advise setting the sheep on its rump, and deny all other postures; others hold the sheep in a natural standing position, and consider this

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the only orthodox method. The fact is that both advocates succeed. The essential feature is to hold the sheep's head in its normal position; pulling the head back in either position opens the passage to the lungs, and thus makes choking liable. No sheep should be drenched while struggling, whatever position she be in. We drench them in a standing position, and use the funnel and rubber tube.

When treating with gasoline, the ewes should be drenched three successive days ten days before going to pasture; then the last three days before going out the treatment should be repeated. Food and water should be withheld from the evening previous to dosing until noon of the following day, and for two hours after dosing. This treatment is designed to expell the worms in order to preclude, so far as possible, the contamination of the pasture. Pasture not used for sheep the previous season is desirable. The more frequent subsequent changes to new pasture throughout the season, the better.

OTHER REMEDIES

Several other germicidal preparations have been used; some of these that seem beforehand very reasonable have proved of little value in this case—carbolic-acid solution being one of these. The strongest solution of carbolic acid that could be used without damage to the sheep did not kill the worms when immersed in it for an hour. Of course, such a solution in a sheep's stomach will be rapidly diluted and rendered less powerful by the accumulation of digestive fluids. It has been supposed that gasoline kills the parasites, and in most cases this has been taken for granted; it likely kills many of the worms, but good authorities affirm that the gasoline has a greater or less narcotic effect, according to the amount taken in by the worm. The younger parasites seem to die in most cases, while the older and stronger ones are merely stupefied for a time. For this reason, as well as for others, the treatment must be repeated. Some have administered linseed oil in each dose, on the supposition that a purgative would tend to expell the parasites while still in a stupefied condition. The theory is quite reasonable, but up to the present time the writer has had no experience on this point.

The assertion that lambs thus treated cease to do well after the treatment seems without foundation in the experience of the farmers who have frequently employed the remedy. If any standstill were observed, it should be attributed to the inroads of the parasites previous to the treatment; in fact, a prompt recovery of bad cases of depleted vigor cannot be expected. If a lamb were to die the day following the first dose, it should be accounted for on the grounds of the advanced stage of the disease rather than as a direct result of the treatment. Gasoline has no healing power nor virtue of undoing the damage already done by the long-continued sapping of the parasites.

It is probable that the stomach worm will continue to prove a menace to all sheep raisers, and a progressive loss to those who neglect to fortify their flocks against the attacks of the pest. To go out of the sheep business for a year or two does not always solve the problem, as the germs may be introduced in the new flock. We once discontinued sheep raising for two seasons, but the year following the introduction of a new flock the stomach worm caused us considerable annoyance and some loss. But the new flock had not been previously treated.

The future may develop some easier solution of this question, but while we wait it is well enough for us to follow what we know. GEO. P. WILLIAMS.

SAPPHO'S DIRECTOR, 70426, BRED BY FRANK W. HART

Photo taken when he was nineteen months old and weighed 1160 pounds. Sired by King of St. Lambert's King, 30752, sire of forty-five tested cows. Dam, Exile's Sappho, 114262. Test, twenty-five pounds and six ounces of butter in seven days. A daughter of Exile of St. Lambert, 13657, sire of ninety-four tested cows

TRAINING THE COLT

Some farmers have fractious horses because they do not begin handling them soon enough. They let them go until they are two or three years of age, then they halter them up, and of course their wild natures are hard to subdue. We all recognize the fact that if a child makes a successful and useful man his training must begin in early life. If this law holds good with the higher order of beings, why not with the lower? I firmly believe it does, and this truth I can substantiate by an actual experience in the training of a colt.

One time I owned a driving mare. She had a mean disposition, and sometimes kicked and tried to run away when excited. I'm sure it was because she had been left untamed until she was two or three years old. I bred her to a high-spirited horse and she foaled a good colt. The day it came I went into the lot, caught it, and petted it, rubbing it all over from nose to tail. I met with some resistance, but the colt soon began to understand that I was its friend. Each day I handled it for over a week, then I put a small halter on it and let it remain there all day. The next day I hitched the mare to my buggy, tied the colt to the shaft beside the mother, and took a short drive to see a friend. Before I got there the colt was walking beside the mare to a loose halter rein.

Whenever I fed the mare I took time to pet the colt, and soon it became so gentle it would follow me about the barn lot, rubbing its nose against my arms at times. My children were soon leading it around by the halter, and it became much attached to them. I seldom ever hitched the mare to the buggy that I did not tie the colt by her side. This kept it out of the barbed-wire fences, from running back, or following other mares that I happened to pass.

The colt soon learned to eat out of the mother's trough, and I often fed it from my hand. At weaning time she was haltered in a stall to herself, fed plenty of hay and oats. She did not fret for the mother and kick the stall down trying to get out. She was led to water each day and never got the least bit excited. In fact, from weaning time she was no more trouble than an old horse. When two years of age she was hitched up and worked. She never commanded the help of several men to hold and drive her. She moved right off as if she understood the business. At three years of age I sold her for a buggy mare, and to-day the owner would hardly part with her at any price, because she is such a gentle family nag. W. D. NEALE.

EGGS IN EARLY SPRING

It is an old-time expression that if hens do not lay in early spring they are not worth keeping. But if the hens do not lay they are not always at fault. Now is the time to begin to expect eggs; but eggs must be produced from the raw materials, as they are really manufactured by the hen, she serving as a factory in that respect.

There is in the egg the shell (carbonate of lime), the yolk, and albumen (white), and everything that serves to create bone, meat, feathers and fat. The food that is to be given should therefore contain lime, nitrogen, phosphoric acid and carbon, substances which exist in variable quantities in different foods. Corn easily sustains the system with carbon, of which it contains a large proportion. Meat of some kind is best for furnishing nitrogen, though in winter and early spring it is difficult to procure it in some localities, but a partial substitute may be had for it in linseed meal, which contains nitrogen suitable for the purpose.

If a poultryman expects good results from his hens he must see to it that they have all the requirements necessary, not only for their own maintenance, but also for the making of the eggs. Of all foods for forcing the hens into laying there is nothing to equal lean meat. A dozen hens require about a pound of lean meat a day, with bulky food. A head of cabbage, or a mess of cut clover, scalded, will be appreciated from a dietary standpoint, as well as being excellent for promoting laying. Grain is not cheap unless it makes hens lay, and it may not be required in the summer. Bones, cut up, are excellent, but they are all the better if they have lean meat adhering to them.

If hens fail to lay, shut off the grain altogether and feed lean meat or liver. It will do no harm to allow a little grain at night if the hens are laying, but if they are foraging they do not need it and it is then a useless expense.

THE SITTERS IN THE SPRING

The sitting hen demands careful attention when incubating, and when the broods are hatched it will be of advantage to have shelter from storms as well as a variety of food for them, in order to have the chicks grow as rapidly as possible. The hen can be depended upon to do her part if permitted. The sitter prefers a secluded location for her nest. During the summer season the hens will be more comfortable on the ground, because there is then less liability of lice than anywhere else, especially in the poultry house, where a great many nests add to the facilities for propagating vermin. The nests in the house are also very warm, while the ground is cool. This fact should be considered, so that when a poultry house is constructed it should be built in a manner to be as comfortable as the hen would prefer.

While it is not possible to follow strictly natural methods, yet observation of the sitting hen will teach the beginner how to manage. When the hen is sitting in the poultry house she is frequently disturbed, and the chicks are sometimes removed before they have sufficient time to rest. She is also given eggs from the basket or from any source, but when she selects her own nest she usually lays the eggs herself. There are consequently better opportunities for success. In winter the nest should be in a warm, dry location, while in summer it should be as cool as possible. The chicks cannot be given the privilege of going away from the hen on cold days, as they are then liable to become chilled, and thus perish.

BACTERIA AND EGGS

It is reported that a celebrated French veterinary surgeon at Courtenay, in the department of Loiret, has established a curious fact in the contamination of eggs by microbes, by the mycelium threads or seeds of fungi spores. A miller had placed one hundred eggs under ducks to be hatched, and was surprised that only twenty birds resulted. He examined the eggs and found a dark green spot in the large end of each. The veterinary surgeon was consulted, and discovered that the spot was a parasitic fungus common to domestic animals. But how did it creep through the shell of the egg and kill the embryo? After much investigation it was found that the straw of the nest was covered with spores. He selected ten sound eggs, placed them in cotton wadding, and sprinkled it with the mycelium fungi threads. They were hatched. He now bred these threads in gelatin and butter, and sprinkled a fresh cotton nest with them; ten new eggs were placed therein, and a hen placed on the nest to hatch. But the eggs displayed, after a while, the dark green spots in the large, or air cell, end of the eggs. The hen's body acted like the butter, and served to breed the fungi. But how did the latter penetrate the shell? Just as do the hair roots of trees and plants penetrate calcareous rocks. It was demonstrated that the parasites can also be present in the genital organs of the birds, and so establish themselves in the egg before the formation of the shell. The importance of clean nests is a matter that should not be overlooked, according to the results of the experiments mentioned.

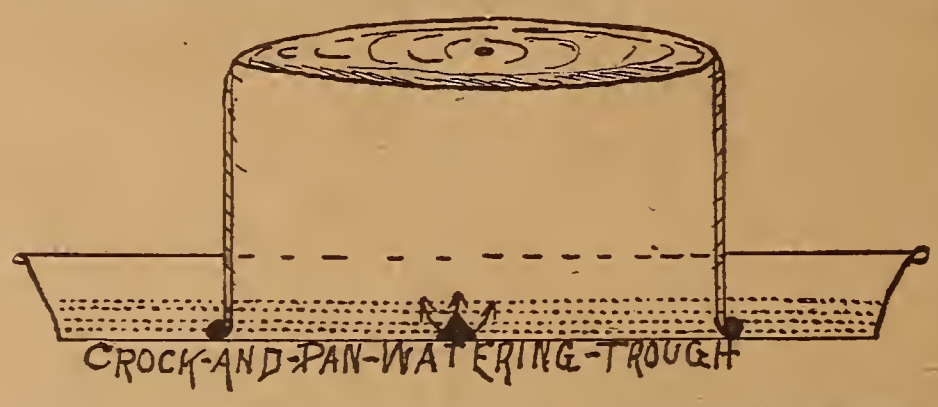
Poultry Raising

BY P. H. JACOBS

A SAFE POULTRY WATER TROUGH

If you want a sanitary and safe watering trough for the poultry yard, where there will always be just a little, but enough, fresh water, that the large fowls cannot get into to soil or the little ones to drown, the illustration will give you the idea of how to make it.

Take a crock—and there are usually a number about every place that have been thrown away because of some crack or defect—chip a notch in the edge, as shown, fill the crock with water, place over the top a tin pan or other similar vessel just a little larger than the top of the crock, then turn upside down and place on the ground. The water will run out of the crock only until it has just



covered the cut in the edge of the crock, when the flow, because of the vacuum caused by the withdrawal of the water, will stop, but continue as the water is lowered in the pan, running out only as the pan is emptied, so that there is always a fresh supply of clean water for the fowls.

R. F. WORDEN.

WHITE HOLLAND TURKEYS

A correspondent asks about White Holland turkeys. We have found them much quieter and less inclined to ramble far from home than the Bronze. They can be grown large enough to satisfy anybody, but usually they are somewhat smaller than the dark variety. We think they make better eating, being very tender when roasted. So far as hardiness is concerned, they seem to be the equal of any. I have seen these turkeys so raised that they rarely wandered two hundred yards from their home, and I have seen them raised in such a manner that they would travel as far as any Bronze turkey. One lady who raised nearly twenty in a one-acre orchard made a practise of feeding them inside their roosting shed morning, noon and evening, and they learned to be at the feeding ground promptly on time and without being called. Not once did they ever attempt to get over the low fence surrounding the orchard.

If turkeys are fed only in the evening they will start out at daylight and quite often wander more than half a mile from home in search of food. When they once get into the habit there is no checking it. Feed them three times a day in one place, and give them a full feed only at night. A light feed in the morning and at noon prevents them from wandering far away from their feeding ground.

A shed open to the south is the best place for turkeys to roost in both summer and winter. They need lots of fresh air, and cold does not hurt them, but rain and snow storms do. Cover the open side of the shed with poultry netting to keep the birds in until feeding time in the morning, and during cold, stormy days. Cold, stormy weather injures any kind of a fowl that is exposed to it, yet, unless confined, they will run out and get water soaked, and chilled through, because they haven't sense enough to stay under a good shed.

FRED GRUNDY.

AUGMENTING THE PROFITS

Any article that is saved adds to the profit, and it is the ability of the hen to secure waste materials that gives her an important place on the farm with other live stock. There is a large annual loss of grain at times of harvesting, thrashing, and bagging, and this is all saved by the poultry. Small potatoes, turnips, seeds of grass, and many other articles are thus converted into poultry and eggs, in which forms these articles are sold, and the materials that composed them could hardly have been disposed of in any other manner. If green food is to be grown from kale, turnips or lettuce, the seed may be expensive. Those who use changeable yards sow oats, rye, sweet corn or sorghum, turning the hens on the plot as soon as the green food is two or three inches high. In this manner quite a large amount may be grown with but little labor, as no cultivation of the crop is necessary, any weeds or grass that may appear only assisting to afford a variety. In such cases the hens perform the duties of scavengers and produce eggs also, thus rendering a double service. In the barnyard, during the winter, the hay seed, broken leaves of clover, and damaged grain of all kinds, can be utilized for feeding poultry to better advantage than to allow such to be wasted. One of the reasons why poultry pays on some farms is because of the vast amount of waste food consumed and converted into eggs and meat. There is no necessity for feeding poultry a large portion of the year when the barnyard is accessible to the hens. When, however, the hens are unable to procure all they desire, the farmer must come to their aid with a supply from his granary, but it may happen that his profit will result mainly from that saved through the industry of the members of his flock.

PREPARATIONS FOR MARKET

The scalded carcass is clean, and the feathers are easily removed with hot water, but if the carcasses are to be shipped a long distance they should be dry picked, as consumers judge largely by external appearance. If a little extra care will add a cent or two more a pound it means several dollars where a large number are shipped.

Eggs that are not clean in appearance will be rejected for those that are more attractive, as consumers have no way of satisfying themselves that eggs are fresh except by the condition of the shells. A newly laid egg has a bloom on the shell, which indicates freshness, but disappears as the egg is kept. Eggs become discolored by coming in contact with filthy nests, and it is a sure indication that the poultry house and nests are seldom cleaned, or attended to, when the eggs are discolored.

FORAGE FOR POULTRY

Replying to several people who desire to raise chickens and ducks, but who are short of range, and consequently green forage, I would suggest that they try Dwarf Essex rape for green food. Both chickens and ducks are ravenously fond of it, and will quickly destroy a patch if allowed to run in it all the time. But if it is cut for them, or they are allowed to pasture on it fifteen or twenty minutes a day, it will supply them a vast amount of the best kind of succulent green food. The seed of rape is similar to that of cabbage, and the plants look like cabbage, but do not head. It may be sown broadcast about as thick as turnip seed is usually sown, or it may be sown in drills about fifteen inches apart. If the ground is weedy it is best to sow it in drills, so that it can be hoed, or cultivated with a garden cultivator. The richer the soil, the more rapid and larger will be the growth of the plants, and I am satisfied that a small patch will supply more green food than any other plant that can be grown. It may be mowed, or gathered by hand, when fed. If one has only a small patch it is best to gather it by hand, breaking off the lowest leaves. This will cause the stalks to grow high. If it is mowed it springs up again from

Poultry Raising

BY P. H. JACOBS

the stubs, but is slower in making leaves than if pulled. In feeding it is best to put it in small racks in which the chickens can get only their heads. This helps much to prevent waste. If your bunch of chickens or ducks is small I think it is best to pasture them fifteen or twenty minutes at a time. They will then get the leaves fresh from the stalk and will not injure the plants to any great extent after they become large enough to stand up well. On all small farms there are times when it is not desirable to have the poultry running at large. If one has a small patch of rape to supply them with green food while yarded they will do quite as well, and sometimes better, than if allowed to range.

One lady asks me what is the best permanent pasturage she can grow for her fowls. There is nothing I know of that is better than alfalfa. Next to alfalfa is red clover. The chickens must be kept off until either is firmly established, then they should be allowed on them only fifteen to twenty minutes at a time, about ten A. M. and again in the evening. They will soon learn to devote all the time they are on pasture to filling their crops instead of running about and trampling it down. FRED GRUNDY.

SHOULD FARMERS BUY INCUBATORS?

The writers of articles upon artificial incubation universally assume that the reader owns or is soon to purchase an incubator. The present article is written for the farmer who has never owned an incubator and who is undetermined as to the wisdom of adding such a machine to his farm equipment.

FLOCK OF WHITE PLYMOUTH ROCKS

Such assertions as "An incubator is simplicity itself," "A child can run it," or "It will hatch every fertile egg," do not seem to harmonize in the mind of the farmer with his knowledge that neighbor Jones across the road has tried three kinds of incubators and has never gotten more than sixty-five chickens out of a hundred eggs. The result is that our friend decides that the incubator is somewhat of a hoax and that articles upon incubation are written by doctors and lawyers who keep chickens for recreation.

When the writer was twelve years old and living upon a farm he made an incubator from a drygoods box, according to plans laid down in an agricultural encyclopedia. From the time those two hysterical chicks made their lonesome appearance among ninety-eight eggs, the success of incubation on the farm has been an interesting field for the writer's observation, and his first experience has not been shown to be an isolated one.

The writer, in connection with his work as poultryman at the Kansas Experiment Station, undertook an investigation with a view of determining the proportion of farmers who have tried artificial hatching, and the actual success of their efforts.

Statements were collected by correspondence and by personal visits from a large number of farmers distributed over the state. From this data the following facts were gathered:

About one farmer out of ten in Kansas has given artificial hatching a trial. Of those that have tried artificial incubation about one tenth report the incubator a total failure. Next come something like one third who report ability to hatch with machines, but state that they succeeded better with hens. The largest number, about half of the entire list, report the incubator a success, and state that its hatching ability is equal to that of hens. This leaves a comparatively small number, about equal to those reporting total failure, who find the incubator a more successful hatcher than the hen.

In considering these findings we must first observe that the incubator at its best is an imitation of the natural process rather than an improvement upon it. With this view we may well consider the incubator that hatches as well as hens a practical success; the advantages of the method being earlier chickens, greater number of chickens, and a greater egg yield from the hens.

If something over half of our farmers succeeded with incubators we must conclude that the average incubator in the hands of the average farmer is capable of producing successful results. It is to some particular condition rather than to the general idea that we must look for an explanation of the failures reported. The most common explanation of such failures is that an inferior make of machine was used. This explanation is in many cases correct, but will cover only a share of the unsuccessful efforts. In fact, many of the most complete failures brought to the writer's attention have been with standard machines of known worth. The cause of such failures must be in the operator, and it will be well for the person contemplating the purchase of an incubator to consider his own habits and circumstances as well as the worth of the machine. Success or failure with an incubator is not so much a matter of knowledge or mechanical ingenuity as it is a matter of regularity and care in attendance. The farmer whose work takes him away from home at irregular periods is especially liable to neglect an incubator and spoil a batch of eggs. Good machines do not need constant watching, but they should be attended about twice a day.

Another trait necessary for successful incubator operation is stick-to-it-iveness. If the farmer has been in the habit of buying various machines, and, after the novelty wears off, consigning them to the junk heap, we may rest assured that the incubator will go the way of the cream separator and automatic hog waterer. Impatience and the worrying habit are fatal to good incubator operation. Constant meddling usually results in seesawing the temperature back and forth without getting the steady uniform conditions necessary for a good hatch.

It has not been the purpose of this article to discourage the purchase of incubators. On the contrary, the best way of encouraging the use of incubators is to give plain facts regarding failures as well as of successes. The overenthusiastic purchaser who expects impossibilities is almost certain to give up in disgust. The detrimental influence of a disappointed customer more than offsets the profit realized on such a sale.

MILO M. HASTINGS.

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◈

In his recent pronunciamento on the developing situation in Ohio over candidates for United States Senator and for President, Senator J. B. Foraker says:

"In view of the interviews and announcements of one kind and another that are appearing in the newspapers, I feel that I may with propriety say that I do not want any political honors from the Republicans of Ohio without their hearty approval."

Amen. If Senator Foraker is sagacious he will immediately cease from wanting any more political honors from the people of Ohio.

◈

ONE EFFECT OF THE PANIC

During the late panic in Wall Street some of the big stock gamblers doubtless thought that the financial world was coming to an end, and that the entire business of the country would be prostrated for years to come.

But, while their stocks were shrinking a billion dollars in two days, live stock kept right on feeding, and growing into money. The hens kept busy. While speculators were canceling orders for automobiles, dairymen were giving orders for new milk wagons. The advance of spring was not checked. All over the Southland, where the early crops had started, they kept right on growing.

The panic did not make a ripple in the real world of work. Business on the farms, in the factories and in the stores went right along as usual; and if the farmers raise good crops this year, prosperous times will continue.

Stock speculators produce nothing, earn nothing; they are only parasites. Like other parasites, they have power to injure. The panic seems to have been the result of a plot by financiers to discredit the President's policy and to check anti-corporation legislation in the state legislatures. If so, it has failed ignominiously. Its effect will be to make the people more determined than ever to get what they have been demanding—better laws and better enforcement of laws.

◈

THE REAL TROUBLE OF THE RAILROADS

The rising wrath of the people against the frenzied financiers who have acquired control of railroads for the purpose not of managing the transportation business, but for piling up stolen fortunes for themselves by manipulating the stocks and bonds, now finds expression everywhere. Even grave and reverend senators speak emphatically. In a recent interview Senator Cullom of Illinois says:

"If I could have my way, and there was a law by which it could be done, I would put Harriman in the penitentiary and keep him there long enough to make him pay the full penalty for looting the Alton, and bringing about conditions for which the road's bondholders will have to suffer.

"I feel the outrage in the Alton deal most keenly, because the road runs through my own town. It was a fine property, but it has been drained dry, and the bondholders must suffer for the despoiling of the road simply to gratify the looting proclivities of Mr. Harriman. Having lined his pockets by looting the property and disposing of bonds for millions of dollars to innocent purchasers, I do not suppose he cares what becomes of this particular line or any other which he has exploited. The whole business is simply outrageous, and I find it hard to express my feelings over the matter adequately."

In the deal referred to, the capitalization of the Chicago & Alton Railroad was increased from $40,000,000 to something over $120,000,000, and, incidentally, there was a little rake-off for the personal gain of Harriman and associates of about $24,000,000.

This is only a little sample of what has been going on in the railroad world, and the railroad troubles of the present day are the inevitable outcome of such deals.

The magnates whine about railroad credit having been injured so that investors will not now loan their money for making necessary improvements, and they appeal to the President to do something to restore confidence. They truthfully say that they must have money for new engines, more freight cars, more tracks and better terminal facilities in order to handle the increased traffic safely and promptly, and, of course, they want to get it by borrowing or from the sale of stocks and bonds. Now, what have they done with the enormous earnings of the railways during the past ten years? Most of our great railways are really able to pay their own way if honestly managed. If the money stolen from the railroads by magnate manipulators during the past ten years of prosperous business had been applied to the improvement of transportation facilities where it belonged, there would now be no need for borrowing money.

The lack of confidence on the part of the public is primarily due to the lack of honesty among railroad managers. The men who rule are known and their schemes have been exposed. The men are without honor and the public is without confidence in them. Public confidence will not be restored until dishonesty is cast out from railroad management.

Some financiers realize the danger to the transportation business due to exploiting railroads and gambling in their stocks. Discussing the present railroad situation, Mr. Thomas F. Ryan says:

"The railroads are really owned by the people, and not by Wall Street brokers. They should be taken out of Wall Street, and the stock quotation tickers should be taken out of the railroad offices. The railroad officers and the practical railroad men who are charged with the responsibility of operating the railroads should be in absolute control. They should welcome every opportunity to confer with the President, aiding him in his efforts to reach a solution that will be fair and just to the country and to the corporations, and insure strict obedience to the law."

The real railroad men, the men who have actual charge of the transportation business, understand the situation thoroughly, and speak out plainly. Mr. Benjamin F. Yoakum, chief executive of the great Rock Island system, says:

"A railroad has no more business to be at the mercy of stock jobbers than a savings bank or a life insurance company. The American railroads are, or should be, as much a public trust as these institutions. When the public insists that they be run honestly they will begin to fulfil their rightful destiny, and, too, they will be more prosperous than they have ever been.

"I will be frank. The people are not without justification in the belief that the railroads have been systematically robbing them. No one is to blame for the present anti-railroad sentiment but the railroad managers themselves."

◈

MORE INSURANCE REFORM NEEDED

A few months ago, in briefly discussing the candidacy of Senator Dryden for re-election, we referred to him as the great apostle of thrift in the insurance world—with thrift extraordinarily extortionate—and said:

"Dryden's record in the insurance business is sufficient to bar him from representing the people of any state in any capacity, much less as United States Senator. No man running an insurance company that takes the extortionate rate of forty per cent of the annual premium income from its policyholders—largely wage earners of small means—and 'books' it as 'expense of management' can be depended upon to support or vote for any measure in the interests of the people. His business training and life practises unfit him for making laws for the public welfare."

Now comes a special committee of the New Jersey Legislature with a report of their investigation of insurance companies, and their revelations regarding Mr. Dryden's Gibraltar are astounding. The report contains an extended review of the Prudential from the time of its organization in 1873, under the name of the Widow's and Orphan's Friendly Society, with a share capital of $25,000, until the present, when, as the Prudential Insurance Company of America, it has a capital stock of $2,000,000 and a surplus of $18,580,000.

"It is claimed," says the report, "that this surplus belongs to the stockholders, subject to contingent liabilities to policyholders. It would appear from the president's testimony that certainly in the past, and perhaps at present, some at least of the stockholders would, if they could, divide this surplus, or part of it, in the shape of cash or stock dividends.

"The case presents a remarkable state of affairs. By the investment of ninety-one thousand dollars in cash, the stockholders were able to accumulate capital stock of two million dollars, whereon they have always drawn ten per cent, or two hundred thousand dollars a year, and still to accumulate beyond that $18,580,000.

"Nor is this all. So rapid were the gains and so great the prospect of their accumulation that in 1902, when the scheme for reciprocal control of the Fidelity and Prudential companies was in course of arrangement, the stockholders of this Prudential Insurance Company were able to dispose of shares at six times their par value, and the principal promoters of the company actually received for a part only of their holdings in November, 1902, from the treasury of the Fidelity Trust Company, $5,997,000.

"For the shares which produced this amount, there had been paid into the treasury of the Widow's and Orphan's Friendly Society, by the promoters, only $45,484.08, or three quarters of one per cent of this vast sum of money.

"If the theory of the stockholders be correct, that the surplus of this company in law belongs to them, the present surplus of $18,580,000 affords $204 for each dollar of the $10,000 contributed to the enterprise, and this in addition to annual dividends of $200,000, or 219 per cent paid for many years past.

"The assets of a life insurance company are trust funds, and the management of such a company must be deemed to be the management of a great trust. While it may be true, as a strictly legal proposition, that the obligations of the company to policyholders are limited by the terms of the written contracts or policies which it issues, yet it is not the whole truth and the Prudential company itself has recognized that its obligations, in equity and good conscience, go further, for they state that they have voluntarily divided up among policyholders, in excess of its legal obligations, more than seven million dollars.

"The truth is that this vast accumulation of money, now amounting to more than one hundred and twenty-five million dollars, was all contributed by, and in ethics all belongs to, the policyholders, after a fair deduction for the expenses of operation and a just and liberal return to the promoters of the enterprise."

◈

THE APRIL 25TH FEATURES

"The Chase"—A full-page picture in colors will be included in the next big issue of thirty-four pages. This picture will be made up with a border, giving it a framed effect, and will prove a pleasing decoration for the walls of any home.

"The Cultivation of Cacti"—Illustrations and story by Charles Alma Byers, will describe this unique farming industry as conducted in the southwest portion of the United States.

"A Dooryard Call"—From the pen of that well-known and popular writer, J. L. Harbour, will not only prove an entertaining sketch, but will serve as a clever monologue.

"Famous Bits of History"—Always read with interest, will make up a page, illustrated with reproductions of paintings by F. C. Yohn and George Gibbs, of "The Last Stand at Bunker Hill" and "The Battle Between the Serapis and the Bonhomme Richard."

"Mill Owners"—By Georgian Grier, the second instalment of the new serial, is bound to please all lovers of pure, clean fiction. Be sure to read it.

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SHEEP RANCHING—A GREATLY DEVELOPED INDUSTRY IN THE DAKOTAS

How the Farmer Lives in the Dakotas

By Waldon Fawcett

THERE is perhaps no section of the United States where the condition of the farmers has improved more markedly during recent years or where the future seems to hold more promise for the tiller of the soil than in that vast agricultural empire embraced in the states of North and South Dakota. Few of the farmers east of the Mississippi River appreciate what an enormous expanse of good farming country is included in these two states, where, on the broad, rich prairies, wheat fields as level as the ocean at rest stretch away in every direction.

North Dakota has an area of more than seventy thousand square miles, whereas South Dakota covers more than seventy-seven thousand square miles, so that these twin commonwealths are more than three times as large as Ohio, four times as large as Indiana, and would form eighteen states each as large as Massachusetts. To an extent unequaled in any other similar slice of Uncle Sam's domain is this enormous area devoid of large cities and manufacturing interests in general. The predominant activities throughout the entire region are farming and stock raising.

The agricultural development of the Dakotas may be said to date from the late seventies, when two transcontinental railroads penetrated the region, and the adaptation of the soil for wheat became generally known. From 1875 to 1885 the settlement of the region progressed rapidly, most of the land taken during these years being secured by homestead or preemption claims from the government or by purchase from the railroad corporations, which had received extensive land grants from the government. So great was agricultural development along the main lines of the railroads, that branches had to be built to increase the shipping facilities, and these, in turn, gave a further impetus to farming.

The Dakotas were settled largely by farmers from New England and the Middle West, but not a few settlers came from the Old World, especially from Norway, Sweden and Denmark, which countries, as is well known, have furnished many of the very best foreign-born citizens found in our rural communities. Originally the vast empire of the plains, now known as North and South Dakota, was all embraced in Dakota Territory. It was divided in 1889, when this portion of the republic was admitted to the Union as two separate states.

The changes incident to making two states out of one, so to speak, did not, however, interfere in any way with the development of the country. During the past dozen years land values in almost all parts of the region have more than doubled, and an upward tendency is yet manifest. Of late years, too, more stock has been introduced into the country, and the farmers, getting away from the idea of devoting themselves entirely to wheat raising, are going in for diversified farming, with the consequent tendency to better cultural methods.

The Dakota climate is frequently referred to as one of extremes, and this declaration is pretty well justified. The absence of timber lands and the geographic position of the states in the center of a large continent and at a high altitude are bound to result in some rather startling differences of temperature between summer and winter. During the warm months the thermometer will register as high as one hundred degrees, but the nights are always cool. On the other hand, during the months of January and February the temperature is often from ten to thirty degrees below zero for days at a time. However, owing to the dryness of the atmosphere, this cold does not produce as much discomfort as a much higher temperature in some other sections of the country.

The seasons are most sharply defined in the Dakota farm country. For instance, the growing season opens suddenly in April, when the ground thaws rapidly, permitting seeding in a few days. Winter is generally ushered in, equally abruptly, by a sudden cold wave in November, when the ground freezes, and the fall plowing is stopped. It may be explained that owing to the difficulty of getting onto the fields early enough in the spring to plow for seeding nearly all the plowing is done in the fall after the harvest. This exposes the soil to the sun during the winter months. The Dakotas seldom experience any shortage of rainfall, and fortunately it is heaviest during the months of June and July, when the moisture is needed by the growing crops.

HAULING GRAIN

TYPICAL COUNTRY TOWN IN THE DAKOTAS

CATTLE ON THE RANGES

It should be stated, in all fairness, that the experience of old settlers as well as weather-bureau records all goes to show that the Dakota winters are not as severe as formerly. Indeed, the advantages of this region far outweigh the disadvantages. It has been many years since the "grasshopper pest" seriously threatened the prosperity of the farmers, and while strong winds are frequent at all seasons of the year—resulting in dust storms in summer and blizzards in winter—these gales do not reach the velocity of a tornado with anything like the frequency that they do in some states farther south.

The soils of the Dakota region embrace loam, clay loam, gravelly loam, sand, sandy loam, etc. One of the most important problems which confronts the Dakota farmer is that of drainage. This is due primarily, of course, to the very level character of the farm lands, an area dozens of miles square sometimes disclosing differences of only two or three feet in elevation. There are thousands upon thousands of acres in this great grain belt where the water from the melting snow on many occasions does not run off or soak into the ground soon enough to permit seeding at the proper time in the spring. Moreover, in some places the subsoil is heavy, gummy and impervious to water, and this, together with the fact that the frost line is from five to eight feet below the surface, makes underdrainage next to impossible. Some of the farmers in the Red River Valley "mud in" their crops, but many are not able to do even this, the land being so soft that it is unsafe to put teams on it. In the most poorly drained districts a copious rain in seeding time enforces the suspension of all farm operations for a week or ten days, while the water gradually soaks into the ground or slowly drains off.

The pioneer settlers in the Dakotas—and, for that matter, the present-day homesteader who has taken hold of undeveloped property—find conditions very different from those in almost any other part of the country. There are no rocks to be removed and no forests to be cleared. The settler has simply to build his house and barn, turn up the rich, level prairie soil and sow his seed. In the old days the average new resident was content with a sod house, but nowadays he is likely to want something better in the way of buildings even at the outset.

The value of Dakota farm land first began to mount rapidly when the adaptation of this country for wheat raising became known, and the increase has continued ever since. In any one of the more prosperous counties the visitor has pointed out to him farms which a generation ago were worth only a few dollars an acre, but which could not be purchased to-day for less than thirty-five dollars an acre. At the same time quite a change has been taking place in Dakota farming conditions. In the old days the whole countryside was given over to wheat raising, because no other part of

the country could compete with this region either in cheapness or volume of production. Gradually, however, wheat growing gained a foothold in other parts of the Northwest and in Canada, where conditions are just as favorable, and this in a measure ended the supremacy of the Dakotas, by making the supply more plentiful and the prices lower.

At the same time the Dakota farmers had forced to their attention the fact that the continual growing of wheat for a score of years had so affected the soil that the yield in many places was not more than one half what it was in the bonanza years. Accordingly the farmers have been forced to adopt a wiser course and introduce other crops. Flax has been introduced, and has proven most profitable, especially upon new land. There have been instances in which farmers have paid for their farms with the profits of two crops. Even the flax straw, which was formerly burned as useless, now brings two dollars a ton.

Within the past few years macaroni wheat has been introduced quite extensively, and although the price is lower than the standard varieties, this is offset by the circumstance that the yield is one third greater. Irish potatoes do well where drainage conditions are favorable, yielding as high as two hundred bushels to the acre. The climate and soil are adapted to the production of almost all kinds of vegetables. Corn has been acclimated to the short-growing season and is now one of the most important crops of the region.

A new epoch in the history of farming in the Dakotas may be said to have been inaugurated within the past few months by the discovery in Siberia of varieties of alfalfa which can be rotated with the wheat crops in this region. It has already been explained how successive crops of wheat in the Dakotas have exhausted the soil, and yet the farmers, owing to the large size of their farms and the scarcity of labor, have not felt that they could afford the luxury of summer fallowing—that is, plowing without a crop. It was up to the Department of Agriculture at Washington to find some alternate crop that could be rotated with, and accordingly Secretary Wilson sent Prof. Niels E. Hansen of the University of South Dakota to make an exploration of the cold, dry belt of northern Asia in the hope of finding something that would grow successfully in the Dakotas, where the climatic and soil conditions are much the same. The Dakota expert was entirely successful. He found two new kinds of alfalfa that will grow in dry soil with light rainfall and intense cold. This hardy alfalfa has been introduced in South Dakota on a small scale, and seeds will be distributed to the farmers of the entire region as rapidly as possible. The discovery will mean millions of dollars to the farmers of this region.

Although there is manifest in the Dakotas the beginnings of a tendency to adopt the idea of moderate-size farms, the large farm is still the order of the region. The acreage per farm for this entire region averages in the neighborhood of three hundred and forty acres. In some of the richest counties it is unusual to find a farm of less than five hundred to six hundred acres, and there are a number of holdings ranging from thirteen thousand to twenty thousand acres. Some of these monster tracts are operated as single farms, while others are leased on shares to tenants, no single tenant being permitted to work more than one section.

There are many outstanding mortgages in the Dakotas, but they are mostly held by local investors, and in few instances do they indicate adversity. Quite the contrary, in fact. In many instances the farm that a couple of decades ago was too large for the pioneer settler with a large family of small children has within recent years proven altogether too small for the grown-up boys. As the young men marry they buy adjoining farms, making the down payment in each case with a few hundred dollars advanced by the father, to which they add their own savings, and giving a mortgage for the balance. With such an incentive and anything like favorable conditions for crops it is but a few years until the sons have clear titles to their farms, and it is not unusual to see several brothers who have thus set out for themselves in the same locality pooling their issues in buying supplies and selling their crops, to the distinct benefit of all concerned.

The labor question is a more or less troublesome one in the Dakotas, as it is pretty nearly everywhere else in the West; but, as might be expected, the operators of the big bonanza farms are the hardest hit. It stands to reason that when any young married man of enterprise and push can secure, as he can in the Dakotas, a good farm with buildings, stock and machinery on the "crop payment" basis—giving one half the crop each year until he has clear title to the eighty acres or more—very few of them will be content to remain as day laborers. Thus the bonanza farmer is almost wholly dependent upon a class of unmarried men who spend their winters in the lumber camps and their summers in the grain-growing communities and who are none too reliable, for all that they demand exorbitant wages. The perplexities of this labor problem form one of the main influences for smaller farms in this part of the Northwest.

The Dakota country is particularly a land of promise for the farmer with two or three sons old enough to work, yet not old enough to be hankering after farms of their own. The farmer who has to hire help in the open market must expect to pay at least two dollars and fifty cents a day, besides furnishing board and lodging, and he may be unable to enlist the desired hired men at three dollars a day. This is gradually carrying conviction that it is not wise for the average farmer to have more land than he and his family can work, or at least not more than he and one man hired by the year can work. The usual wage for such a hand by the year is thirty dollars a month, with board and lodging in addition.

The wheat-harvesting period is a season of supreme activity in the Dakotas, much more being dependent upon the outcome, of course, than in farming territory where there is great diversity of crops. Despite the size of many of the farms and the level character of the country, there are in use comparatively few of the monster traction-engine-harvesting outfits that are employed with such magic effect in California. Even the horse-drawn combination harvesters are not employed to the same extent that they are in other parts of the Northwest, notably eastern Oregon and Washington. Grain harvesting is done as a rule with the binder, and thrashing is carried on by steam power. Usually the grain is not stacked, but is hauled direct from the shock to the thrasher, a plan that saves time, trouble and expense.

Vast portions of the Dakotas were known in the old days as ranch country, and in many localities the present-day visitor can yet see live stock wandering about with no seeming ownership, attaining maturity and going to market fat and sleek without ever having a particle of food other than native grasses, and no shelter except the sky. What more natural, then, than that the present-day residents of the region should turn their attention to the raising of a higher grade of stock and to the supplementary industry of dairying. Both North and South Dakota have facilities for technical dairy instruction, and at the state agricultural colleges at Brookings, South Dakota, and Fargo, North Dakota, are creameries in operation, where instruction, both theoretical and practical, is given in the making of cheese and butter. The bulk of milk is produced in this territory during the months of May, June and July, and the average yield for the year is three thousand pounds to the cow. North Dakota alone produces about half a million pounds of factory cheese each year, and a representative report shows ten pounds of cheese produced from one hundred pounds of milk.

The Dakotas have very fair roads considering the stage of development of the region. South Dakota has fifty-nine thousand miles of public road and North Dakota has approximately the same, but neither state has much more than two hundred miles of road surfaced with stone or gravel. In both states every male person between the ages of twenty-one and fifty must pay annually a poll tax of one dollar and fifty cents for road purposes in addition to the regular road tax, which in the case of North Dakota amounts to ten cents on each one hundred dollars of taxable property.

The prosperity of the major portion of the country embraced within the borders of the Dakotas is well evidenced by the character of the farm buildings. There may be seen here and there remnants of the primitive sod structures, but for the most part these have given way to farm buildings which would do credit to any rural district in the United States. These consist of good dwellings, grain houses, sheds for stock and generally large and well-built barns—these latter very necessary, because of the low temperature and severe winds of the winter. Almost all buildings are frame structures, and the Dakota farmer is very much at the mercy of the lumber "trust," for as a rule he has no standing timber on his farm.

The question of fuel supply is also a very vital one in this region, and was particularly so during the winter of 1906-7, when a shortage of cars greatly interferred with the coal supply. In public schools, rural free delivery and other similar necessities the Dakota farmers are well provided for, and in each state numerous farmers' institutes are held each year. The transportation facilities of the area are good—an important consideration, since the population being essentially an agricultural one, the local market for produce is small, and the products of the soil are shipped out of the states, while most supplies, in turn, are derived from outside sources. On the transcontinental railroads there are side tracks with platforms at intervals of not more than five miles, and at many of these shipping points there are elevators for storing grain. Some of the farmers load their grain directly into cars from the platforms, while others store it in the elevators to await future shipment. Thus the farmer can have the satisfaction of seeing his grain graded before it leaves his hands.

AFTER THE HARVEST

SHEEP RANCH IN WESTERN PART OF THE DAKOTAS

IN THE PARLOR OF A GERMAN FARMER'S DAKOTA HOME

He Got a Lesson

THE farmer was ready to start for town. As he gathered up the reins, "mother" came to the door. "Father," she called, "I wish you'd get me two dozen pearl buttons like those you got before, an' some white darnin' cotton an' two skeins of red worsted to match this."

She ran down the steps as she talked, approached the cart and held up the sample of worsted.

"Now, you'll be sure an' get them—buttons, darnin' cotton, worsted."

An ugly streak had smudged the old man's spirit that morning, and he said shortly, "No, I'm not goin' to do any shoppin'."

"Well, I'd like to know why you're not," exclaimed mother in a grieved tone.

"Because," said the old man, "it's get, get, get the whole time, an' I'm sick of it. Gee up!"

He shook the reins on Dapple's back, and drove away. Mother stared after him in blank amazement.

At sunset "father" returned. Eggs had come up and butter was selling high. He had had a fine time in the village, and in good spirits he put up the horse and went into the house.

Mother sat knitting calmly by the window, and received without comment the stock of village news as her liege lord dealt it out to her.

Towel in hand, father turned from the sink. His eyes fell on the dining table. It bore no signs of the evening meal.

"Why, mother!" he exclaimed, "Where's supper?"

Mother rocked violently. "There's no supper."

"Why not? I'm hungry! What's the matter, mother? Sick?"

"No," she replied. That was the supreme moment of her life. "But it's get, get, get the whole time, an' I'm sick of it."

Then she jumped up with a suspicion of a sniffle.

The old man turned red. "Mary," he said, "I'm sorry I was so testy. We're too old to be squabblin' like a couple of school girls. Let me off this time, an' I'll never rip out that way again, an' I'll hitch up an' drive back an' get your stuff after supper."

"Oh, it's all right," murmured mother, weakly. "I suppose I shouldn't have been so testy, either."

◈

We wish we could bring you to Springfield, where we do our work. You know that we are right in the middle of a big farming region—not too far West to forget the intensive-farming problems of the New England farmer, and not far enough East to be what the big Western farmer calls "tenderfoot." If we don't make FARM AND FIRESIDE the best farm paper in the world it is our own fault (and yours, for not helping us with suggestions and contributions)—it certainly is not the fault of our location.

How President Jackson Won His Wife

IN OCTOBER of 1788 a little company of immigrants arrived in Nashville, Tennessee. The star of empire, which is said to move westward, had not yet illuminated Nashville, and it was one of the most dangerous points "on the frontier."

The settlement was surrounded on all sides by hostile Indians. Men worked in the fields heavily armed. When two men met, and stopped for a moment to talk, they stood back to back, with their rifles cocked, ready for instant use. No one stooped to drink from a spring unless another guarded him, and the women were always attended by an armed force.

Col. John Donelson had built himself a blockhouse of unusual size and strength, and furnished it comfortably; but while surveying a piece of ground near the village, he was killed by the savages, and his widow was left to support herself as best she might.

A married daughter and her husband, Lewis Robards, were living with her, but it was necessary to take other boarders. One day there was a vigorous rap on the heavy door of the blockhouse, and a young man, whose name was Andrew Jackson, was admitted. Shortly afterward he took up his abode as a regular boarder at the Widow Donelson's.

The future President was at that time twenty-one or twenty-two. He was tall and slender, with every muscle developed to its utmost strength. He had an attractive face, pleasing manners, and made himself agreeable to every one in the house.

The dangers of the frontier were but minor incidents in his estimation, for "desperate courage makes one a majority," and he had the courage. When he was but thirteen he had boldly defied a British officer who ordered him to clean some cavalry boots. "Sir," the boy said, proudly, "I am a prisoner of war, and I claim to be treated as such." With an oath the officer drew his sword, and struck at the child's head. He parried the blow with his left arm, but received a severe wound on his head, and another on his arm, the scars of which he always carried.

The protecting presence of such a man was welcome to those who dwelt in the blockhouse—Mrs. Donelson, Mr. and Mrs. Robards and another boarder, John Overton. Mrs. Donelson was a good cook and a notable housekeeper, while her daughter was said to be "the best story teller, the best dancer, the sprightliest companion and the most dashing horsewoman in the western country."

Jackson, as the only licensed lawyer in western Tennessee, soon had plenty of business on his hands, and his life in the blockhouse was a happy one until he learned that the serpent of jealousy lurked by that fireside.

Mrs. Robards was a comely brunette, and her dusky beauty carried with it an irresistible appeal. Jackson soon discovered that Captain Robards was insanely and unreasonably jealous of his wife, and he learned from John Overton that before his arrival there had been a great deal of unhappiness between them because of this.

At one time Captain Robards had written to Mrs. Donelson to take her daughter home, as he did not wish to live with her any longer; but through the efforts of Mr. Overton a reconciliation had been brought about, and the pair were still living together at Mrs. Donelson's when Jackson went there to board.

In a short time, however, Captain Robards became violently jealous of Jackson, and talked abusively to his wife, even in the presence of her mother and amid the tears of both. Once more Overton intervened, assured Robards that his suspicions were entirely groundless, and reproached him for his unmanly conduct.

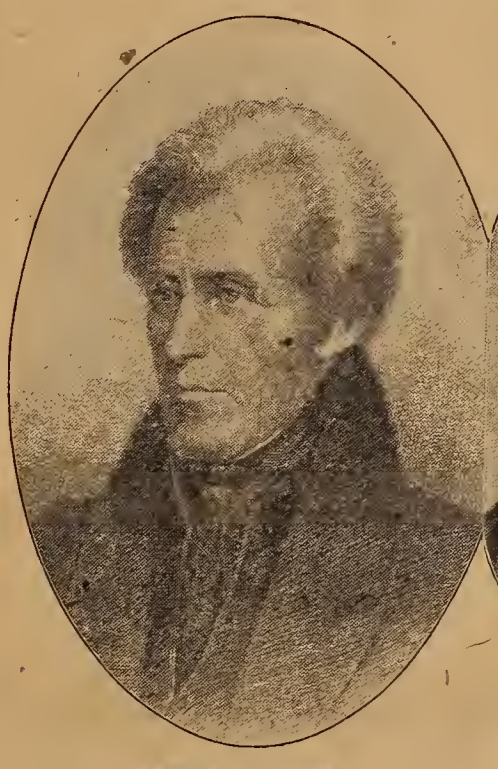
All of this remonstrance, however, was without perceptible effect, and the family was in as unhappy a state as before, when the Captain and his wife were living with *his* mother, who had always taken the part of her daughter-in-law.

At length Overton spoke to Jackson upon the subject, telling him that it was better not to remain where his presence made so much trouble, and offered to go with him to another boarding place. Jackson readily assented, though neither of them knew where to go, and said that he would talk to Captain Robards.

The men met near the orchard fence, and Jackson remonstrated with the Captain, who grew violently angry and threatened to whip him. Jackson told him that he had not sufficient strength to fight him, and that he would not advise him to try to, but if he insisted, he was ready to give him satisfaction. Nothing came of this discussion, and Captain Robards continued his abuse of his wife, and insulted Jackson at every opportunity. The result was that the young lawyer left the house.

A few months later the still-raging husband left his wife and went to Kentucky, which was then part of Virginia. Soon afterward Mrs. Robards wents to live with her sister, Mrs. Hay, and Overton returned to Mrs. Donelson's.

In the following autumn there was a rumor that Captain Robards intended to come to Tennessee and take his wife to Kentucky, at which Mrs. Donelson and her daughter were greatly distressed. Mrs. Robards wept bitterly, and said that it was impossible for her to live peaceably with her husband, as she had tried it twice and failed. She determined to go down the river to Natchez, to a friend, and thus avoid her husband, who, she said, had threatened to haunt her.



PRESIDENT JACKSON

MRS. JACKSON

Jackson when advised of this was very much troubled. He felt that he had been the unwilling cause of Mrs. Robard's unhappiness, though he was entirely innocent even of wrong intention. So when Mrs. Robards had fully determined to undertake the journey to Natchez, accompanied only by Colonel Stark and his family, Jackson offered to go with them as an additional protection against the Indians, who were then especially active, and his escort was gladly accepted. The trip was made in safety, and after seeing Mrs. Robards settled with her friends, Jackson returned to Nashville and resumed his law practise.

At that time there was no divorce law in Virginia, and each separate divorce required the passage of an act of the legislature before a jury could consider the case. In the winter of 1791 Captain Robards obtained the passage of such an act, authorizing the court of Mercer County to act upon his divorce.

Mrs. Robards, hearing of this, understood that the passage of the act was in itself divorce, and that she was a free woman. Jackson also took the divorce for granted; every one in the country so understood the matter, and at Natchez, in the following summer, the two were married. They returned to Nashville, settled down, and Jackson began in earnest the career that was to land him in the White House, the hero of the nation.

In December of 1793, more than two years after their marriage, their friend Mr. Overton learned that the legislature had not granted the divorce, but had left it for the court to do. Jackson was much chagrined when he heard of this, and it was with great difficulty that he was finally brought to believe it. In January of 1794, when the decree was finally obtained, they were married again.

It is difficult to excuse Jackson for marrying Mrs. Robards without positive and absolute knowledge of her divorce. He was a lawyer and could have learned the facts of the case even though there was no established mail service. Each of them had been entirely innocent of intentional wrongdoing, and their long life together, their great devotion to each other, and General Jackson's honorable career, forever silenced the spiteful calumny of his rivals and enemies of early life.

In his eyes his wife was the soul of honor and purity; he loved and reverenced her as a man loves and reverences but one woman in his lifetime, and for thirty-seven years he kept a pair of pistols loaded for the man who should dare to breathe her name without the utmost respect.

The famous pistol duel with Dickinson was the result of a quarrel which had its beginning in a remark reflecting upon Mrs. Jackson, and Dickinson, though a crack shot, paid for it with his life. Several of Dickinson's friends sent a memorial to the proprietors of the "Impartial Review," asking that the next number of the paper appear in mourning "out of respect for the memory, and regret for the untimely death, of Mr. Charles Dickinson."

General Jackson heard of this movement, and wrote to the proprietors, asking that the names of the gentlemen making the request be published in the memorial number of the paper. This also was agreed to, and it is significant that twenty-six of the seventy-three men who had signed the petition called and erased their names from the document.

"The Hermitage" at Nashville was built solely to please Mrs. Jackson, and there she dispensed a gracious hospitality. Not merely a guest or two, but whole families, came for weeks at a time for the mistress of the mansion was fond of entertaining, and proved herself a charming hostess. She had a good memory, had passed through many and varied experiences, and above all she had that rare faculty which is called tact.

Though her husband's love for her was evident to every one, yet in the presence of others he always maintained a dignified reserve. He never spoke of her as "Rachel," nor addressed her as "my dear." It was always "Mrs. Jackson" or "wife." She always called him "Mr. Jackson," never "Andrew" nor "General." Both of them ardently longed for children, but the blessing was denied them; so they adopted a boy, the child of Mrs. Jackson's brother, naming him "Andrew Jackson," and bringing him up as their own child.

Mrs. Jackson's portrait shows her to be an extremely attractive woman. The photograph does not reveal the dusky, Oriental tint of her skin, the ripe red of her lips, nor the changing lights in her face, but it shows the high forehead, the dark, soft hair, the fine eyes, and the tempting mouth that is smiling, yet serene. A lace head dress is worn on the waved hair, and the filmy folds fall modestly over neck and bosom.

When Jackson was elected to the Presidency the ladies of Nashville organized themselves into sewing circles to prepare Mrs. Jackson's wardrobe. It was a labor of love. On December 23, 1828, there was to be a grand banquet in Jackson's honor, and the devoted women of Nashville had made a beautiful gown for his wife to wear at the dinner.

At sunrise the preparations began The tables were set, the dining room decorated, and the officers and men of the troop that was to escort the President-elect were preparing for the long ride. Their horses were saddled and in readiness at the place of meeting. As the bugle sounded the summons to mount, a breathless messenger appeared on a horse flecked with foam. Mrs. Jackson had died of heart disease the evening before.

The festival was changed to a funeral, and the trumpets and drums that were to have sounded salute were muffled in black. All decorations were taken down, and the church bells tolled mournfully. The grief of the people was beyond speech. Each one felt a personal loss.

At "The Hermitage" the blow was terrible. The lover-husband would not leave his wife. In those bitter hours the highest gift of his countrymen was an empty triumph, for his soul was rent with the greatness of his loss.

When she was buried, at the foot of a slope in the garden of "The Hermitage," his bereavement came home to him with crushing strength. Back of the open grave stood a great throng of people, waiting in the wintry wind. The sun shone brightly on the snow, but "The Hermitage" was desolate, for its light and laughter and love were gone. The casket was carried down the slope, and a long way behind it came the General, slowly and almost helpless, between two of his friends.

The people of Nashville had made ready to greet him with the blare of bugles, waving flags, the clash of cymbals and resounding cheers. It was for the President-elect—the hero of the war. The throng that stood behind the open grave greeted him with sobs and tears—not the President-elect, but the man bowed by his sixty years, bareheaded, with his gray hair rumpled by the wind, staggering toward them in the throes of his bitterest grief.

In that one night he had grown old. He looked like a man stricken beyond all hope. When his old friends gathered around him, with the tears streaming down their cheeks, wringing his hand in silent sympathy, he could make no response.

He was never the same again, though his strength of will and his desperate courage fought with this infinite pain. For the rest of his life he lived as she would have had him live, guided his actions by the thought of what his wife living would have him do—loving her still, with the love that passeth all understanding.

He declined the sarcophagus fit for an emperor, that he might be buried as a simple citizen, in the garden by her side. His last words were of her, his last look rested upon her portrait, that hung opposite his bed, and if there be dreaming in the last dark, the vision of her brought him peace at last.

MYRTLE REED.

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Spring Fever

Say! spring's here, and all the birds
  Are liv'nin' up once more.
The bees are gettin' busier than
  They ever was before.
The medder grass, and trees, and flowers,
  Is hankerin' to grow.
But I'm kinder all unsettled like
  Because I'm fev'rin' so.

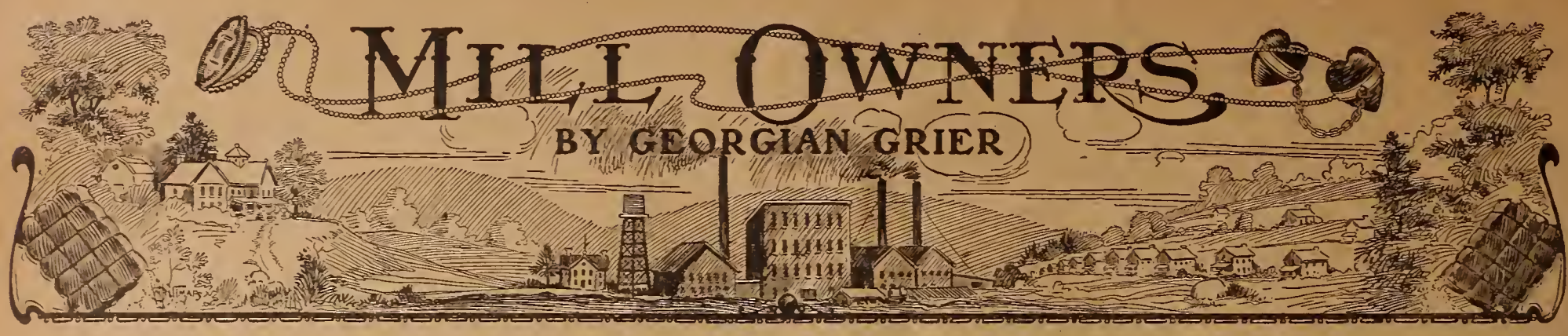
Maybe you never felt it, but
  Regular every year
When things begin a sproutin'
  I get to feelin' queer.
And everything that's green and grows
  Seems whisperin' to me low
And offerin' me their sympathy
  When I'm a fev'rin' so.

"The boy is jest a Nature child,"
  Is what Aunt Mandy said,
And that I ought to use my vim
  To help to earn my bread.
But what's the good of earnin' bread
  Is what I want to know,
For nothin' don't taste good to me
  When I'm a fev'rin' so.

Bill's told me that the mushrooms was
  A gettin' awful thick,
And that the trout was raisin' fine
  On little Willer Crick.
But Saturday we're goin' to plow,
  And up and down the row
I'll have to drive the old gray mare
  When I'm a fev'rin' so.

"A man's best friend is in his book,"
  Most every youngster's told,
And that you ought to find it out
  Before you get too old.
I looked all through the spellin' book
  And kinder doubt it, though,
For all outdoors is my best friend
  When I'm a fev'rin' so.

—Ralph H. Worsley in Sunset.



MILL OWNERS

BY GEORGIAN GRIER

CHAPTER I.

BURKE KENNEDY strode half down the car, his head high, his shoulders square, his eyes bright with the acclamations which still rang in his ears. It had been a great week, and this, the last day, had been a fitting crown for the busy ones before. His boat had won, amid waving handkerchiefs and the plaudits of a thousand voices; and he, its captain, had been the cynosure of many eyes from start to finish, of many thoughts from Monday morning until this, the end of the brilliant week. As he sank into a seat on the platform side of the car, where he could look into the faces of the many who had come to see him off, his hand yet tingled with the grip of the crowd he had pushed his way through.

For twenty miles over the road his brain throbbed with the remembrance, his hand still tingled and his eyes remained bright; then calmer thoughts came. It was all being left behind now, and on ahead was the little cotton mill, away from a railroad and shut in by hills, that in the old days had seemed to shut out even ambition. And now he was going back to them, just as the many avenues of ambition were broadening under his feet. For what?

At the dingy station there were no welcoming faces, no extended hands. The mail carrier threw a flat pouch across his shoulder and limped off toward the company's store, from which mail was distributed. The station master glared discontentedly at the big trunk, then bent over and dragged it back from the edge of the platform. The owner followed, ready to assist, but deterred by the sour look of the man.

"Heavy, Giles?" he grinned.

"Stones," declared the old man aggressively, but without malice; "ye couldn't ever 'a' filled a box like that with nothin' else. What'd ye git it for? Wa'n't the bag ye carried off good enough?" He straightened up stiffly, and for the first time took a good look at the captain of the winning crew. "H-u-h!" he ejaculated slowly, "ain't ye ever goin' to stop growin'? That's the why, is it? Big body, collegin', big idees, an' now big trunk. It's fact'ry owners here that travel with trunks. Hope ye ain't goin' to set up for a fact'ry owner with jest a trunk, Burke. If ye do, the mill folks'll squench ye, sure." He looked at Burke's hands with growing interest. "Where's the kid gloves? In your pocket?"

The young man laughed, a big, hearty, full-souled, compelling sort of laugh, such as was seldom heard in Mill Run Valley.

"Never owned a pair of gloves in my life, Giles," he declared. "They haven't entered into my ambition as yet, and I'm not setting up as a factory owner—as yet, also. The trunk is mostly filled with athletic stuff, boxing gloves, foils, dumb bells—yes, and a few books. My colleging didn't eschew books altogether, Giles. Now about the trunk. Who can I get—Or no, I remember; there isn't any one here to do that sort of thing. I'll come over after it with a wheelbarrow. The trunk's too much for even my shoulders, that distance. But how is Mill Run these days? Anything new? Having no correspondence, it has been mostly blank to me the past four years."

"Ben Tobet's hired Widder Coon's garden for two years, an' pays her twice what's worth, an' grows garden sass for her an' him. He's forever diggin' an' plantin', mornin' an' night an' Sundays—all the time out o' mill whistle. Folks do say it's a set up. Ben can't talk much, ye see, an' that's his way o' courtin'. I don't know, but folks do say they've caught him whisperin' an' makin' eyes at the carrots an' things he was growin' for the widder. That's about all the news, I guess, 'cept the schoolhouse burnin' an' no talk o' buildin' it up—an', yes, Anna Belle's home ag'in. Got here yesterday, an' the Squire's carriage come for her an' the trunk. Say," with more animation, "s'pose I send a boy for the Squire's carriage? Bein' a trunk makes it sort o' fact'ry-owner style, an' the Squire'd be proud to do the carryin'."

Burke laughed again.

"Don't try to be sarcastic, Giles," he advised; "you're too heavy for it. But how did Miss Woodmansee look? Improved, of course, and—or well," at the grin on the station master's face, "perhaps you wouldn't be a good judge. I think I'd better go right on to Ben's, where I used to board. I suppose he still lives alone?"

"So fur, yes," chuckling; "an' Anna Belle she's—"

But the young man strode away, calling over his shoulder, "I'll be back for the trunk."

There were no buildings in sight from the station platform, nothing but a rocky country road winding up a slope through scrub oaks and pines. But from the top of the slope half a mile away, Mill Run could be seen another half mile beyond, down in the valley, two dingy, irregular lines of houses crowding a dozen or more rods of the still winding and rocky road, and forming, as it were, an ax helve to the black factory blade.

Burke paused thoughtfully at the top of the slope. Until the past four years this had been his home, all the home he had ever known; and yet there had been none of his kin here, no one who had ever cared for him. There was no necessity for his coming back, no reason, apparently. One of his college chums had urged his companionship West, to build up their fortunes in a promising young city; and another had obtained the offer of a position in an office where there would be sure and rapid promotion. Back there, beckoning to him through his college success and friendships, were many avenues leading toward prosperity, here there was nothing; and Burke Kennedy, above all else in his life, had shown ambition.

But he had declined all offers and suggestions promptly and positively, even the friendly invitations of his classmates. One hill of his life surmounted, he was impatient for the next, and visiting and touring trips and camping offered no attractions. The only strange thing was that this next hill of his ambition should be placed in the unambitious valley from which he had escaped. But as he reached the slope top his gaze had flashed down, not to the black factory of his boyhood toil, nor to the lines of mill tenements, but across to the opposite slope, to a big, rambling house almost hidden by its shade trees, the home of the mill owner and his daughter, Anna Belle. So he had returned.

Even now the Woodmansee carriage was winding down from the big house, and they met in front of the factory, where the Squire and his daughter alighted, the one to enter his office and the other to go on to the one store after their mail.

They both hesitated and looked at Burke inquiringly. Strangers of that build and manner were not common at Mill Run. The Squire's hand half rose. Then Burke raised his hat, and they knew. The Squire's hand fell.

"What! Burke Kennedy!" he exclaimed. "When do you expect to stop growing, boy? So you've come back to the factory, eh? Well, well! I didn't know but you might try something else. Schooling's pretty apt to spoil the working class for work, and college—well, it's only four years lost, and you're young. Seen Mr. Derry?"

"Not yet, sir. I was just about to enter the office."

He looked toward Anna Belle. She was brushing some flecks of dust from her skirt with a handkerchief. She had noticed his presence by the slightest of bows. Neither she nor her father had offered to shake hands. Why should they? He was only part of the factory.

Burke's face clouded a little, and he turned toward Mr. Derry, the superintendent, who had seen the carriage approaching, and was now descending the office steps.

But as Burke turned, Anna Belle shot him a swift covert glance, in which was surprised approval. The superintendent, facing them, saw, and his face darkened. The superintendent was only five feet seven, and not prepossessing.

"Hello, Kennedy," he said sourly, "you're back again. Want a job, I suppose?"

"Yes, sir. What have you?"

"I don't know as anything. Your old place in the office is filled, of course."

"Well, the weave shop, then. You know I worked four years there, weaving and as loom fixer."

"No, places full," shortly.

"The carding room, sir, or the dye house or finishing room. I've worked a year or two in all of them, and in the spinning room, too."

"All full."

"I made a special study of textiles while away," suggested Burke. "I think maybe I could give satisfaction in designing."

"Of course you could," mocked the superintendent. "I will see that Mr. Bridges is discharged at once—or perhaps you would like my position better. You seem to know it all. Could you be superintendent?"

"Yes, I think I could," quietly. "I have made myself familiar with all the departments, from cotton bales to bookkeeping. Running the engine is about the only thing I know nothing about. However, I have no idea of applying for your position yet."

"Well, I haven't anything for you," snapped Mr. Derry. "Not a thing. You've had too much schooling to be a good workman."

The bookkeeper was standing by an open window of the office, and had overheard.

"There's that firing job, Mr. Derry," he called. "The engineer has been doing both his own work and his fireman's for the past few days, and it's more than the man can stand. We've been trying to get somebody to fill the fireman's place, but don't seem able to find the right sort of man. Burke looks strong enough. It's a mighty hard and dirty job," significantly.

The superintendent caught the suggestion.

"Why, yes, you can have that, Burke," he said, more affably. "Do you want it?"

"Certainly. It will give me a chance to learn the two things I am dullest on, firing and running the engine. When may I commence?"

"At once. Ben Tobet will show you what to do."

"Ben Tobet?"

"Yes. Ben's our engineer now. He fired for a year, then got the engine."

"They both hesitated and looked at Burke inquiringly"

CHAPTER II.

BURKE was standing in the doorway of the boiler room, a mechanic's paper cap on his head and his face black with coal dust. It was the noon hour, and he was munching a piece of bread. Squatted on the ground outside the door was Ben Tobet, also at work upon a piece of hard bread. A dipper of water stood on a bench between them. From time to time Ben looked at his companion curiously. They had been keeping house together a month now, in the old way.

"Schoolin' ain't seemed to help ye much," observed Ben presently, giving voice to his thoughts. "Here I be runnin' a engine, an' you doin' my firin'; an' I ain't never put a liek to study in all my life."

"I'm glad you have done so well, Ben," approved Burke. "As for me, I have the satisfaction of knowing more than I used to, and that's something."

"'Tain't made Anna Belle ask ye to shake hands with her, though."

Burke looked at his companion curiously.

"Why do you say that, Ben?" he asked.

"Oh, pshaw!" scoffed Ben. "Ye know well 'nough. Ye wa'n't but ten then, an' me fourteen; but I remember jest as if 'twas yesterday—an' you do, too. We was out in the road pilin' up stones, makin' a mud-puddle pond, an' Anna Belle an' one o' her boy visitors come walkin' past. Anna Belle tossed her head an' drew her skirts back so's not to touch us, an' the boy stepped way off on the grass to keep his shoes from gettin' s'iled. He! he!" snickering at the remembrance; "I guess we was pretty consider'ble dirty, 'bout like pigs, or wuss. But ye jest stood up quick, with your head back, like ye have a way o' doin' sometimes, an' said slow an' loud 'nough for 'em both to hear, that Anna Belle should come to ye some day an' ask to shake hands o' her own accord, an' that ye would grow up to be bigger an' finer lookin' than the boy she was walkin' with. 'Twas sure comical, though I mind I was a little scared at the time, ye spoke in such a solemn, ghost-seein' way. But pshaw! what am I tellin' ye for? Ye ain't forgot."

"No, I haven't forgotten," admitted Burke, an odd light in his eyes, "but I supposed every one else had. That was my real start in life, I think, Ben. I had read somewhere that the right kind of physical exercise would develop one's strength and figure, and that week I

began my athletics with a horizontal bar, a pair of dumb-bells hewed from an oak log, and a striking bag of stuffed hay, supplemented with running and jumping and such exercises."

"Think that's what built ye up so?" asked Ben, with something like envy in his voice.

"Hardly; I'm naturally large framed. But I believe it helped, and it got the strength and size under my control—gave me responsive and elastic muscles to handle them quickly and easily, you know. The same thing would be good for you, too, Ben, as I used to say."

Ben shook his head.

"Too much work," he answered. "Besides, I don't see the use o' bein' able to jump 'round quick an' soft as a cat, like you do. You're half bigger than me, an' I get 'round four times as slow an' make ten times as much noise. But what o' that? Noise don't hurt, an' I get 'round as fast as I need to. An' there's another thing. Seems to me ye're jest about as dirty as when Anna Belle pulled in her skirts, an' ye ain't makin' nigh so much as me, an'—d'ye s'pose ye're any closer to Anna Belle stickin' out her hand to be shook?"

"Yes."

"Ye mean ye really believe she'll ever do it?" incredulously.

"Certainly."

"Haw! haw! that'll be when ye're a fact'ry owner—or mebbe ye're goin' to be a fact'ry owner, too?" derisively.

"That's my intention," composedly.

Ben's mouth opened, then he threw back his head in a roar that brought tears to his eyes.

"Ye're sure it, Burke," he choked, "or else ye're pokin' fun with a straight face. Sometimes I don't know which. Mebbe it's the books learned ye that—an', yes, 'bout them same books," returning to his reminiscent mood, "I call to mind the identical thing that started ye to 'em. We was off to a Sunday-school picnic, an' the whole o' Mill Run was there—Squire, Anna Belle, some o' her little girl friends who was visitin', the mill folks, an' all. The Squire was smilin' an' makin' little speeches 'bout bein' good an' happy; an' Anna Belle an' her friends was keepin' together in a bunch an' gigglin', though sometimes when the Squire was lookin', Anna Belle would stretch out the ends o' her fingers to be touched—an' that's the way 'twill be with you, Burke, if she ever does bend down so fur. Well, I remember 'twas 'bout a year after the mud-puddle pond, an' we little fools was hangin' 'round clost as we could to the big folks an' listenin'. An', well, by an' by somebody asked somebody else something 'bout one o' them old myth folks that have something to do with outdoors an' good times; but nobody seemed able to answer, though everybody asked everybody else. Then one o' the visitors snickered, an' said o' course the big-eyed mill boy would know, meanin' you. At that everybody looked at you an' j'ined in the snickerin'. Remember it?"

Burke nodded.

"I s'posed ye would. But ye can't remember how ye looked. Ye got red's a beet, an' your lips was so trembly ye couldn't speak for a minute. All o' us watched to see ye bust right out bawlin'. But ye didn't. Ye threw up your head an' walked straight in among the big folks an' told 'em ye couldn't answer the question right off at once, but that ye'd be able to before long, an' to tell 'em anything else they was ign'rant of. Lord! how they did laugh then; an' I didn't blame 'em much. That night ye got out all the books ye could find, an' commenced to study into 'em; an' that night, too, was the first time I ever heard ye speak o' goin' off to school. But ye kept it up an' saved money till ye went, though it took six years. Remember the Collinton girl?"

"Yes, I picked up a book this morning that had her mother's name on the fly leaf, and it made me think of her. Meg was a nice little girl, though she was awfully troublesome and homely. Most of the books I studied had belonged to her mother, and Meg turned them over to me. What's become of her, Ben? Funny I hadn't thought of her before, or seen anything of her. Has she gone off?"

"Six months after ye left for school," Ben answered; "an' she got to be as uneasy's a lost killdee 'fore she started." He regarded Burke curiously, thoughtfully. "Hombly, d'ye say, Burke?" he went on presently. "That's 'cause ye'd got a distaste for her an' couldn't see straight. As a little tot she was ugly's a knotty old fence rail, all legs an' big eyes; but they'd started to tone down an' the hollers to fill up long 'fore ye went to school, an' if ye hadn't got to dislikin' her so ye'd 'a' seen she was promisin' to be a mighty pretty girl. That's the one thing 'bout ye, Burke, that I always felt was out an' out mean, the way ye dodged

"Twenty minutes later he stood before Ben, his eyes blazing, his fists clinched"

from poor Meg. She thought ye was the world an' all, an' stuck to ye like a shadder. Everything ye did was right; an' if 'twa'n't right, an' anybody else said so, she'd fight 'em like a wild cat. When ye started into them athletics, she made up athletics of her own an' stuck to 'em just as hard; an' when ye settled down to books, she settled down to books, too, an' studied an' learned just as much as you did. Ye ain't forgot?"

Burke made a grimace. "No," he answered. "They used to call her 'Burke's Bur,' and that kept me irritated. I don't think Meg minded it, though. I was a little mean, I admit, the way I dodged and skulked to keep away from her; but she—she was rather a nuisance, the way she tagged. She wasn't so bad as she got older, and the last year or so I was here I don't remember noticing her much. So she's gone. Do you know where?"

"Not an idee, except to get more schoolin'. After ye left she kept gettin' more an' more restless, feelin' she was wastin' herself an' losin' time. Bein' you an' I had lived together, she talked over things to me that she didn't to nobody else. When she left she had jest forty-two dollars, an' she told me she was goin' off to keep learnin' things long as Burke did, so he wouldn't ever be ashamed o' her. She hadn't the least idee herself where she was goin'. An' oh, yes, she told me to give ye all her books, an' such o' her playthings an' trinkets as ye'd be willin' to take. One of 'em was the little locket picture o' herself that she used to wear 'round her neck. She took it off an' told me 'specially to give it to ye, but I'd clean forgot. I'll get 'em out for ye to-night."

Burke was looking thoughtful.

"Poor little Meg," he said; "not fourteen years old, and going out into the world after an education with only forty-two dollars. She used to be a lot of bother, but I wish I knew where she was, so I could write for her to come back. How old was she when her mother came here, Ben?"

"Two an' a half or three, I guess. Her mother only lived a few days, an' couldn't talk any. She tried to tell something, the Collintons said. She was sick on their doorsteps, ye know, an' they took her in. After she died they found two or three hundred dollars, but no clue except the name Marguerite on the baby's clothes. When the money was used up the Collintons put her into the factory. She was only eight then. That's all anybody knows, I guess. Poor little Meg!"

"Poor little Meg!" repeated Burke. "I wish I could help her. I wish I had been kinder in the old days."

◈

CHAPTER III.

BURKE turned the little locket over in his hand, his face still thoughtful. Meg, not fourteen and showing signs of beauty, going out into the world with her ambition and ignorance. And that had been four years ago. She was now eighteen. Where? To what had her ambition or her ignorance carried her?

The metal back of the locket was corroded with rust, the picture itself almost defaced. It was after the day's work, and Burke carried the locket to the open door for more light, and tried to brighten the picture with his handkerchief.

But even that slight pressure caused the locket to fall apart, the back in one hand, the indistinct face in the other, while a folded slip of paper dropped from somewhere and slipped between his fingers to the floor. Burke picked it up carelessly, thinking it a bit of padding to protect the picture. Then some finely written lines caught his attention, and he stepped outside in search of yet more light. The writing was almost obliterated, in spite of its protection between the locket cases, but many of the words were decipherable. He spelled out these, and from them guessed some of the illegible words between. He made them read:

"Baby Marguerite:—These lines are for you to read years later, in case anything should happen to me. I am feeling queerly to-day, and we are among strangers, though near my own - - - more dang -" Here followed two entire undecipherable lines, then, "Job Woodmansee - - your uncle - - - - - deed in his - - - but on record - - good lawyer - - - case to him - - - - half property - - - - -

"Your moth -

"Marguerite Banne - - - -"

A quick exclamation from Burke called Ben to his side.

"What's that old story about Squire Woodmansee's sister marrying a man her father didn't like and being disinherited?" he demanded. "What was it about his writing a letter and stealing out in the night to post it? Do you remember?"

"Some; but 'twas all stuff. Folks said the old man got sorry an' folks said he didn't, that he wrote a letter an' that he didn't, that 'twas the Squire who wanted to find his sister an' that 'twas he who was tryin' to keep her from bein' found. Folks always talk that way. Nobody knows anything except that she married a man named—named—"

"Banne?" suggested Burke.

"Banne—Banne," doubtfully; "n-no, yes, Bannerman, that's it; an' the old man made a row, an' they went off South, to Alabama or Mississippi or somewhere, an' that's all anybody knows."

"Sure there wasn't any attempt at reconciliation?"

"Oh, that's jest a made-up story," declared Ben. "O' course I ain't sure; I wa'n't mor'n ten or 'leven, an' you 'bout six. But I remember there was all sorts o' stories, an' I believed all of 'em then, an' don't believe any of 'em now. I s'pose mebbe somebody seen the old man slippin' out arter dark—he was poor minded, anyway—an' that started the whole silly talk. It was jest a month or so before Meg an' her mother come."

"That makes it all clear then," said Burke. "Here, Ben, read this."

But Ben turned the slip over and peered uncomprehendingly at both sides, then handed it back.

"I never was any hand to read puzzles an' fly specks," he grumbled. "What do you make on it?"

Burke read the paper slowly. Ben's eyes widened, and his mouth opened and shut several times without causing any sound.

"That would make little Meg to be Anna Belle's own cousin, an' to own half o' Mill Run," he said at last in an awed voice.

"Precisely. If the old man's letter was intercepted, he must have written another which got through. And he must have conveyed some warning, for Meg's mother came here quietly, without announcement, intending to seek the advice of a good lawyer."

"Why'd she come right here," interrupted Ben. "Mill Run ain't no lawyer, unless ye call the Squire's bookkeeper, who's the notary public, one. Why didn't she go to some near-by town where lawyers are plenty, an' where the Squire wouldn't be watchin'?"

"I imagine Mrs. Bannerman felt her illness coming on several days before she reached here," said Burke. "The paper shows that, and she fastened it in the locket thinking it would be safer there, around the child's neck. Then when she got North, even though her own brother was an enemy, she had a dying mother's natural wish to get her baby as near home as possible before she left it. Very likely she intended to see her father."

"Yes, I s'pose that's so," Ben said, his eyes still bulging. "But Lord! to think o' Anna Belle bein' Meg's own cousin, an' she never spoke to her in all her life, not even with the tips o' her fingers, I don't believe. Wouldn't I like to be standin' by when she finds out, an' the Squire, too. But if he's got the deed he ain't goin' to let folks see it if he don't want to, an' bein' on record won't prove that Meg's the right one. The Squire's sister had the name o' bein' the most beautiful woman in the whole country 'round, folks say; an' though Meg was changin', she was a mighty long way from that. What'll ye do?"

"Find Meg first," promptly, "then search Alabama or Mississippi or somewhere for the place they came from. Perhaps that will yield some proof."

Ben shook his head.

"Won't do," he declared. "Ye can't find Meg, in the fust place. It's the whole United States to grope 'round in. Then how much money ye got?"

Burke made a grimace. "Four dollars," he answered; "but the company owes me for a month's work. That will do for a start. Besides, it may not be so difficult, after all. Meg was ambitious, and would try for the very best. There are not more than half a dozen first-class women's colleges in the country, and when she found she couldn't afford one of them, she would try at the next best, and then the next. Meg was plucky. I shall go from one school to another until I find some clue. I owe it to little Meg, Ben, for the way I used to ignore and dodge her, when she—she always thought so much of me," his voice becoming grave and a little tender. "I shall bring her to her own if it takes ten years."

"An' costs every cent o' your four dollars," scoffed Ben, "for that's all ye've got, an' mebbe all ye'll have. Ye told me ye never made no bargain with the superintendent, only jest took the job an' went to work. That wa'n't business. Ye'd ought to known that from havin' worked under him before. An' from the way he looks at ye now there seems some special spite. Have ye been sassin' him or anything?"

"No—or, well, maybe I did, just a little," confessed Burke.

"Likely that's it, or he may have heard 'bout Anna Belle goin' to shake hands with ye. I believe I spoke o' it myself to some o' the boys. Ye see, he's planned for her himself, in his own mind, an' he's chock full o' spite an' jealousy. I've been misdoubtin' your wages ever since I found there wa'n't no bargain; an' yesterday, when the rest o' us was paid an' you wa'n't, I felt sure. Ye said 'twas jest a mistake, bein' a new hand; but I advise ye to go 'round by the office the fust thing in the mornin' an' find out."

So the next morning, when the bell called them to work, Ben went straight to the engine room and started the machinery. Burke stopped at the office.

Twenty minutes later he stood before Ben, his eyes blazing, his fists clinched.

"Derry's up in the office washing the blood from his nose," he said briefly. "I knocked him down. I've come to say good-by."

Slow-witted Ben could only catch his breath and stare.

[TO BE CONTINUED NEXT ISSUE.]

Famous Bits of History

Jackson at the Battle of New Orleans

IN THE month of December, 1814, a fleet of British war vessels appeared at the delta of the Mississippi River, and there began a series of engagements which the invaders expected would lead easily to the capture of New Orleans.

But they reckoned without Andrew Jackson. He had just been made commander of the Army of the South, and he took quick steps to save Louisiana.

The British captured outposts at Bienvenu, and started toward the city. Jackson sent gunboats down the river to shell their camp, and himself attacked them on the land side, so that instead of marching forward they were forced to wait for the main army. Immediately Jackson entrenched himself along the line of a canal extending from the river to an impassable swamp.

The British were also busy. On Christmas Day Sir Edward Pakenham, a soldier who had fought with Wellington in Spain, arrived to take command. With eight thousand men, many of them Wellington's veterans, he prepared to give the backwood's general a lesson. He cleared the river of American boats, and on the twenty-seventh moved his whole army forward for an attack. He camped at Chalmette's plantation, where he was greatly harassed by the mountaineers. On the twenty-eighth, after a terrific cannonading, he was repulsed.

He now resolved to bring up the heavy siege guns, and on the morning of New Year's Day, 1815, when the fog lifted from the American breastworks, they found themselves confronted by three half-moon batteries, on which were mounted thirty pieces of heavy ordnance. The British artillery was better, but Jackson had formed a large part of his barricade of cotton bales, and against these yielding masses iron and steel could do little. The British barricade was of sugar barrels. They were quickly knocked to pieces, and Pakenham had much ado to get away his guns.

Chagrined at his defeat, and stung by the scorn of Admiral Cockburn, Pakenham resolved on a plan of infinite daring. He determined he would storm Jackson's lines on both sides of the river, and overwhelm the Americans by force of men and arms.

He sent Colonel Thornton to attack the batteries on the right bank, and at dawn on the eighth he himself led the advance on the American entrenchments. Jackson had been re-enforced, his breastworks strengthened, and with his regulars and his sharpshooters from Tennessee and Kentucky he met the onslaught. The British charged into a veritable cauldron of fire. Pakenham, after having a horse shot from under him, was himself killed. Two other generals were wounded. The attack on the American right was repulsed, and in a moment the repulse became a rout. Jackson had saved the South in one of the most remarkable victories in history. The British loss on the west side of the river was twenty-six hundred, killed, wounded and taken prisoner; the Americans lost eight killed and thirteen wounded.

Painted by A. I. Kellar

JACKSON AT THE BATTLE OF NEW ORLEANS

Lee's Farewell to His Men

BY ARTHUR HOYT

THE story of Lee's retreat and his final surrender is a story of desperate battle in the face of overwhelming odds. In his defense of Richmond he had shown marvelous strategic ability. For more than eleven months he had held Grant at bay, although his army amounted to no more than one third the forces he was opposing. But if he baffled them long, his men could not hold out forever against superior numbers under Grant's great generalship.

When it became known on the second of April, 1865, that the Confederate government would have to leave Richmond, Lee, whose main hold was Petersburg, still had hopes of getting his army safely into the Carolinas. He planned to conduct it to Danville, on the southern border of Virginia, and he gave orders that his various corps, which were still holding a line against the Federals, should concentrate at Amelia Court House. He knew that Grant would pursue him, and with his keen foresight he also saw that Grant would break up his army into detachments in order to move with greater facility. Lee's plan was to keep his own men well in hand, and by attacking these detachments separately to successfully stop pursuit and demoralize the Northern army. To have everything in readiness and a well-fed army at his command, he had directed a vast amount of supplies sent to Amelia Court House. On what would have happened had his orders been carefully executed it is idle to speculate. What did happen was that when he arrived at Amelia Court House he found no provisions. Some one had blundered. Some accounts say that the commissary department never received proper orders; others say it was through the stupidity of an officer that the supplies failed to reach Lee. At any rate, instead of having a well-nourished army of fighters able to maneuver with rapidity, he had a set of hungry troops, half of whom had to scatter to procure food.

The situation was now indeed grievous. It was a barren land, and even with their best efforts starvation stood at the tent door of Lee's army. Worse, Sheridan, who was pushing him, had gotten between him and Danville. With proper troops he could have given battle, but now it was merely a question of getting away. On the night of the fifth of April he turned toward the hills of Farmville, hoping there to be the better able to stop pursuit and to get across the Appomattox.

But the life had gone from his men, and the line of march was like a field of battle. Jaded horses dropped in their tracks, unable to pull the heavy wagons. Men tottered along wild-eyed, haggard with hunger; many cast away their guns, for they had no strength or will to carry them. There was the one wild desire to flee; but hundreds could not even bear their own bodies, and dropped from exhaustion. Here and there along the road wagons and piles of baggage blazed; now and then some ammunition blew up with a deafening roar,

[CONCLUDED ON NEXT PAGE]

Painted by Clyde O. DeLand

LEE'S FAREWELL TO HIS MEN

The Strange Adventures of Helen Mortimer

By Maude Roosevelt

[CONTINUED FROM LAST ISSUE]

"NEVER have I sat in such a hard chair; they were the sort one sees in cheap restaurants, with hard seats and upright backs.

"'If she does not come soon, I shall feel my way down to the floor, and sit there!' said Suzanne.

"Then the sound of some one descending the stairs came to us, and we heard Mrs. Morris speaking, evidently to the doctor at the front door; then it closed, and she came to us. 'Now is your time to escape,' she said. 'Come quickly. It is dark outside. You can go by the front way.'

"'How is he?' whispered Suzanne; and she replied, 'Better. The sleep has cleared his mind, and the doctor says that now he believes he has had a slight paralytic stroke, which will leave him disabled in the right leg and arm.'

"'Ah! Did he tell Faulkney this?'

"'Yes. He took it quite philosophically, and said he wishes to-morrow, or as soon as he is able, to he moved to his sister's. Now the trouhle is, Suzanne, he will think we have stolen those jewels from him!'

"Suzanne looked troubled, and after reflecting a moment, took a card from her bag, saying, 'As soon as you think he is well enough to learn of them having been taken, wire me to this address, and I shall immediately send him a letter, which I shall have all ready, to explain everything. I think he will he reconciled to it now that he is likely to be a cripple all the rest of his life, and perhaps may he glad they have got back to Lady Hamilton; at any rate, you will be exonerated. But I should give him those letters I gave you, and get your reward as soon as possible, if I were you.'

"After a little more talk we slipped noiselessly out of the house, and found it quite dark in the streets, for it was long after six, and in November the days are very short here.

"We got into the hansom and drove back to the hotel, for Lady Hamilton lives out of town, and Suzanne consequently was obliged to wait until to-day to take the jewels to her. She showed them all to me last night, and oh, such superb things I have never seen! And to think they were all in that trunk up in our little room in New York, five thousand pounds' worth of diamonds, rubies, pearls, and I think every known gem!

"Well, this morning her hrother came in answer to her telegram. He is a good-looking young fellow, of ahout twenty-five. They went off together to the Hamiltons' place in Sussex, so I have had this entire day to write to you.

"And now, my dears, all the tragedy is over, the mystery solved, and I see a calm spell before me, but how long it will last no one can tell. Probably I shall be returning to you in a week or so, a pauper as I left, but considerably richer in experience! Certainly Suzanne will not want a companion now. But she may go back with me, for I have an idea she is in love with that Ridgeway. She has such a tender look in her eyes whenever she speaks of him.

"How glad I shall he to see you two again! It seems like years since we parted. I speak French so well now that I am sure I shall be able to get a position in some school in New York that will pay me enough to keep me going, and Mary and I shall make to ourselves an old maid's paradise in the old studio!

"Au revoir, dears, with much love to you both, as ever, HELEN."

The next news received from Helen Mortimer was on Christmas morning. While Mary and Edith were busy arranging evergreens in the little parlor, a cablegram arrived containing these words:

"AVONDALE, ESSEX.

"Merry Christmas. Hope to see you soon. Drink to our meeting. Have written.

"HELEN and SUZANNE."

"It was sent from Lord Haldon's place!" exclaimed Mary. "She must be there."

"Of course. She said in her letter that he had asked her and Mrs. whatever her name is—Suzanne. I can't think of her as Suzanne, can you?"

"I can think of her by any nice name now," returned Mary, "though before I hated her; but there is no denying it, she has been a trump!"

"How lovely it will be to have Helen hack!" exclaimed Edith, dancing about and clapping her hands. "I can scarcely wait! We shall fix up that little room off yours, and she shall live here with us. Won't it be jolly? Oh, I wish George would hurry back! We must have our little hottle of champagne to-night to drink her health, if it breaks us!"

"The trouble is—" began Mary in her slow, reflective manner, but her cousin interrupted gaily:

"Oh, there is no trouble about it! The trouble is all past, and we shall be happy ever after. This is to be the sequel of her adventures!"

"But do you think Helen can possibly he satisfied with this dull existence, after all she has gone through?" asked Mary.

"Of course she can," replied the other confidently. "She will be glad to settle down, and have some peace of mind."

"That is all very well in theory," returned Mary, "but I doubt that it is possible. She has always been restless, and antagonistic to routine, and now she will probably be more so. I'll wager she will not he here two weeks before she wants to fly off again."

"Oh, don't always look on the worst side of things. Do you suppose she will ever want to risk such experiences again?"

"She may; it is her nature to rebel against tedium, and time soon takes the horror out of memories."

"Oh, well, don't let us think of what may be; it is enough to know she is coming hack."

"Who is coming back?" inquired a voice from the hall, and Edith sprang to the door.

"Oh, George," she exclaimed, "such good news. Helen is returning to us. We have just received a cable."

"Well, I have a letter for you here from her," returned George, handing her the missive. "The janitor just gave it to me. Now I suppose," he added with playful reproach, as she and Mary settled themselves on the sofa to read it, "you two will be absorbed for the rest of the day, and forget me, Christmas dinner and everything! There will be one thing to be thankful for in Helen's return, and that is that these voluminous letters will cease, and I shall have a chance to realize I have a wife."

"And be talked out of patience by her!" returned Edith laughingly. "But this is not long, George. Look, it is only eight pages! Sit down a moment, and we shall read it to you."

"No, thanks, I can't stand a girl's letters to her friends. I should rather have you give it to me abbreviated afterward, with some of the adjectives and exclamation marks expurgated! I'll be in my room, so when you have thoroughly digested and discussed the epistle, call me."

"Avondale, Essex," read Mary aloud, from the embossed heading of the letter, then proceeded with the written matter.

"DEAREST GIRLS:—

"I am hoping this will reach you on Christmas, but, although I have calculated as closely as possible, it will probably be delayed a day or perhaps more, at such a busy season. However, I shall be thinking of you, dears, and drinking joy to you both on the twenty-fifth, and if I can I shall send a word of greeting by cable, so I shall not be so far away from you at this happy time. For I am so sublimely happy, girls, that I cannot wait to tell you the news, and yet I suppose you will want to know just how it came about.

"Well, we came up here a week after I last wrote you, which, to my astonishment and shame, I have discovered was just three weeks ago yesterday. Never has time flown so swiftly! It is simply marvelous, and I have not had an hour free to write you. We have been in a whirl ever since we arrived. There were balls, dinners, sleighing parties and all sorts of festivity given at the different country seats in the vicinity, and it is such fun going all together in a great sleigh to a dinner four miles away, and coming back at midnight, when the country is so silent, the bells on the horses sound as though they would wake the dead.

"Mrs. Ponsonby—Guy's sister—is a very great friend of Suzanne; she is most charming, and has done everything to make me feel at home and happy. They all spoil me terribly, I'm afraid, as I am the youngest one in the house party. There is one other girl, and two awfully nice men, one of whom I know Mary would like immensely, and he was so interested in hearing about her and her work. He is an artist himself, in a small way, and seems to adore everything connected with painting.

"But I must come to the vital point, as I can't keep it any longer! I am engaged—this time for good or ill, to the man I really love and have loved since first we met! It was certainly fate that meeting on the ship and that strange re-uniting at the Grand Hotel! He cared for me from the very beginning, and knew it, but he thought I did not like him, and even when he saw me at the hotel, he had hesitated to speak, thinking I wished to avoid him. Just think how easy it is to have one's life go wrong! and yet it looks as if things are all pre-ordained, for see how my life has smoothed out from almost the blackest possible conditions to the brightest, and owing to no effort of mine.

"I was a little afraid, when the announcement of our engagement was made the morning after I had promised to marry him. I was afraid his sister might have ambitions for Guy, and want him to marry some socially prominent or wealthy girl; but instead, she welcomed me into the family most heartily, and said if she were to choose his wife, there was no one she could have so gladly selected, and a lot of other nice things! Suzanne was simply wild with delight when she heard of it; she has been such a dear to me.

"She got those necklaces out of pawn before we left London, and sent them to the Countess de Chateleux, whom she asked to send them by her butler to Lawson, and have him request a signed acknowledgment that they had been received by him. It took a great load of shame and worry from my mind to know they had been safely returned to that man, accompanied by a note from me explaining why I had been unable to send them earlier, for which I gave the reason, and cared nothing whether he believed it or not, so long as I could throw the things back at him. This and one other development have given me many a thrill of vengeful satisfaction.

"The other was this: About a week before we came to Avondale Mrs. Ponsonby received a letter from Edith Watson, whom she had met through Guy, and in it I was spoken of most unflatteringly, and the whole situation with Lawson, and my dismissal from Madame Durozzi's house, was given in most exaggerated and false colors.

"Fortunately they told me nothing of this letter before I had related everything to Guy and Suzanne, who told his sister the whole and correct version of the story, and they were both most sympathetic and indignant at the way I had been treated.

"Well, as soon as she heard of my engagement to her brother, what do you think Mrs. Ponsonby did? She sat down immediately and wrote Ethel Watson the news!

"She said she never took more pleasure in doing anything in her life than she did in that.

"Imagine how it must have stunned the superior Ethel! I can just see her face, growing so pale with chagrin, the freckles stand out yellow under her eyes and her lips drawn into an invisible line! How she will hate to think of me as Lady Haldon!

"Well, my dears, we are to be married in London on the twentieth of April. It is to be a big affair, and you three simply must come over for it. I should not be happy if you are not here. There are three months to prepare for it, so save up your pennies and ask George to take his vacation early this summer.

"If he can't possibly do this, he must let Edith come anyhow, and he can come for her later. Avondale will be full of guests while we are away on our honeymoon, and it will make me so happy to feel you all will be there to welcome me back, and we can have lovely times together. I know you two will come in spite of all odds, but I want George, too, so we may he all together, and no one pining for the other.

"With much love, and eagerness to see you, as ever, "HELEN."

[THE END]

THE OPENING CHAPTERS OF THE NEW SERIAL, "MILL OWNERS," BY GEORGIAN GRIER, WILL BE FOUND ON PAGE 16 OF THIS ISSUE

Lee's Farewell to His Men

[CONTINUED FROM PAGE 18]

and from the hills that lined the way came the sputter of musketry, telling that the enemy were ever nagging at their flanks, and that slowly, man by man, the Army of Northern Virginia was heing picked off.

And yet ever and again these poor, worn-out soldiers gave evidence of desperate valor and of determination not to die without giving an account of themselves. At every hill along the march companies would stop to form a line of battle and beat back their pursuers.

And now Sheridan changed his movements again, and attempted to cut Lee's line of retreat a second time. On the sixth of April, with rapidly moving cavalry he struck the Confederate line near Sailors Creek, a little stream which runs into the Appomattox. He fell upon General Pickett. General Ewell was sent to re-enforce the latter; but instead of accomplishing this, he himself was cut off, and captured with six thousand men, while Pickett's division was shattered.

That night with his remnant of an army Lee crossed the Appomattox at Farmville, setting fire to the hridges behind him, leaving a corps to hold the river. But they could stop the destruction of the Confederate army only a day. By the half-hurned bridges the Federals crossed. Lee and his officers began to see the hopelessness even of flight. On all sides they were hedged in. On the seventh of April, Grant sent a note to Lee suggesting surrender, and on the ninth a meeting was arranged hetween the commanders.

A perusal of the eight notes which passed between the Generals at this time is like looking at the heart of a great tragedy. The notes are simple, they are formal, hut one sees hetween the lines the terrible sorrow of Lee. To surrender, to acknowledge himself heaten and his cause lost must have wrung his heart; but, on the other hand, he had too much love for his men to subject them to further punishment.

In a room in the house of Wilmer McLean, Lee and Grant met, the conqueror and the conquered; but from the demeanor of the two an outsider could not have told which was which. There was neither exultation on the part of one nor vexation on the part of the other; it was a disagreeable duty, but the chief actors who participated were gentlemen. The meeting was quiet and businesslike, and the surrender was quickly signed.

Meantime the news spread through the Confederate lines, and when late in the afternoon Lee rode away from McLean's and back to his headquarters, his army felt that all was at an end. It was a relief that the long terror was over, and yet it was with a soh of sorrow that these men who had followed their commander through years of battles saw him come back to them with the shadow of defeat on his brow. They loved him simply and gratefully; they knew him for a noble and a great-hearted general whom Fate, rather than his own doings, had hrought to his present state. In silence his war-worn soldiers hroke ranks and gathered around him—to take his hand—to look into his face—to show him as best they could their heart's sympathy. They were a ragged crew—old men in faded gray uniforms, rough mountaineers in butternut, boys out to fight for their homes—but all were alike in the great throb of pity that was in their hearts for their leader. Tears came to Lee's eyes as he saw their devotion; but as he went from among them he could only say, simply, "Men, we have fought through the war together, and I have done the best I could for you." On the next day he issued the following formal farewell:

"HEADQUARTERS
"ARMY NORTHERN VIRGINIA.
"April 10, 1865.

"After four years of arduous service, marked by unsurpassed courage and fortitude, the Army of Northern Virginia has been compelled to yield to overwhelming numbers and resources.

"I need not tell the survivors of so many hard-fought battles who have remained steadfast till the last that I have consented to this result from no distrust of them; hut feeling that valor and devotion could accomplish nothing that could compensate for the loss that would have attended the continuation of the contest, I have determined to avoid the useless sacrifice of those whose past services have endeared them to their countrymen.

"By the terms of agreement, officers and men can return to their homes and remain there until exchanged.

"You will take with you the satisfaction that proceeds from the consciousness of duty faithfully performed; and I earnestly pray that a merciful God will extend to you his blessing and protection.

"With an unceasing admiration of your constancy and devotion to your country, and a grateful remembrance of your kind and generous consideration of myself, I bid you an affectionate farewell.

"R. E. LEE, General."

The Puzzler

CHARADE NO. 1

A Quaker lady had a pet,
A FIRST it was, hoth clean and sleek;
Oft in her lap she would it set,
Because it was so mild and meek.
And gently then she would converse
With it, and point its duties out:
"Thy foes and mine are getting worse,
I know not what thee art about.
And if thee WHOLE not any more
Than now thee dost I cannot keep
Thee longer, so now watch the store,
And mind thee dost not fall asleep.
My SECOND, which was full of flour,
Has ravaged heen by pilfering thieves;
Go, watch, lest they the rest devour,
For very much my heart it grieves."

CHARADE NO. 2

'Tis sweet to LAST, to sit and muse
Beside the deep blue sea,
Where wavelets sparkle merrily,
And sea birds whirl in glee.
My TOTAL love the leafy glade,
Or undulating lea;
But nothing me my FIRST delights,
As the boundless open sea.

STATES IN AMERICA CONCEALED

1. I paid a hodman to do it.
2. It was when Eva dashed away.
3. There are more gone than you think.
4. It exasperated him very much.
5. What architectural order is that? Oh! Ionic.
6. You will find I analyze correctly.
7. He was very large or giant like.
8. We shall be sheep washing to-night.
9. I met Emma in England last year.
10. Can we dismiss our inspector?
11. When heads are broken, tuck your sleeves up.
12. Signor Mario was very unlucky.

DECAPITATION

I am a word of six letters.
Behead me and I am not pleased.
Behead me again and I am a burden.
Strike off my third head and you did it yesterday.
While removal of my fourth letter gives you, with slight addition, a refreshing foreign leaf.

Answers to Puzzles in the March 25th Issue:

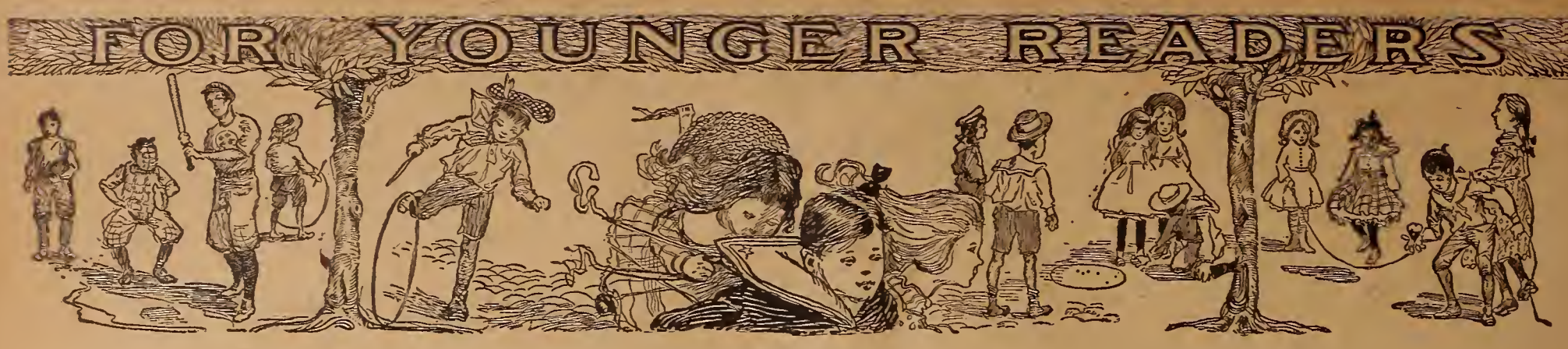
Transpositions, Alters, Laster, Salter, Slater.

Square Word No. 1

D E A T H
E X T R A
A T L A S
T R A I T
H A S T E

Square Word No. 2

C L E A R
L E A V E
E A V E S
A V E R T
R E S T S



Maxine's Lessons

"MAMA, I have the hardest lessons for to-morrow, and they must all be gotten to-night, for you know I have my music to practise in the morning before school!"

Mrs. Gordon glanced up from her sewing as her little daughter, just home from school, entered the room with several books in her hands. Maxine threw off her hat, sat down on the sofa, and proceeded to turn over the leaves of her history. Her mother looked at her several times, and noticed that she was tired and cross and in no mood to study; for were not her red lips all puckered and her usually smooth brow all drawn into a terrible frown?

"What is the trouble, Maxine?" Mrs. Gordon asked gently, after a few moments.

Maxine raised a surprised little face from her book, but as she caught the merry twinkle in the eyes that met hers, she felt ashamed, for she knew that her mother had been watching her.

"Well, mama, I just cannot remember a single thing about this lesson. It isn't interesting, like the one we had to-day, for that was about Washington and the brave deeds he accomplished. We have to write a composition, too, and I have not the least idea what subject to write about!"

"Your lessons are all right, dear," replied her mother, "but I fear that I cannot say the same of my little girl. Suppose you go out into the garden and gather a nice bouquet of flowers for papa's room."

"But my lessons, mama," began Maxine.

"Never mind them. They will keep until you return," said Mrs. Gordon.

Maxine left the room, and as soon as she entered the garden her lessons were forgotten. Everything seemed so bright and happy that it would have been impossible for her to feel cross. She was usually a bright and cheerful little girl, always ready to smile and speak a kind word to those in trouble. She was greatly loved by all who knew her, especially by her father, who called her his "Little Sunbeam."

It never took Maxine long to overcome a cross feeling, and when she returned to the house she felt as bright and cheerful as the little birds she had heard singing out in the garden.

"Now, Maxine," said her mother, as the little girl came back into the room, "take your history and read over your lesson very carefully, then come and tell me what you have read."

At the end of twenty-five minutes Maxine was by her mother's side, relating in her own language what she had just gone over.

"That is a very good lesson, dear," said Mrs. Gordon as Maxine concluded.

"Why, I do believe I know my history," laughed Maxine. "How easy it was, and I thought I never could learn it. It was really interesting."

"Now," said her mother, "take your pencil and paper, go to the west window, and write down what you see."

"What good will that do, mama?" asked Maxine.

"I want to see how close my little girl observes Nature," replied Mrs. Gordon.

"All right," smiled Maxine, as she tripped across the room to the window.

When she had finished writing she took the paper and gave it to her mother. And this is what Mrs. Gordon read:

A VIEW FROM MY WINDOW AT SUNSET

I am sitting on a low seat at the west window, where I can hear the birds sing. The sky is all bright with the sunset, and I can see so many different colors, and the longer I look, the prettier it grows. I do not believe that any one on earth has a paint box with such lovely colors in it.

I can see one cloud far above the rest that looks like a large ship sailing in the blue sea. Now, while I have been writing, the clouds have changed, both in color and form, but are as beautiful as before. In the southwest there are large white clouds which look like mountains covered with snow and tinged with the hues of pinks and violets.

The hills are tipped with light and look as if they were wearing golden crowns. On the side of one of the hills there are three horses eating grass. One horse is a dark bay, while the other two are black. In the pasture on this side of the hill is a small flock of sheep and lambs. One of the sheep has on a bell, for I can hear it very distinctly. The little lambs are running and frolicking around their mothers, and look as if they were playing hide and seek.

The yard is covered with beautiful green grass, and near the window is a rose bush full of large velvety blooms and buds. Everything that I can see, both far and near, seems to have one object in view, and that is to make this world bright and beautiful.

"That is a very good composition for my little girl," smiled Mrs. Gordon, as she handed back the paper.

"Composition!" exclaimed Maxine, in surprise.

"Yes, dear," replied her mother. "It was not very difficult, after all, was it?"

"You dear, darling mama," cried Maxine, as she threw her arms around her mother's neck and kissed her several times. "You always know how to make things easy. Now I have a whole hour to play before supper time."

VERA TURNER.

The Story of Robin Hood

ARE there any boys or girls among our young readers who do not know Robin Hood, the famous outlaw of Old England? If there are, and you have an ambition to be wiser, heartier, yes, and better "grown-ups," come right along and peep for a moment into splendid old Sherwood Forest. It is a dear, enchanted wonderland to most of you, I know. We will sit for a while together under the branches of a certain wide-spreading greenwood tree, and listen to its story. We will say over the names of a few of the "merry men," whose great trysting oak we are sitting beneath—this will be enough. I will wager some pretty penny it will not be long until you are going back again and again, searching the enchanted woodlands for each dear, familiar landmark, until, even like Robin Hood himself, perhaps, you will grow "to know and love every stick and stone and scarred tree in the dear old forest."

It sometimes happens that a single lucky or unlucky adventure falling into a man's day so alters his whole life that it is as though an entirely new being had been suddenly created. It is so with many of the enchanted princes in fairy tales. It is so with many heroes of legend and story. It was so with Robin Hood.

Here was a young prince, a court favorite, heir to titles and to vast estates. In the space of a single May day morning he had become a poacher, a murderer and an outlaw, with a price of three hundred pounds set upon his head. Robin Hood was a poacher, because he killed a king's deer ("at more than sixty rods") to prove to a taunting, insolent herdsman his skill with the long bow. He was a murderer, for he sent an arrow straight to the heart of the herdsman, who would have killed him for the deer's sake and the king's. He was an outlaw, for when it was suddenly borne in upon him that he had killed a man, with a keen regret, that stayed by him always, he slipped away into Sherwood Forest, where he lived for a great many years apart from other men save outlaws. It was the towering and overbearing sheriff of Nottingham who determined the strongest and swore the loudest to "bring this knave to justice." Not alone on account of the three hundred pounds, but because the forester who was killed was his kinsman.

Before Robin Hood had been in hiding a year, there had gathered about him in the forest a band of merry companions, most of whom, like himself, had in one way or another run afoul of the law and were escaping its penalties. There was John Little, his right-hand man. You could not match him in all England. He stood seven feet high, and was broader and stronger than any man in the band. For this reason, and because the merry woodsmen liked a joke, they tipped his name about and christened him "Little John." A lustier, stouter and truer man than Little John, Robin Hood never came across in all of his adventures. There was gay Will Scarlet, Robin's nephew, and dear, jolly Friar Tuck of the Fountaindale Abbey. But those of my boys and girls who want to know about this merry churchman after he changed his dull habit for a suit of Lincoln green, turn to your "Ivanhoe," and read of the night that King Richard, disguised as a black friar, spent with him and his dogs in his little cell in the forest. There was Alan-a-Dale, the minstrel of the company. They dubbed him the "sorrowful lover," until Robin Hood brought it about that he married his own true loved one, the dear Lady Ellen. This wedding in the sweet greenwood is one of the most delightful of the Robin Hood tales. There was Merry Midge, the miller's son, and Wat, the jolly tinker, from whom Robin stole the warrant for his own head at the Blue Boar Inn. There was David of Doncaster, and Arthur-a-Bland, and young Will Scathelock, a great favorite in the company, for he was always full of splendid tales and legends, and he told them well at nightfall, when they all gathered together beneath the famous greenwood tree.

There were these and a great many more besides; every man was a bold, stout yeoman, and a loyal subject to Robin Hood. The strongest law among these outlaws was loyalty to each other. Their foremost principle among other men was to take from wealthy barons, abbots, knights and landlords that which they had unjustly extorted from their wretched tenants in taxes and rents and wrongful fines. This they restored to the poor people, and they sent money and large portions of food to many poor families in the hungry winter time. So it was that the poor people throughout the kingdom came to praise Robin Hood and his merry men, and to sing songs and tell tales of their brave deeds among themselves, while the rich people grew more and more to hate and fear them.

When Richard of the Lion's Heart came to the throne he heard from his rich abbots and nobles many dreadful tales about these outlaws. Then the king determined to rid the country of them at once; but when he went about looking into the matter, other and very different tales came to him—tales of Robin Hood's bravery and deeds of lofty courage and mercy. Then the king determined to go in disguise and find out for himself what manner of men they were. It was ten score splendid men, the very flower of England's yeomanry, that he came upon that night in the forest. You must read this part of the tale for yourselves, it is so splendid! It is enough to tell you here that before the dawn King Richard had pardoned Robin Hood and taken him and Little John and Will Scarlet and Alan-a-Dale into his kingly service. The others he commanded to be recorded as his own Royal Rangers and law-abiding caretakers of the king's herds in Sherwood Forest.

Robin Hood was his loyal subject until, as you all know, King Richard died on the battle field in foreign lands. Then Robin Hood came back to England and to Sherwood. He determined to live the free life of the greenwood once more, and he called his men about him. But King John hated him, and sent troops against him.

The tale comes swiftly to an end. Robin Hood falls ill, and is betrayed by the Abbess of Kirklees Abbey. The old companions gather together once again, and bury their master in his beloved greenwood.

Photo by Will G. Helwig

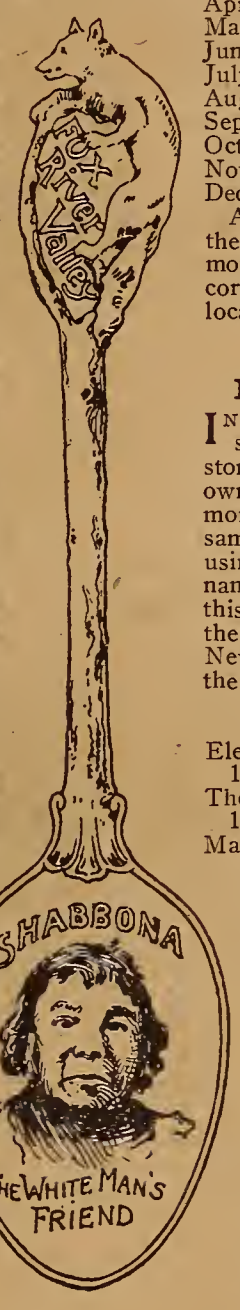
JIMMY DECIDES HE HAS ENOUGH

Of Curious Interest

Building Good Roads With Spoons

THE good-roads cause has never been furthered by a more novel method than that adopted by the Kane County, Illinois, Federation of Women's Clubs. A twenty-five-mile road is to be improved by the sale of silver spoons of unusual design.

Nearly one thousand of these spoons were sold during the recent holiday season. Each spoon brought two dollars cash. In the bowl is seen the head, a good likeness of old Chief Shabbona, who in pioneer days was the real Indian friend of the white settler and his family and for whom a fine monument has been erected. An Illinois town also bears his honored name. It is one of Shabbona's old trails that the women seek to improve, hence the use of his kindly face as such a prominent feature of the souvenir.



The stem of the spoon is made up of a representation of woods indigenous of the Fox Valley, and the form of a sharp-nosed, bushy-tailed creature adorns the end of the stem to typify the name of the river—Fox—along which the road that is to be improved is laid.

The women have been working on the scheme for some time. A year ago they interested the farmers along the route to the extent of securing their co-operation and agreement to improve the land of their farms abutting on the roadway by keeping the weeds cut down and the trash cleaned off.

The Fox River Road is one of the most beautiful and romantic in the Prairie State. It is proposed to make the driveway one of the most notable in the state, one especial effort being to preserve the features that lend a deal of legendary lore. The road is used for all purposes, the farmer making use of it for all hauling requirements in reaching the prosperous towns in which he markets the products of his fertile acres.

It is to-day one of the most attractive driving roads and automobile tracks of the valley.

Illinois. J. L. GRAFF.

◈

How Indians Reckoned Time

THE moon can consistently be called the Indian's calendar. He reckoned time by its changes, and long before the white man came to America the red man had a pretty clear idea of a month of time.

The moon goes through four changes in four weeks. From full moon around to full moon again is, therefore, nearly one month, or, as the Indians called it, one moon.

After all the English word "month" means moon, and is derived from that word. But the Indian named his months, or moons, from the things that most appealed to him—the weather, the plants, the hunt, etc.

Here are the names by which they knew them:

January.....The Cold Moon
February.....The Snow Moon
March.....The Green Moon
April.....The Moon of Plants
May.....The Moon of Flowers
June.....The Hot Moon
July.....The Moon of the Deer
August.....The Sturgeon Moon
September.....The Fruit Moon
October.....The Traveling Moon
November.....The Beaver Moon
December.....The Hunting Moon

All Indian tribes did not have the same name for the same month, however, as it varied according to the occupation or locality of each tribe.

ALONZO RICE.

◈

Economy on a Tombstone

IN A cemetery at Granby, Massachusetts, is a unique tombstone. Gad C. Preston, the owner, buried six wives, and as a monument to the memory of these same six used the one stone, using both sides to record the names, etc. The cut printed on this page showing both sides of the stone is reproduced from the New York "Sun." The front of the tombstone bears the following:

Erected to the Memory of
Electa Barton, died March 14, 1824, aged 26 years.
Theodocia Church, died April 2, 1840, aged 45 years.
Mary Wood, died September 26, 1843, aged 45 years.
Lucy W. Alden, died August 20, 1844, aged 40 years.
Olive L. Arnold, died September 13, 1848, aged 35 years.
All Wives of Gad C. Preston.
Ephraim A., son of Gad C. and Olive L. Preston, died July 25, 1847, aged 9 months.

On the Back of Tombstone:

Gad Clark Preston, died February 14, 1876, AE. 81.
Mary B. Dimick, died June 7, 1870, AE. 66 (a wife).
Clarissa Preston, died November 30, 1859, AE. 21.

◈

Illustrated contributions to this department are invited and if accepted will be paid for at our usual rates. Contributors should be sure to enclose return postage when submitting photographs or text matter.

THE BACK AND FRONT OF ONE TOMBSTONE RECORDS THE DEATH OF SIX WIVES AND THEIR CHILDREN

HONOR ROLL

OF

Farm and Fireside's Great Four-Pony Contest

The following contestants are already prize winners. They have each won **two** prizes by getting on the FARM AND FIRESIDE Honor Roll, and their names will be seen and read by nearly three million people. This Honor Roll is complete up to date of going to press April 1, 1907.

Josie Anderson, Ohio
Glynn Anderson, Okla.
Ruth Anthony, Va.
Holland B. Alexander, Tenn.
Arthur Adcock, Ohio
McKim Buckley, Pa.
Leonard M. Beachley, Md.
Ellis W. Burrows, Ohio
Robt. Bremer, Pa.
Harrison Burkett, Pa.
Florence M. Boyer, Pa.
E. W. Burruss, Ark.
Helen M. Beal, Ohio
Alice Brown, Pa.
Henry Blake, Mass.
Lucien W. Bingham, Vt.
Mary A. Buchanan, Va.
Rozella Bughtler, Ohio
Mary Bockes, Iowa
Mrs. F. C. Bradley, Wis.
Harvey J. Brackin, Del.
Wilmer Beck, Pa.
Albert Brant, N. Y.
Everette Biset, Mich.
Leonard Coutts, Canada
Paul Clay, Okla.
Thomas Crickman, Ill.
Marie Carothers, Ohio
Lottie L. Crawford, Neb.
Abbie Chambers, Ohio
Mildred Comins, Mass.
Margaret Carter, Mass.
Henry Clausen, Ind.
Archie R. Cook, N. Y.
Mrs. Laura Courter, Ill.
Foster Colgrove, Pa.
Mary E. Cahill, Ill.
Matilda Colston, Va.
Chas. Claus, N. H.
Zita M. Carroll, Mich.
Fay Keneth Cotauch, N. Y.
Essie Dillard, Ky.
H. T. Duncan, Pa.
Edna Davis, Ohio
Lou M. Duke, Tenn.
Lester M. Donaldson, Iowa.
Mrs. C. W. Downar, Ohio
Mrs. Snell Davis, Ohio
Thomas V. Downin, Md.
A. S. Dewitt, Pa.
Geo. Ericsson, Iowa
Lorena Ernst, Neb.
Mildred Eckenrode, S. Dak.
Donnie D. Euliss, N. Car.
Gladys Ferlen, Wis.
Leonard Foreman, Pa.
Grover C. Freeze, Ohio
Marie Finzel, Md.
John S. Gibbs, Ohio
Arthur B. Gill, Va.
Bernice Gilliland, Ohio
Grace Gindice, Mont.
Anna Gilbert, Cal.
J. E. R. Goodman, S. Car.
Rosa E. Gray, Neb.
Rhoda R. Green, Pa.
Arthur Gardner, Iowa
Mrs. I. T. Good, Va.
Mabel M. Hannum, Ohio
E. E. Harrison, Ky.
Williard Hipsher, Ohio
Chas. Holden, Ohio
Jesse Hecke, Ill.
Margaret Heavner, W. Va.
Hubert Hull, W. Va.
E. Page Harris, Ala.
Genevieve Haun, Wash.
Marjorie Hiberling, Pa.
Margaret Husted, Ind.
Jessie Hoover, Ohio
Geo. Harris, Mo.
Master Lewis P. Hassel, Pa.
Glenn Hoffman, Mich.
Mrs. W. S. Hart, Ala.
Laura E. Holt, N. Car.
Willie A. Hoogbruin, Mont.
Ethel A. Hathaway, Ohio.
Marie Hugues, Va.
Clifford Irving, Canada
Bernice Johnsou, Ohio
Irene Johnson, Ohio
Johnny L. Johnson, Mo.
Lonetta Jones, La.
Glynn Jordan, Colo.
Angie Johnson, Ohio
Howard Jones, Ohio
Mrs. B. E. Jefferies, Utab.
Florence James, Ill.
Mrs. Rosa Kannel, Ohio
Russel Kreiter, Ohio
Artie Klingensmith, Pa.
Levi Ray Kellar, Vt.
Leonard Knox, Tex.
W. A. Ludwig, Pa.
Harry A. Leeman, Ind.
Frank W. Lynn, Ohio
Julia M. Lyons, Mass.
Muriel J. Leonard, Wis.
Margaret Lawson, Ky.
Renel Lavanway, Mich.
Faunt S. Le Roy, Ind.
Georgie Leonard, Mich.
Glenn H. Long, Pa.
Eddie Michaels, Ohio
Randolph Metzler, Pa.
E. A. McNight, Ind.
Jay A. Melious. N. Y.
F. Ray McKenzie, Pa.
J. E. Murphy, R. I.
Wiley Martin, Ky.
Earl Martin, Iowa
Mary Martin, Mo.
Susie Meyer, Canada
Elizabeth Meacham, N. Mex.
Jno. B. Masloff, Wis.
Ruby Moose, N. Car.
Williard L. Neese, Ohio
Agnes Neuscheter, Ohio
Jesse W. Oren, Va.
Leonard Owings, S. Car.
Samuel H. Page, N. J.
Crissie Powers, Conn.
Helen Pressly, Pa.
Wm. T. Pearson, Va.
Edward F. Poss, Ohio
Waldo E. Pletcher, Ohio
Archie Parmely, Iowa
Eugene G. Ryan, Ky.
Myrtle Rogers, Tex.
Harold Roes, Me.
Hazel Ridlen, Mo.
Minnie M. Reehling, Ohio
Hazel Rea, Ohio
Stanley Roberts, Pa.
Mabel Rowland, Mass.
Raymond P. Ream, Pa.
Margaret Reehling, Ohio
C. L. Rowland, Va.
Charlotte Rogers, Pa.
Harold R. Savage, R. I.
Laura B. Snyder, Pa.
Oliver L. Smith, Ohio
Henry Schladenski, Wis.
Freddie Scherbacher, Neb.
Helen Siegfried, Ohio
Ralph Smith, Tex.
Howard Shout, Ohio
Mrs. P. V. Savage, Ohio
Ray Sherrill, Neb.
Joy Smock, Iowa
Mabel Spangler, Ill.
Will L. Snedeker, W. Va.
Omar G. Shaffer, Pa.
Paul Spencer, Iowa
Edgar Sanders, W. Va.
Julia Spautin, Ky.
Ruth Sarver, Pa.
Hannah Scott, Ohio
Martin Sander, Ohio
Frank Streipert, N. Y.
Lela Shambaugh, Ga.
Rudolph Thesen, Ill.
Lowell Troyer, Obio
S. S. Turner, Ill.
Marie Temple, S. Car.
Olney Thompson, Ohio
Harold B. Thompson, N. Y.
Roy W. Utz, Mo.
Helen Van Lehu, Ohio
Julia Violet, Ohio
Chas. E. Wilbee, Mich.
Donald E. Weaver, Ohio
Maud Ward, Wis.
Ida Wegener, Pa.
Fred White, Pa.
Ralph Bonnell Walker, Ind.
Mrs. W. L. Wise, Pa.
Ethel Wood, N. Y.
Ethel Woods, N. Car.
Edna Walker, Ohio
Loree Winslow, Va.
Pearl Wickwire, Iowa
Phebe Woodson, Va.
Neath Wilson, Ohio
Wm. Arthur Woods, Neb.
Lucile Welch, Kan.
Ralph Boswell Walters, Ind.
Dora Young, Ind.
Mabel Young, Cal.

We Will Put Your Name on This Honor Roll

if you will take our advice. Just send ten subscriptions to FARM AND FIRESIDE to count in the Great Four-Pony Contest, and in addition to giving you a prize we will tell you all about the Honor Roll—what it means and how to get your name on it. It means a great deal, for the Honor Roll puts you right on the road to the ponies.

Get One Subscription a Day

and before you know it you will be on the Honor Roll. If you can get more than one subscription a day it will be so much better. And then when you get on the Honor Roll it is clear sailing for the pony team. Now make up your mind to-day that you will be on the Honor Roll before May 1st if you are not already on. Just think what it means to win **two** prizes and have your name seen and honored by 3,000,000 people! That's what the Honor Roll will do for you.

"GET IN THE SADDLE!"

The Light at Home

BY ALONZO RICE

There's a house upon the hillside where my memory ever turns
When the night across this foreign landscape falls;
Through its little latticed window I can see the light that burns.
And I always hear the cricket as it calls!
And no matter where I wander, on the sea or on the land.
When the lamps are lit in all the homes, I know
There is one placed in my window by a mother's loving hand,
And I read love's deathless message in its glow!

On a golden summer evening, when across the fields I strayed
On an errand up or down the country side,
Or when in the darkened dingle after night I was delayed,
She would trim the light to be my homeward guide.
And whatever fancy gathers when the evening star is high,
And my darkened casement opens on the foam,
Above the moonlit splendor I can see with loving eye
The light that mother trims for me at home!

◈

Pillow Cover With Ribbon Decoration

THIS looks scarcely like a pillow sham. It is gay enough for a cushion cover. It may be made up for either purpose, although it illustrates the extreme of richness demanded in smart shams. The fabric is batiste and the lace is a narrow filet. A novel feature is the waved line in which the insertion is put on. If you think of copying the design, it will be well to sketch the curves on the material before stitching on the lace. The insides of the curves may be shaped by running little gathering threads through the lace at regular intervals and pulling them together. Unless you are a very

LACE DECORATED SHAM WITH FLOUNCE HEADED BY LACE BEADING, THROUGH WHICH RIBBON IS LOOSELY DRAWN AND CAUGHT UP TO FORM ROSETTE AT ONE CORNER

expert needlewoman you are not likely to succeed by gathering the insertion as you go along. A lace beading is run around the edge, and hides the line where the flounce and cover are joined. The ribbon is drawn through to form little puffs, and terminates in a rosette at one corner.

◈

The Mushroom

NEVER use a mushroom which is old, black or wilted underneath, as it is apt to be full of worms. The gills, however, need not be pink to be perfectly good and fresh. If in doubt, break the mushroom, and if it is porous between the outer skin and the gills, throw away at once.

In cooking mushrooms I find the whole secret lics in the amount of butter used. Be lavish with butter, seasoning with salt and pepper to taste.

To broil the largest flat kind, first cook the smooth outside, then slightly toast the inside. While still hot season with salt, pepper and a generous allowance of butter.

MUSHROOM SAUTE—Melt two thirds of a cupful of butter, add one half pound of mushrooms, and cook briskly until tender. Serve on toast. The surplus butter with the water from the mushrooms should furnish a delicious gravy.

MUSHROOMS WITH TOMATO AND ONION—Melt two thirds of a cupful of butter and brown one half of a medium-sized onion in it; remove the onion, and add one half pound of mushrooms, dusted with two tablespoonfuls of flour. Cover with a small tomato sliced very thin, or one half of a cupful of canned tomato may be used. Add two thirds of a cupful of water, and simmer, stirring gently so as

The Housewife

not to break the mushrooms. Serve when the tomatoes have disappeared in gravy and the mushrooms are tender.

CREAM OF MUSHROOM SOUP—Cut one and one half cupfuls of mushrooms in fine pieces. Cook in two tablespoonfuls of melted butter until tender, but not brown; remove mushrooms and brown one tablespoonful of flour in the butter. Meanwhile cook a fresh lot—one and one half cupfuls of diced mushrooms in one pint of milk and one half pint of cream. Cook in a double boiler until the cream has a mushroom flavor, then remove mushrooms and add the hot milk to the cooked flour, mixing the two gradually. Return to the double boiler, add all the mushrooms, and cook until of good consistency, then strain and serve hot.

MUSHROOMS WITH STEAK—Dice one fourth of a pound of mushrooms, and cook in one half of a cupful of butter until tender; remove mushrooms, and brown two small slices of onion in the butter; remove onion, and add one tablespoonful of lemon juice. Cook two tablespoonfuls of flour in the butter until smooth and free of lumps. Add two cupfuls of hot beef stock gradually, and stir until smooth, then add the cooked mushrooms with one fourth of a pound of additional fresh uncooked ones. Simmer until the mushrooms are tender, and serve with a steak. —Maude Shute Fry in Good Housekeeping.

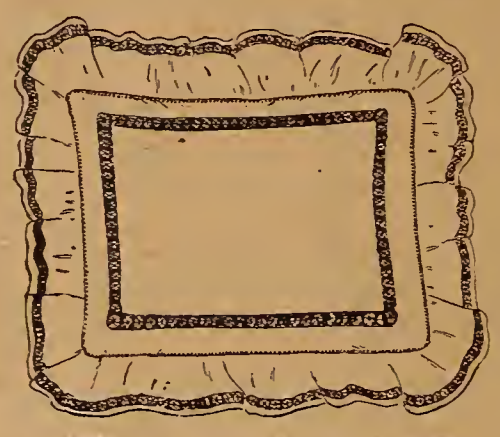
◈

The Memorandum Habit

THERE is a story of a proud father who boasted of his exemplary son that "he had not a habit, not a single habit;" meaning, of course, that he had no *bad* habits. So much is the word habit linked with habits of the wrong sort that we seem to forget what a valuable possession a good habit really is.

The practise of doing the right thing at the right time ought to grow into a habit. And though but a minor one, the habit of "when found making a note" of it is truly a useful one. Very few persons have a memory which can be absolutely relied upon to keep safely all dates, expenditures and the similar matters which it may be necessary at some future time to know, and the habit of making a memorandum promptly secures one from innumerable errors. So often matters of importance hinge on a fact to be accurately determined, and no one can do more than guess at it. A diary is too much trouble for most persons, but a blank book, with pencil attached, carried in the pocket or hung in a convenient place will easily contain the dates and other matters that should be recorded. There is a diary published with space for entries of three years on the one page,

FLOUNCED PILLOW WITH HONITON LACE, FLORAL MEDALLIONS AND ROW OF HEMSTITCHING



A PRETTY PILLOW SHAM OF LINEN WITH DRAWN-THREAD WORK IN SPIDER PATTERN

which allows a comparison of the events of a certain date in each year. Such a comparison would often be suggestive and helpful. In farming, one would note from it if the plowing were done earlier or later than the preceding year; if the crops had been heavier or not; the comparative expenditures and other matters with reference to the daily work. Such a journal could be easily prepared from any blank book, and the expense and trouble would be but trifling

The housewife, as well as the farmer himself, needs the memorandum habit. With blank book and pencil hung in the kitchen she can make a note of the supplies needed as soon as she discovers they are low, so that when the time comes to send to town the list is complete, and nothing need be forgotten. She, too, will find it well to note expenditures, and know where the money goes, and whether she gets its full value. If the book is at hand, the record of the poultry may be kept, and the cost and receipts show if the hens are profitable, and what the butter and milk are bringing. Get the memorandum habit.

AMELIA H. BOTSFORD.

◈

Cover of Batiste and Honiton Lace

HONITON or a good imitation of it may be used effectively in making the pillow cover illustrated. The floral medallions for the corners are stitched flat to the batiste foundation; the fabric is then cut away underneath and the raw edges secured so that they will not ravel. A band of insertion is set outside the medallions, it being put on in the same way that they were. The edge of the cover is finished with a row of hemstitching. The deep flounce is of alternate rows of batiste and lace.

Photo by J. A. Yealey

AN INVITING PATCH OF MUSHROOMS

The Joys of Cuddle Time

As the evening shadows gather,
Then 'tis cuddle time, I know,
When my baby, dressed for Dreamland
Comes a-romping to me so;
Comes and begs of me to hold him
On my knees and "rock-a-bye,"
As the purpling sun sinks lower
In the gleaming western sky.

And he cuddles to me nearer,
As the firelight softly glows,
And across the dusky portals
Ghostly, flickering shadows throws;
And two dimpled arms about me
Are clasped tighter for a kiss—
Ah, was ever richer necklace
Placed about one's neck than this?

Soon the drooping, drooping lashes
Cover up two eyes of brown,
And the tousled head so golden
On my breast sinks lower down.
Ah, the sweetness of the pleasure,
Making life one golden rhyme,
With a dimpled babe to fondle
When it comes to cuddle time!

—Answers.

◈

Pillow Cover in Drawnwork

WERE drawn-thread work less tedious it would be more generally used for pillow or cushion covers. The simple spider pattern illustrated makes a pretty decoration for a white linen pillow sham, a wide band being worked around the cover and another around the edge of the flounce. A finishing touch is given by the row of hemstitching that outlines the edge. Made in white linen, lawn or batiste, this makes a handsome pillow sham or cover for the summer hammock cushion. If colors are used, and a heavy quality of linen, very handsome effects may be achieved by working the center of the webs with silk or floss of a contrasting color.

◈

Embroidered Pillow Cover

INTERLACED sprays tied with knots of ribbon form a rich design for a pillow cover. Any flower or leaf may be adopted for the sprays, which any fair draughtsman can sketch on a slip of paper, from

PILLOW-COVER DESIGN WITH HEMSTITCHED FLOUNCE AND CENTER DECORATED WITH SPRAYS OF EMBROIDERY ENCLOSED IN HEMSTITCHED SQUARE

which, with the aid of carbon paper, a spray may be transferred to each corner of the lawn or linen that is to form the center of the pillow cover. The band of hemstitching or some simple pattern in drawnwork should be worked around before the spray is put on. Long-and-short stitch is used for embroidering the leaves or flowers, while stems and ribbons are worked in solid embroidery. The cushion is finished with a hemstitched flounce. Such a cover is suitable for the dressing up of the best bed, or, made in colored linen, it forms a handsome cushion cover for a couch.

◈

Cake Filling

BOIL three cupfuls of powdered sugar and three fourths of a cupful of water until it spins a thread. Stir the boiling sirup into four whole eggs beaten together. Mix with two cupfuls of chopped raisins and two cupfuls of chopped blanched almonds. Flavor with vanilla and spread between the layers. Finally make a white frosting and spread over the whole cake. Half of this recipe makes enough for a fair-sized cake.

◈

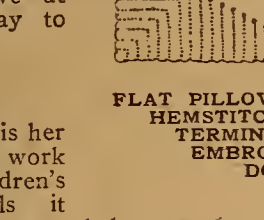
Have you a little girl growing up to be a young lady? If you have, it is your duty, if you can afford it, to have a piano in the house. The right kind of knowledge and appreciation of music is a necessary mark of refinement in the young women of the present day. Not every father can afford a $750 piano for his daughter, but with the help of FARM AND FIRESIDE your daughter can obtain one without one cent of expense on your part. If your daughter is not already trying for this piano, she should start at once.

See to the Kitchen

JUST so long as people live principally upon cooked food, just so long will cooking and the kitchen be, as they now are, exceedingly important features of every household, impossible to ignore or overlook with impunity.

Many a good cause has been lost for the time being—and many a bright future has been darkened—by some one's indigestion, says "McCall's Magazine." Indigestion is at the root of almost as many of humanity's troubles as selfishness itself. But of course ignorance is at the root of them all. Whenever people know better they avoid and escape the woes that come through ignorance.

Without a good digestion health is impossible, and lack of health is misery. Poor cooking produces about as much indigestion as bad temper. In fact, it is a case of action and reaction. Indigestion, low spirits, bad temper; bad temper, low spirits, indigestion, and so on interminably. Bad cooking, bad temper, low spirits, all belong together. They propagate each other. Since poorly cooked food produces indigestion, poor cooking should be abolished. It can be abolished by all those who set about it by paying attention to having the very best possible cooking for each meal, however simple it may be.



HOME-MADE SPOOL HOLDER

◈

Chocolate Custards

IN PREPARING chocolate custards allow one egg, one scant tablespoonful of sugar, a pinch of salt and one tablespoonful of grated chocolate to each cupful of milk. Melt the chocolate over hot water, and add gradually the hot milk. Pour this over the beaten egg and sugar. To one quart allow one teaspoonful of vanilla. Pour into baking cups, stand in a pan of hot water, and bake in a moderate oven until set in the center. Test by inserting the blade of a knife; when it comes out clean the custards are done. Remove at once and set away to chill.

◈

The Baby

THE mother who is her own maid of all work as well as children's nurse often finds it almost impossible to go to baby as soon as he awakens, and when he is fretful from teething or other causes he is apt to cry if left too long. My plan for preventing this is to suspend some of his toys where they will catch his eye upon awakening, and thus amuse him long enough to allow me to finish the cake I may be frosting, finish ironing a garment that might spoil by drying if left half done, or whatever the particular work may be that is on hand.

For this purpose procure two yards of common garter elastic. Sew a loop in each end that can be slipped over opposite corners of the bedposts if they are high enough, or strung from a hook, chair or any piece of furniture to bring the playthings at the right height and in front of baby. If his rubber ring is hung in the center just within reach, he will pull on it, the elastic band will give and set a rattle jingling or a bright ball dancing that are hung farther away and out of his reach. A small branch with leaves tied to the elastic always proves very fascinating. His pulling on his rubber ring sets the leaves in motion, and he will listen to the rustle and watch the leaves dancing for almost any length of time.

Of course one must always be careful to have the branch a safe distance away, so that he will by no possibility get hold of the leaves and eat them. It is always best to have all of the toys that are suspended thus out of his reach except the rubber ring. No harm can come from his biting on this, and it allows him to pull on the strap and set the other things in motion. E. E. S.

◈

Home-Made Spool Holder

THE sketch shows a spool holder which may be fashioned by the veriest amateur in fancy-work making. The upper and lower sections of the spool holder are nothing more than the cover and the bottom of a round wooden salt box. Any other thin round pieces of wood or thick cardboard will do just as well. The pieces are encased in cretonne or plain linen, and bound with ribbon, braid or tape, with a line of catstitching along the border. Before the lower section is covered, long wire nails should be driven through the wood so that the heads are flat with its surface, and the shafts stand up on the opposite side at regular intervals as supports, on which the spools may be impaled. When the spools are in place the top is tied on by means of a ribbon fixed to the lower section as shown in the picture. Add a round pincushion to the top and you have an article for the work table which is both useful and ornamental.

◈

Hanging Flower Holder

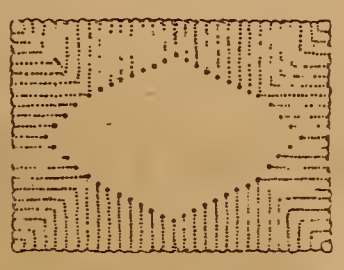
A WALL POCKET in which cut or potted flowers may be kept is a novelty which appeals to those who have been so unfortunate as to upset the ordinary table or mantel vase. The flat board which forms the back is covered with dark green art ticking. The front of the pocket has a pasteboard frame covered with the green. This is laid over some suitable picture and then attached to the back, as in the case of the ordinary wall pocket. A narrow shelf is tacked to the back, inside the pocket, and it is on this that the vases and flower pots stand. A couple of metal hangers are attached to the back, and these form the real supports when it is attached to the wall, although a ribbon band is added for appearance's sake.

◈

You Should Eat Fruit

IF PEOPLE ate more fruit they would take less medicine and have better health. There is an old saying that fruit is golden in the morning and leaden at night. As a matter of fact, it may be gold at both times, but then it should be eaten on an empty stomach and not as a dessert, when the appetite is satisfied and digestion is already sufficiently taxed.

Fruit taken in the morning before the fast of the night has been broken is very refreshing, and it serves as a stimulus to the digestive organs. A ripe apple or an orange may be taken at this time with good effect. Fruit to be really valuable as an article of diet should be ripe, sound and in every way of good quality, and, if possible, it should be eaten raw.



FLAT PILLOW SHAM WITH HEMSTITCHED LINES TERMINATING IN EMBROIDERED DOTS

Instead of eating a great deal of meat for breakfast, most people would do far better if they took some grapes, pears or apples—fresh fruit as long as it is to be had, and after that they can fall back on stewed prunes, figs, etc. If only fruit of some sort formed an important item in their breakfast, women would generally feel brighter and stronger, and would have far better complexions than is the rule at present.—McCall's Magazine.

◈

Pattern in Hemstitching

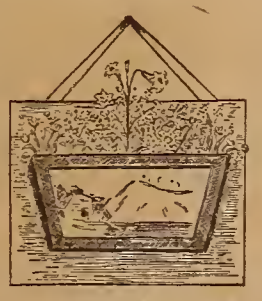
PLAIN hemstitching, as we are apt to call it, may be utilized in the formation of designs that are anything but plain. The pillow cover herewith illustrated is of white linen, and while intended for a bed, is equally suitable for a couch cushion cover. The object is to run the lines of hemstitching out so that they may form some regular figure, such as this four-sided one. The ends of the lines of hemstitching are tipped by embroidered dots.

◈

Spice Cake

TAKE one and one half cupfuls of brown sugar, one half cupful of butter, one cupful of sour cream or milk, two and one half cupfuls of flour, or enough to make stiff, two cupfuls of chopped raisins, one small nutmeg, ground, one teaspoonful of cloves, one teaspoonful of cinnamon, one half teaspoonful of alspice, one teaspoonful of soda dissolved in one tablespoonful of hot water; put in cream or milk, one third of a pound of citron, and three eggs, beaten separately. I have tested this recipe, and find it excellent.

ELIZABETH M. STRAWN.



HANGING FLOWER HOLDER

◈

Did it ever occur to you that the farmer's wife works a lot harder than the farmer? When his work is over after supper, and he sits down in his comfortable chair for an evening of reading, the wife still has her dishes to do up. When the dishes are done she has her mending. Truly, the farmer's wife's work is never done. Take care of *your* wife's health and comfort.

Spring and Summer Styles

By Grace Margaret Gould

No. 915—Waist with Bretelles

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medium size, or 36 inch bust, three yards of twenty-two-inch material, or two yards of thirty-six-inch material, with one and one eighth yards of velvet and one and three eighths yards of lace or embroidery for trimming

No. 916—Skirt with Empire Back

Pattern cut for 22, 24, 26 and 28 inch waist measures. Length of skirt in front, 42 inches. Quantity af material required for medium size, or 26 inch waist, thirteen yards of twenty-two-inch material, or eleven yards of thirty-six-inch material

No. 917—Waist with Draped Vest

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medium size, or 36 inch bust, three yards of twenty-two-inch material, or two yards of thirty-six-inch material, with five eighths of a yard of all-over lace or embroidery, and two and one fourth yards of insertion for trimming

No. 918—Skirt with Tucked Flounce

Pattern cut for 22, 24, 26 and 28 inch waist measures. Length of skirt in front, 41 inches. Quantity of material required for medium size, or 26 inch waist, thirteen yards of twenty-two-inch material, or eleven yards of thirty-six-inch material

No. 919—Poneto Coat

Pattern cut for 34, 36, 38 and 40 inch bust measures. Quantity of material required for medium size, or 36 inch bust, two and seven eighths yards of thirty-six-inch material, or two and one fourth yards of forty-four-inch material, with three eighths of a yard of silk or velvet for trimming

No. 920—Skirt with Plaited Panels

Pattern cut for 24, 26, 28 and 30 inch waist measures. Length of skirt in front, 39 inches. Quantity of material required for medium size, or 26 inch waist, nine and one half yards of thirty-six-inch material, or seven and one half yards of forty-four-inch material

THAT the jumper waist will keep right on being fashionable is one of the certainties of the spring and summer modes. In so great a variety is this useful waist shown this spring that it seems like something new and novel.

The spring jumper waists are made in practically every sort of material, from the most inexpensive cotton fabric up to Irish lace and gorgeous flowered silk. The jumpers are tucked, plaited and plain. Some have sleeves and some haven't.

In planning a jumper waist it is best to have it of the same material as the skirt, and let the guimpe be of contrasting material. The style of the guimpe will indicate the time when the gown may be worn. The three-piece costume, consisting of guimpe, jumper and skirt, is one of the most adaptable gowns a woman or girl can possibly own, as by varying the guimpe it can be worn on all sorts of occasions. To make a jumper costume really live up to its reputation it should have at least three or four different guimpes—one of plain linen for morning wear, a lingerie or silk guimpe for afternoon, and one or two of net or all-over lace for dress occasions.

An attractive jumper waist in which a vest is cleverly simulated is shown in the illustration on this page. The pattern also includes a guimpe with elbow sleeves. This pattern, No. 907, Vest Jumper with Guimpe, may be ordered from the Pattern Department, The Crowell Publishing Company, 11 East 24th Street, New York City. Price ten cents.

Illustrations on this page show the most economical way of placing the pieces of the jumper pattern on material thirty-six inches wide; also how to cut the guimpe out of all-over embroidery twenty-seven inches wide. It will be noticed that the all-over embroidery is not sufficiently wide to make the fronts. They must be pieced below the waistline, and the picture indicates the location where the piecing is needed.

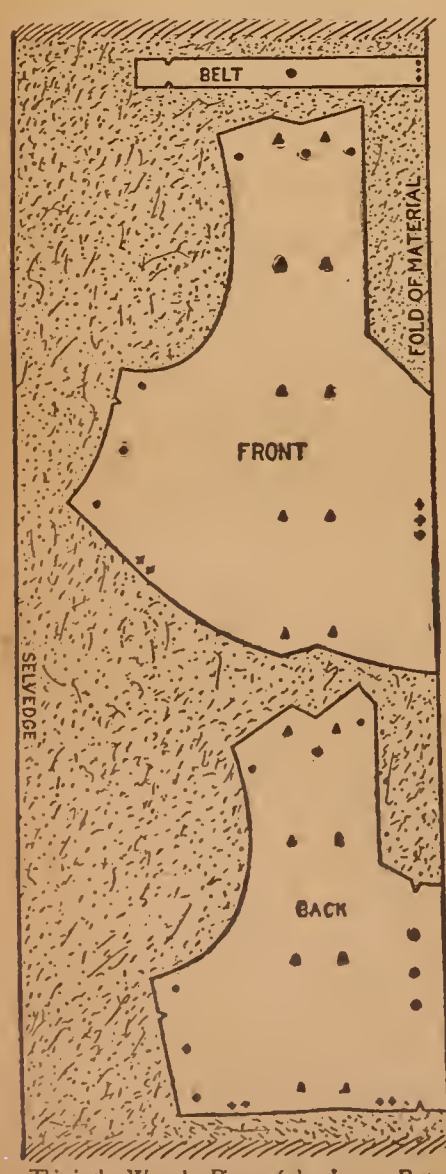
In placing the pieces of the pattern on the material, smooth them out carefully and lay the edges marked by triple crosses on a lengthwise fold of the material. Place the other parts of pattern with the line of large round perforations in each lengthwise of the goods.

For the guimpe, cut a belt the same size as the jumper belt, of lining or some firm material.

TO MAKE THE JUMPER: Join the under-arm seams as notched. Form the plaits back and front by bringing the corresponding lines of triangle perforations together. Baste and press flat, then trim the plaits with buttons and loops. If this style of trimming is not desired, the plaits may be stitched and edged with braid or piped with contrasting material to emphasize the vest effect. Join the shoulder seams, being careful to bring the edges of the plaits together on the shoulders. Gather the jumper at lower edge between double crosses. Join the belt to the lower edge of the jumper. Bring the center backs and fronts of jumper and belt together, and bring the large round perforations in the belt to the under-arm seams. Turn hems on backs of jumper and belt by notches, and fasten invisibly. Bind the neck edges and large armseyes with contrasting material.

The lace guimpe pictured here shows how the garment looks without the jumper.

TO MAKE THE GUIMPE: Join the pieces by corresponding notches. Gather the waistline between double perforations. Arrange the belt on the inside of the guimpe at waistline, which is indicated by square perforations. Match the centers of guimpe and belt back and front, and bring the large round perforations in belt to the under-arm seams. It is well to try on a waist in this state of completion and ascertain if the fulness at the waist is adjusted to suit the individual figure. Sometimes it is necessary to draw the gathers closer to the center back and front, making the under-arm portions of the guimpe plainer. Join the collar to neck as notched. Turn hems on collar, backs of guimpe and belt by notches, and fasten invisibly.



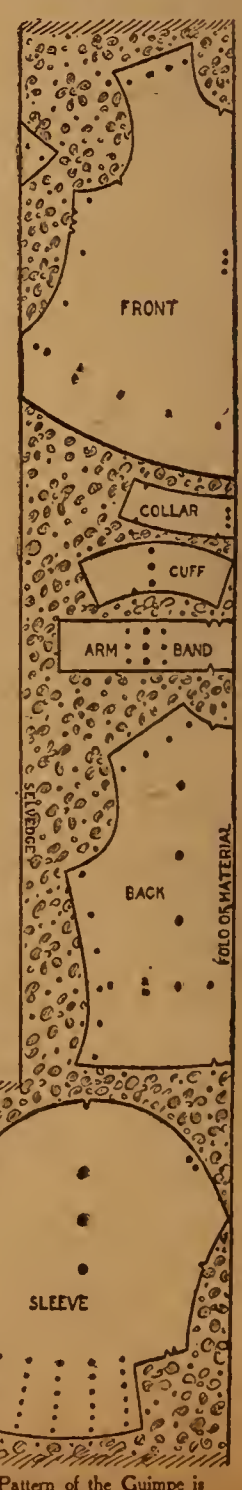
This is the Way the Pieces of the Jumper Pattern Are Placed on the Material

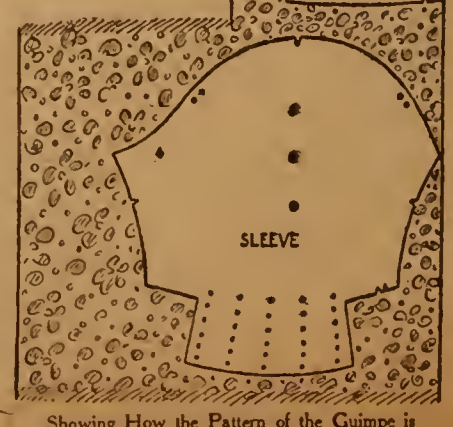
No. 907—Vest Jumper with Guimpe

Pattern cut for 34, 36, 38 and 40 inch bust measures. Quantity of material required for medium size, or 36 inch bust, one and three fourths yards of twenty-two-inch material, or one and one fourth yards of thirty-six-inch material, with three yards of all-over lace for the guimpe

Lace Guimpe

The Pattern for This Guimpe is Included in Pattern No. 907





Showing How the Pattern of the Guimpe is Laid on the Material

PATTERNS

The price of each pattern is ten cents. Order by number, giving size required. We will send our handsomely illustrated spring and summer catalogue FREE upon request.

Sunday Reading

If I Can Live

If I can live
To make some pale face brighter, and to give
A second luster to some tear-dimmed eye,
Or e'en impart
One throb of comfort to an aching heart,
Or cheer some wayworn soul in passing by;

If I can lend
A strong hand to the fallen, or defend
The right against a single envious strain,
My life, though bare
Perhaps of much that seemeth dear and fair
To us on earth, will not have been in vain.

The purest joy,
Most near to heaven, far from earth's alloy,
Is bidding clouds give way to sun and shine,
And 'twill be well
If on that day of days the angels tell
Of me: "She did her best for one of Thine."

—Helen Hunt Jackson.

◈

Death of a Famous American Writer

BY J. L. HARBOUR

THE death of Thomas Bailey Aldrich at his home in Boston, on March 19th last, removes from that city, once the home of so many pre-eminent poets, the only poet left of world-wide reputation and one worthy to be ranked with Longfellow and Whittier. It removes from the world of literature one of its finest writers of prose and an author some of whose short stories have been equaled by few. The passing of Mr. Aldrich calls to mind one of his famous poems, which has a peculiar significance now that the day and hour of his death have come and gone. The poem, "An Untimely Thought," is as follows:

I wonder what day of the week—
I wonder what day of the year—
Will it be midnight, or morning,
And who will bend over my bier?

What a hideous fancy to come
As I wait at the foot of the stair,
While Lilian gives the last touch
To her robe, or the rose in her hair.

Do I like your new dress—pompadour?
And do I like you? On my life
You are eighteen, and not a day more,
And have not been six years my wife.

Those two rosy boys in the crib
Upstairs are not ours, to be sure!
You are just a sweet bride in her bloom—
All sunshine, and snowy, and pure.

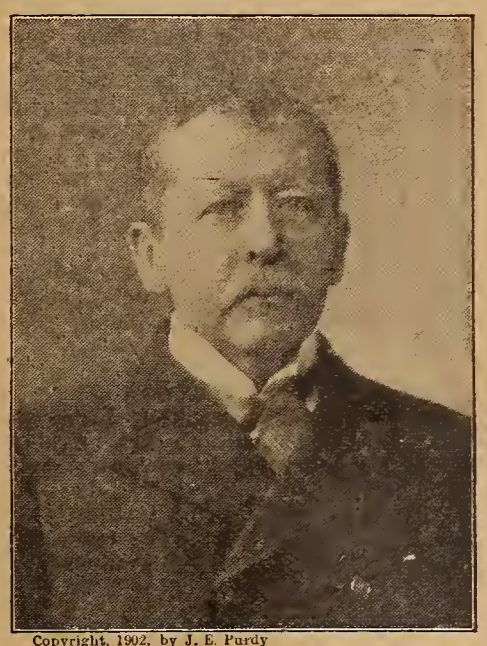
As the carriage rolls down the dark street
The little wife laughs and makes cheer—
But—I wonder what day of the week,
I wonder what month of the year.

The "two rosy boys in the crib" referred to in the poem were Mr. Aldrich's twin sons—his only children—and the death of one of them three years ago was a great sorrow to Mr. Aldrich, of whom his remaining son says that he was "The dearest father, the sunniest nature and the closest friend that ever man knew. I have heard him termed again and again 'that eternal boy.' It seems to me, looking through the years of my childhood, that there never was a time when my father was not at hand just when I wanted him."

Some of us who have been men for a good many years remember with what keen delight we read the "Story of a Bad Boy," a story that was in reality a very faithful account of the boyhood of Mr. Aldrich in the fine old town of Portsmouth "down by the sea," as he often called it. Portsmouth, which is the Rivermouth of the "Story of a Bad Boy," was the birthplace of Mr. Aldrich. He saw the light of day for the first time in the old town on the eleventh of November in the year 1836, but seeing him as the writer saw him in his own study one day last January one could hardly think it possible that threescore and ten years were back of him in his journey down the years. His short but robust frame seemed full of youthful vigor and his step was as light as that of a boy.

His home on Beacon Hill in Boston was a veritable treasure house of literary possessions. The desk at which he sat in his great, high study was once the desk of Charles Sumner, and in all parts of the house are rare things that Mr. Aldrich had found in his two trips around the world. There are gems from Arabia, and Moorish tilings from the walls of the Alhambra, and curious things from Buddhist temples. China and Japan and all the islands of the sea are represented, and in every room in the house one may find rare books with the autographs of the authors in many of them. Indeed, the Aldrich collection of autographs is one of the most interesting, if not one of the rarest, in Boston. Mr. Aldrich was for ten years editor of the "Atlantic Monthly" in the days when the typewriter was unknown to authors, and he was wise enough to carefully preserve the manuscripts of many of his contributors. He has in the most beautifully bound volumes whole manuscripts in the handwriting of Longfellow, Dickens, Thackery, Lowell, Holmes and famous writers contemporary with them. Then there are manuscripts of the most famous English writers. One of the gifts he received on his seventieth birthday was a beautiful silver flask presented to him by Miss Alice Longfellow, the flask having once belonged to her father, Henry W. Longfellow, who was for years one of the closest friends of Mr. Aldrich.

Mr. Aldrich was one of the most polished of our American writers. Few writers gave such painstaking care to their work. Some one once said of him that his pen was "diamond tipped" at times. Some of his poems are not surpassed by those of any other American writer, and in recent years editors were



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THE LATE THOMAS BAILEY ALDRICH

very glad to pay him a thousand dollars each for his short stories. He was a man of wealth, and owned two summer homes in addition to his town house in Boston. He had a reputation for exclusiveness that did not arise from any lack of friendliness toward others, but from a liking for his study and his work. His home life was one of great peace and happiness, his affection for his wife being so great that in forty-one years of married life he never allowed himself to be separated from her but once, and that was for but two weeks. He used to say that those weeks were "two weeks too many."

Few of our present-day writers can write with the elegance of diction that always characterized the work of Mr. Aldrich. Here are two brief verses written by Mr. Aldrich that Mark Twain has called "unforgettable":

Somewhere—in desolate, wind-swept space—
In Twilight land—in no-man's land—
Two hurrying Shapes met face to face,
And bade each other stand.

"And who are you?" cried one, agape,
Shuddering in the gloaming light.
"I know not," said the second Shape,
"I only died last night!"

◈

Our Neighborhood Nuisance

There's a mischievous puppy that digs my flowers
As fast as I set them out;
When his owner appears he cries and cowers
Till punishment is put to rout.

He's a neighborhood nuisance that every one kicks
When he chews up the wash on the line;
But I love him and pet him, in spite of his tricks,
For this bad little puppy is mine!

—Emma C. Dowd.

◈

The School as a Clubhouse

PHILADELPHIA is engaged in an interesting experiment, that of establishing a clubhouse in a public school. The building will be open from seven to nine P. M., and the entire expense will be borne by the city, with no dues or fees for members. A reading room, a play and game room, and a place for informal illustrated talks on popular subjects will be fitted out. Provision will also be made for manual training. The plan has the endorsement of the superintendent of schools. A schoolhouse in a tenement district of the city has been chosen for the initial trial. The plan is such a simple one that it ought to work out satisfactorily. There is no comfort in a miserable home. The children are driven to the street for their amusement. They might better be occupied with innocent games, picture books or study, if their homes afforded opportunities for such entertainment. Children soon will lose the inborn repugnance to the schoolroom if it is fitted up with books and flowers and pictures. Clubs will be organized among the boys and girls, there will be no dues to pay, and attendance will be voluntary.

◈

Heart o' My Heart

Heart o' My Heart, as the day is done
Homeward I turn to thee,
Knowing full well at the setting sun
Love waits to welcome me.
Weary my feet, but I haste away
After the toil is through,
Eager to see and eager to be,
Heart o' My Heart, with you.

Heart o' My Heart, we take our way
On through the fleeting years
Snows of winter and rains of May,
Never with doubts or fears.
Smoother the path to my tired feet,
Brighter the skies of blue;
Sweeter the rest in the snug home nest,
Heart o' My Heart, with you.

Heart o' My Heart, come good, come ill,
Stormy the weather, or bright,
Gleamings of love your dear eyes fill,
Shining by day or night.
Onward I go, your hand in mine,
Strong in your love so true;
Fair as the rose now the old world grows,
Heart o' My Heart, with you.

Heart o' My Heart, we side by side,
Wander on Love's highway;
Hand in hand whatever betide,
Trusting, let come what may.
Slowly the sun dips in the west,
Still I my way pursue
On to the goal of the weary soul,
Heart o' My Heart, with you.

—The Commoner.

◈

Crossing the Bar

Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar,
When I put out to sea;

But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the boundless deep
Turns again home.

Twilight and evening bell
After the dark!
And may there be no sadness of farewell,
When I embark;

For tho' from out our bourne of Time and Place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crossed the bar.

—Lord Tennyson.

◈

Mother's Hope

Inspire the erring ones with hope,
Great confidence and trust to win,
When they in darkness blindly grope
And try to loose some binding sin;
For transformed lives in one great sense
Are brought about by confidence.

Your world is full of hearts that long
For some kind word of loving trust.
Just tell the tempted they belong
Above the sordid worldly dust;
Just take their hands and say "Come on,
I'll help you till the victory's won."

Who helps the little ones to live
A life that's noble, grand and good,
Who confidence and hope doth give,
Hath found the greatest motherhood.
'Tis this that makes a nation rise
To meet the bounds of paradise.

—Mrs. B. Bush-Winger in People's Magazine.

◈

What Might be Done

What might be done if men were wise—
What glorious deeds, my suffering brother,
Would they unite
In love and right,
And cease their scorn of one another?

Oppression's heart might be imbued
With kindling drops of loving kindness;
And knowledge pour,
From shore to shore,
Light on the eyes of mental blindness.

All slavery, warfare, lies and wrongs,
All vice and crime, might die together;
And wine and corn,
To each man born,
Be free as warmth in summer weather.

The meanest wretch that ever trod,
The deepest sunk in guilt and sorrow,
Might stand erect
In self-respect,
And share the teeming world to-morrow.

What might be done? This might be done,
And more than this, my suffering brother,
More than the tongue
E'er said or sung,
If men were wise and loved each other.

—Charles MacKay.

Home Work

A LITTLE fellow in Altoona, Pennsylvania, not long ago hustled into a grocery with a memorandum in his hand.

"Mr. Jones," said he, "I want fourteen pounds of tea at twenty-five cents."

"All right," said the grocer, noting down the sale and instructing a clerk to put up the purchase. "Anything else?"

"Yes, sir. I want thirty pounds of sugar at nine cents."

"Loaf sugar? All right. What else?"

"Seven and a half pounds of bacon at twenty cents."

"Anything more?"

"Five pounds of coffee at thirty-two cents; eleven and a half quarts of molasses at eight cents a pint; two nine-pound hams at twenty-one and a quarter cents and five dozen jars of pickled walnuts at twenty-four cents a jar."

"That's a big order," observed the grocer, as he made out the bill. "Your mother wants it charged, or do you pay for it now?"

The boy pocketed the bill. "Mother hasn't a thing to do with this transaction," said he. "It's my arithmetic lesson, and I had to get it done somehow."—Success.

FARMER—"John, what in the world do you have those old buckets under the cow's feet for?"

JOHN—"Why, she's so fond of putting her feet in my bucket while I'm milking her that I thought I'd let her have a couple of buckets of her own to put her feet in."

Too Arrogant

"Why are the nations always at loggerheads with this country about the seal fisheries?"

"I suppose they think we are too over Behring in our way there."—Baltimore American.

◈

Practical Paternalism

"Sir, I want your daughter's hand."

"You may have it with the greatest pleasure, dear boy, if you'll take the one that's always in my pocket."—Baltimore American.

◈

Accounted For

ORCHESTRA LEADER—"I never heard the prima donna do that high note as well as she did last night."

STAGE MANAGER—"Nor I. You see, just as she reached it she saw a mouse in the wings!"—Yonker's Statesman.

◈

Another Breed

"Now, about airships."

"Well?"

"Will they allude to them as aerial greyhounds?"

"Why, certainly not. They will be 'sky' terriers, if anything."—Washington Herald.

◈

Bubbles

At a bargain sale even high hats are low.

Mobile ought to lead in the automobile business.

A lady's pier glass is not made exclusively for a peeress.

The unscrupulous magician is guilty of some low tricks.

The girl with pretty lips is likely to be purse proud.

On the stormy ocean of life there are many hardships.

In the social scale people are not inclined to weigh their words.

Some folks get their backs up when asked to shoulder a responsibility.

Even the upstart may be difficult to start up in the morning.

At a chiropodist's lecture the students take footnotes.

In this climate the thermometer certainly has its ups and downs.

The square man is not the one the others are trying to corner.

The judge who doesn't succeed at first should try, try again.

As to rapid transit, the fastest thing on record is a train of thought.

The voluble book agent is always prepared to speak volumes.

Distance lends enchantment, and does not expect you to pay it back.

He's an amateur poet,
But a rare one, though,
For he ne'er wrote a line
About "Beautiful Snow."
—Philadelphia Bulletin.

Wit and Humor

The Wreck of the Hesperus Family

It was old Farmer Hesperus
And his daughter, Milly May,
And they stood together hand in hand
In the middle of Broadway.

"O father I hear a raucous shout—
O father, what can it be?"
"'Twas only a tall policeman, child,
Who waves his hand at thee."

"O father, I hear the sound of wheels
And hoofs that loudly ring."
"It's one o' them there hansom cabs—
Gash-bish the durned old thing!"

"O father, I see a cloud of dust
Sift o'er me, head to feet."
"It's one o' them dum fool White Wings
A-sweepin' off the street."

"But, father, I smell an odd perfume—
O father, what can it mean?"
"Don't fly into hy-stericks, child—
It's only gasoline."

"Nay, father, I hear the cry 'Look out!'
And fear is on my nerve."
"Gee-whiz! here comes an auto-car
A-puffin' round the curve!"

"O father, I feel a dreadful bump—
What means that sickly thud?"
But the father answered never a word,
For his mouth was full of mud.
—The Electric Times.

◈

And Then They Parted

"Why, my dear friend, what luck to meet you! It has been an eternity, six years at least, since I have seen you. Didn't you recognize me?"

"Not exactly, but your hat seemed familiar."—Le Rire.

◈

His Fixed Expression

THE PHOTOGRAPHER—"Now, look pleasant, please."

THE SITTER—"I can't. I'm an automobilist."—Cleveland Plain Dealer.

◈

Got Him Into Trouble

DEACON—"By the way, that man Brown you married a year ago, has he paid you your fee yet?"

CLERGYMAN—"No; the last time I reminded him of it he said I'd be fortunate if he didn't sue me for damages."—Boston Transcript.

◈

His Stubbornness

"Haven't you and your friend got through that argument yet?" asked a parent of his youngest son.

"It isn't any argument," answered the boy. "I am merely telling Jimmie the facts in the case, and he is so beastly stubborn that he won't understand."—Chums.

Don't Pay

"Do you think the railway men will ever own the government?" asked the alarmist.

"No," answered Mr. Dustin Stax; "not unless governments show more signs of paying dividends than they do now."—Washington Star.

◈

Two Reasons Why

A government officer recently returned to Washington after an absence of some years abroad. He met an old friend who had been interested in flying machines, and asked:

"Well, Professor, how are you getting along with your aerial machine?"

"It is not yet a complete success," the professor said, with a sad smile. "I have two things to accomplish before I can say that it is."

"What are they?"

"I must discover how to get my machine in the air, and then how to keep it there."—Success.

◈

Motor Byways

A man in Altoona, the owner of a very fine forty horse-power limousine motor car, failed, and while his affairs were being settled up the car disappeared. As soon as everything had been adjusted, though, the car reappeared in the Altoona man's garage again. This angered one of the creditors, and the first time he saw the bankrupt he took him bitterly to task. "A nice bankrupt," he said. "How does it happen, if you're a bankrupt, that you still have that automobile?"

"Well, you see," said the other, smiling, "I went through the bankruptcy court, but the automobile went around."—Argonaut.

◈

A Serious Question

"Here," said Casey, about to order his lunch in the restaurant one Friday, "shure, here's a thing that's always puzzled me."

"What is it, man?" asked Cassidy.

"Is turtle soup fish whin it's made out o' veal, I dunno?"—Catholic Standard.

◈

Sure Thing

Mark Twain was talking to Senator Kean, of New Jersey, when he was in Washington lobbying for his copyright bill. He told the senator he gets thirty cents a word for his writings.

"By George!" said Kean, "the surplus would soon be wiped out if the government paid the President thirty cents a word for all he writes."—Argonaut.

◈

Quite the Contrary

"Does your husband play favorites when he goes to the races?"

"No," answered young Mrs. Torkins; "at least from the way he talks after the race I shouldn't say they were favorites."—Washington Star.

—From March Woman's Home Companion

Things You Are Thankful For

That you are married.
That you are not married.
That your cook didn't leave you.
That you don't have to worry about cooks.
That you didn't have indigestion.
That you recovered soon from your attack of indigestion.
That it was a fine day and you could wear your new spring clothes to church.
That it rained and you didn't have to go to church.
That the family reunion at your house was entirely successful.
That the family is no larger than it is.
That Thanksgiving comes but once a year.

◈

Cruel

CHOLLY—"The dentist told me I had a large cavity that needed filling."

ETHEL—"Did he recommend any special course of study?"—Cincinnati Tribune.

◈

"Her husband left her a fortune on condition that she shouldn't marry again, and you say she isn't satisfied?"

"No. She can't make out whether it means jealousy or revenge."—Detroit Free Press.

OLD LADY—"Young man, why don't you get up and let your father have the seat? Don't it pain you to see him reaching for a strap?"

BOY—"It don't pain me any to see him reaching for a strap in here, but it would if I saw him reaching for one around home."

Hedging

FIRST WEEK

Girl wanted: German, Dutch or Swede
Must be good-looking and polite;
Good cook, and one we will not need
To watch to have her do things right.
Must care for baby, wash and bake,
And keep things looking clean and neat;
Must sweep and have the beds to make.
Address J. P., 10 Umpty Street.

SECOND WEEK

Girl wanted: White, with reference;
Not over twenty-five years old;
Her looks are of no consequence
If she will do just as she's told.
No washing will she have to do;
She can sit down with us to eat;
Have Sunday afternoons off, too.
Address J. P., 10 Umpty Street.

THIRD WEEK

Girl wanted: White or colored; one
Who'd like a homelike place to stay;
There is no cooking to be done;
She can lay off at three each day.
Will let her have the parlor nights,
Where with her "steady" she can meet;
And she can exercise her rights.
Address J. P., 10 Umpty Street.

FOURTH WEEK

Girl wanted: White, black, green or blue;
Her age will cut no ice at all;
There's very little work to do;
Can have the front room off the hall.
My wife will cook; we both will wait
Until she's had a chance to eat;
Her own conditions she may state.
Address J. P., 10 Umpty Street.

FIFTH WEEK

Girl wanted: Any kind or size;
No matter if she cannot bake;
Her own will she may exercise,
If our home she will not forsake.
In fact, she needn't work a bit,
But simply stay there looking sweet.
Who knows a girl that this will fit?
Address J. P., 10 Umpty Street.
—Ridgway's.

◈

Golden Moments

"Have you a few moments to spare?"

"Young man," said the capitalist, severely, "my time is worth one hundred dollars an hour, but I'll give you ten minutes."

"If it's all the same to you," thoughtfully replied the visitor, "I believe I would rather take it in cash."—Philadelphia Ledger.

◈

Information Wanted

M. Z. (at the police station)—"Can I see the man you arrested at my house last night?"

CHIEF CONSTABLE—"What do you want to see him for?"

M. Z.—"I want to ask him how he managed to get into the house and go upstairs without waking my wife."—Le Rire.

E

FERTILIZATION AND CULTIVATION OF THE CORN CROP

THE preparation of the soil, fertilization and cultivation of the corn crop deserves more careful consideration than is given it by many farmers.

Calculating from the average number of bushels of corn grown to an acre in the United States we must conclude that there are many acres planted to corn that do not pay expenses of cultivation and harvesting. The corn crop requires more work bestowed in preparing the soil, planting and cultivating the crop than any of the smaller grains; hence the importance of preparing the soil well for the growing of a heavy crop, in order that it may pay expenses, and also leave a balance as profit to the farmer. It requires as much work to cultivate an acre that will only grow twenty bushels as it does to cultivate an acre that would grow fifty to seventy-five bushels of corn.

A sod land is best for growing the corn crop, since the crop occupies almost the entire growing season, in order to mature a crop, and it must have a soil that will furnish plant food in an available form throughout its growing season. The sod is gradually decomposing all the time that the corn is growing, and thus rendering plant food available as the crop needs it. The corn crop requires a mellow, rich soil, and it requires a large amount of water in order to give best results. The sod if plowed in the winter or early spring helps to hold the water until the crop needs it.

I have made a practise for a number of years of applying the stable manure to the corn crop. This is drawn to the field during the winter months, scattered broadcast, and turned under during the winter and early spring.

I like to do my plowing for corn during the winter, in order that the worms will be destroyed. The soil pulverized by freezing and early rains will be saved for the use of the crop during the drier part of the season.

Corn should come in a regular rotation. I have practised a rotation of corn first year, followed by either wheat or winter oats, then sow to grass and clover either with the wheat or oats, or else I turn the stubble after harvest and sow to buckwheat about the twenty-fifth of July, and sow the clover and timothy with the buckwheat. I usually get a better set of clover and timothy with the buckwheat than I do with the wheat or oats, and I get a crop of buckwheat that pays me very well for my trouble in sowing and harvesting it. I let the land stay in meadow for two years, then spread the stable manure on the sod, turn it under and put to corn again.

I usually apply from one hundred and fifty to two hundred pounds of a good grade of superphosphate an acre to my wheat, oats and buckwheat crops. The growing of the clover and the application of the stable manure furnish the nitrogen, and potash is furnished by the stable manure. Then the decomposition of the sod and manure in the soil helps to render available the potash already in the soil. The long roots of the clover also bring some potash, phosphoric acid and other minerals from the subsoil and deposit them near the surface, when they decompose.

I have not found it necessary to apply commercial fertilizer directly to the corn crop after I have got the land well into the rotation.

This year, however, I find it necessary to put corn on an old field that has not been under cultivation for about fifty years. The land is badly run down, and was abandoned as not worth cultivating about fifty years ago. I drew the manure from the stable to the field, scattered it broadcast and plowed it under last winter. It will lie there until corn planting time with but little loss of plant food, since the soil is hungry for plant food, and will hold it until it is taken up by vegetable growth. The soil has been pretty well pulverized by freezing and thawing, and a large amount of water is stored up in the soil for the use of the crop. After the surface dried in the spring I gave the land a good harrowing. Just before planting I will harrow again and drill in two hundred pounds an acre of a good grade of superphosphate with my grain drill. This land, which has not been under cultivation for so long, will likely be low in phosphoric acid, and it is also deficient in the stable manure.

After this I will lay off the land in rows three and one half feet apart, and plant the corn in hills three and one half feet apart in the row.

I selected seed long ago, and laid it up in a safe, dry place, so I have no fear that my seed corn will not germinate well. This will give a nice even stand of corn, since the worms which injure corn have been destroyed by early plowing and the freezing of the ground. There is also plenty of plant food distributed all through the soil.

After the corn comes up it will be thinned to two stocks to the hill, since I have found by past experience that there is nothing gained by leaving the corn too thick on the ground nor by crowding it in the hills. The corn will bear deeper cultivation when young than it will after the roots begin to spread clear across the row, and if the soil is not mellow and loose it is better to plow pretty deep, provided it does not bring sod and manure to the surface while the corn is young; but I have no fear of my land getting too solid if there is manure and sod both turned under.

The cultivation should be deep enough to kill weeds and to provide a dust mulch, in order to keep the moisture from escaping from the surface, but it should not be deep enough to break the corn roots. The corn will need all the roots that it can grow, in order to be able to gather up the available plant food as fast as it becomes fit for the use of the crop.

Then the moisture absorbed by the roots will be carried up through the plants to take the place of that just evaporated from the leaves, and that in turn to give place to fresh moisture from the soil. This moisture is all the time depositing its plant food just where it is most needed by the growing crop.

Hence the necessity of keeping the weeds down, so that they will not rob the growing corn of plant food and moisture; also the necessity of saving the moisture in the soil until the crop needs it. This is done by frequent and shallow cultivation. The corn should have the cultivator run over it as soon as the ground gets dry enough after every hard rain, in order to break the capillarity of the soil and produce a dust mulch. This should be kept up until the corn covers the ground, or until a horse cannot get through the corn without injuring it.

If this plan is followed the land will be pretty well rid of weeds by the frequent cultivation of the corn. The farmer will get good pay for his work in increase of the corn crop, and the land will be in good condition for the sowing of the wheat crop, by giving it a good harrowing after the corn comes off; and if grass is sown with the wheat crop, there need be but one breaking of the land in a four years' rotation. This economizes labor, which is quite an item in these times of scarce farm help and high wages.

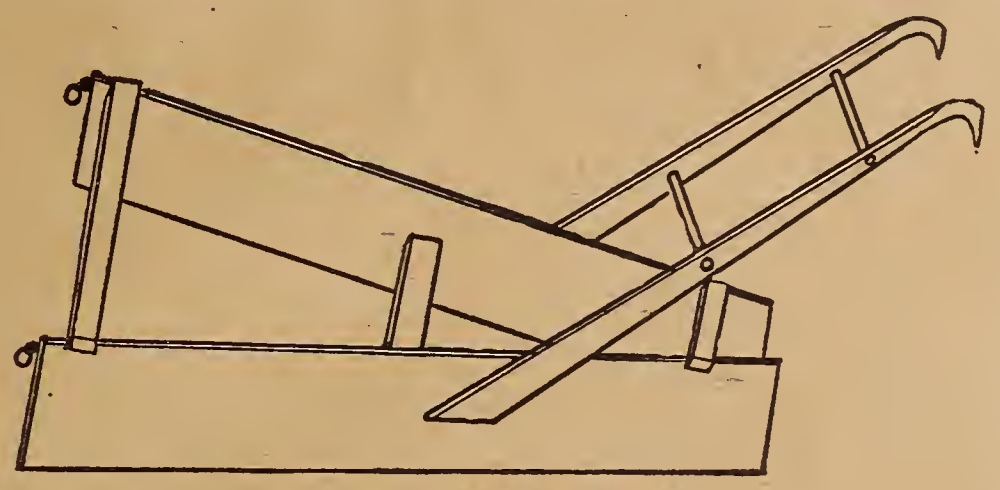
When the corn crop gets ripe, the gathering and storing away of a good supply of seed corn for the next year must not be neglected, since it is very important to have good seed, in order to get a good, even stand of corn.

Some prefer to gather the seed before the corn is cut. I have made a practise of selecting my seed as I husk my corn. I select from the earlier husking before there are any hard freezes. Whenever I find a nice, solid, sound ear of corn that I think will make a good seed ear when husking, I lay it to one side, and when I go to the house I take my seed corn with me and put it away in some dry, safe place where it will dry out nicely.

I continue to select seed corn until I have plenty of seed corn stored away. I can give it another culling when I go to shell it for planting. The ears are nubbed and a few grains are shelled from the large end of the ear. If it proves all right, the remainder of the ear is used for seed; if not, the whole ear is discarded and a better ear selected.

A. J. LEGG.

In the Field



POTATO COVERER AND RIDGER

POTATO COVERER AND RIDGER

Covering potatoes planted by hand in the row was such slow and tedious work that I made an arrangement similar to that shown in the illustration for the purpose, and I know of nothing that gives better satisfaction, either home or factory made. We also use it for making up ridges for the sweet potatoes and to follow the first "hand working" of celery, serving the same purpose as the laborious and slow work with the hoe in drawing loose earth against that filled in by hand, and holding it in place and supporting the plants. If an iron arch brace, such as is used on corn cultivators, is bolted midway on the sides, instead of the wood bar crosspiece shown in the illustration, this tool may be used to bank up celery after it has grown to maturity.

The side boards should be good solid pieces one and one fourth or one and one half inches thick, twelve or fourteen inches wide and four to six feet long. The handles may be taken from some discarded cultivator or plow. The three crosspieces should be braced with "L" irons underneath. If this is well done the center crosspiece may rest on top as well, allowing free passage of earth.

Heavy eye straps, with ring, are fastened on the front of each side board, so that, especially in banking celery, a horse may be separately hitched to each side. The spread in front should be about three feet, and the rear opening about twelve inches.

R. M. WINANS.

We are "losing" thousands of dollars this year by refusing "cheap," fraudulent and deceitful advertisements. FARM AND FIRESIDE believes in protecting its subscribers.

What Our Friends Say

EVERY mail brings expressions from subscribers that make us feel good, make us feel that FARM AND FIRESIDE is the best paper of its kind in the world. We are always glad to get these words of encouragement; we need them, and they always stimulate us to still greater effort. Just read what a few of our subscribers have to say; perhaps you think the same as they:

"I am a great friend of the FARM AND FIRESIDE. I have a farm of two hundred acres and have been endeavoring to farm along the line you advocate."—Charles H. Cloud, Missouri.

"I am not a farmer, but like to see a clean paper like yours, every number of which is worth the price for the whole year."—R. Williams, New York.

"I am sending my renewal to your paper, and I feel that I must say a few words in behalf of your efforts to make FARM AND FIRESIDE a truly great paper for the money. According to my judgment, I think you have been doing a good work for your subscribers, and I sincerely hope that your efforts will be rewarded with the success you deserve. I have been taking your paper for a good many years and am just beginning to appreciate the work of your able writers. I wish your paper was a weekly."—Robert W. Hart, South Carolina.

"I am the son of an old subscriber, and I can truthfully say that I have seen no farm paper that compares favorably with FARM AND FIRESIDE. We have taken the paper for the past nine years."—Frank L. Foos, New Hampshire.

"I have been a subscriber for a number of years, and it seems like I can't do without FARM AND FIRESIDE. It grows better every year. When my time expired in February I failed to get the March 15th number; at once my wife and the children besieged me to renew, but I said my time is out for certain other papers, and we haven't money enough to renew all and will have to drop some. 'Well,' said they, 'drop some of the others if you wish, but we can't spare FARM AND FIRESIDE,' and I thought so, too, so we renewed. FARM AND FIRESIDE is not only a farm paper—it is a family paper."—James D. Bowman, West Virginia.

"I know several housewives and farmers to whom your paper is a real help. They find much good in its different departments. I am a shut-in and of course enjoy the Fireside part, with its stories and sketches, best, but I like it all. I subscribed for five years, so I shall have the pleasure of reading your paper a number of years. I hope it will continue as rich in its different departments as now. Long life to the FARM AND FIRESIDE."—Mrs. G. H. Wheeler, Connecticut.

"We have taken the FARM AND FIRESIDE for a good many years, and continue to like it better right along. My husband still has the microscope he received from the FARM AND FIRESIDE as a premium for getting subscribers when he was only a little fellow. We take a good many and high-priced papers, but always welcome FARM AND FIRESIDE among the best."—Mrs. E. Gillette, Missouri.

"I have been a subscriber for many years. I like the paper very much and feel that I could not do without it."—F. Engler, Montana.

"I am so well pleased with the paper that you can count on me as a lifelong subscriber. I was so anxious to see you get more subscribers that I called on five of my friends and I told them that I had been a reader of FARM AND FIRESIDE twenty-six years, and they all subscribed. It is easy to get subscribers to your paper."—O. B. Robbins, Missouri.

"I have been a reader of your valuable paper for several years, and take a keen interest in all that it contains."—S. J. Rice, Indian Territory.

"I would rather do without the county papers than the FARM AND FIRESIDE. It brings out many practical points and much knowledge to the farmer. Three years' subscription herewith."—E. C. Yeally, Iowa.

"I have been a subscriber to FARM AND FIRESIDE for two years, and expect to continue. I think it the best farm and family journal ever published."—Lee Strickland, North Carolina.

"I have always enjoyed your paper, and note its continual improvement."—Ernest G. Morse, Minnesota.

"I am a boy twelve years old, and my father has been taking this paper for about twenty years. It seems like one of our family. We always welcome it, and it is read by every one in the family, I being the youngest of seven at home. Papa said he would not let it run out for anything."—Arthur M. Graye, Virginia.

"I can honestly say it grows better all the time, and we expect to remain your subscribers."—Mrs. W. Howard Kessler, Florida.

"We think the FARM AND FIRESIDE is clean clear through."—Milton O. Smith, Pennsylvania.

"Have been a constant reader of your paper for years, and find it the most worthy paper at twenty-five cents that I have ever known."—Mrs. Adaline Douglas Hardwick, Georgia.

"I am a reader of the FARM AND FIRESIDE and cannot get along without it. It is always a welcome guest, and I think every housewife in the United States should read it."—Mary Pohlman, Illinois.

"Why don't you publish the FARM AND FIRESIDE weekly instead of semi-monthly? Such a great farm journal should be published once a week."—Charles T. Peal, North Carolina.

"Couldn't keep house without your paper. Hope to take it the rest of my life."—Mrs. H. W. Gwaltney, Florida.

The Grange

BY MRS. MARY E. LEE

KANSAS STATE GRANGE

The thirty-fifth annual meeting of Kansas State Grange was one of the most enthusiastic in years. The attendance was twenty-five per cent larger than last year. The last three years have witnessed a very satisfactory increase in Granges, and membership and the prospects for growth in 1907 are better than for a number of years. Several organizers were placed in the field January 1st. One new Grange has resulted, and many localities feel the impress of Grange spirit.

A very able legislative committee is at work in Topeka with the Kansas legislature. The Grange asks for reduced passenger fare, and for better transportation facilities, and is seeking to prevent the car shortage which is causing such damage among the farmers of the state. The people are suffering from the coal famine, and prices are going skyward. The Grange is also seeking larger appropriations for the college agriculture, and a more equitable system of taxation. Under the present system farmers and small property owners bear taxes out of all proportion to their holdings. We are seeking a method of taxation that will compel all to contribute to the burdens of taxation in proportion to their ability to pay and the protection they receive.

GEORGE BLACK,
Master Kansas State Grange.

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E. W. WESTGATE

One of the prominent figures in National Grange circles is E. W. Westgate, Past Master of the Kansas State Grange. Mr. Westgate is now chairman of the committee which has the important duty of revising the Digest.

Mr. Westgate was born in New Hampshire on a farm. He graduated from Dartmouth in 1860, taking the B. A. degree then, and three years later the M. A. degree. For several years he was superintendent of schools in New Ipswich, New Hampshire, Montpelier, Vermont, and Lebanon, New Hampshire. He is a member of the Alpha Delta Phi Greek letter fraternity. He is also a member of the Phi Beta Kappa, an honorary fraternity to which only those who graduated with the highest honors can gain membership.

Realizing the great opportunities open to educated young men in farm life, he went to Kansas in 1883. He had become

MR. E. W. WESTGATE
Chairman of Revision Digest Committee

a member of the Grange in New Hampshire in 1874, going in as charter member.

In 1896 he was elected Overseer of State Grange, in 1898 Chaplain and in 1900 Master, which position he occupied till 1907, when he laid down the work.

He was immediately elected chairman of the executive committee.

In his closing remarks as Master he said: "Mistakes have been made and regretted. I have tried to be faithful and impartial in my duties. I thank you for the privilege of contributing, even in a small degree, to the interests of our order, both at home and abroad. Upon the installation of my successor I shall, with pleasure and a sense of relief, surrender all insignia of office and all property of the Grange in my possession, and bid him Godspeed in his mission."

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PERILS OF OUR REPUBLIC

Great power means great opportunities and weighty responsibilities. No organization wields a larger influence in public matters than the Grange. History records no time so ripe for individuals and organizations as this, and they who plant their feet on the undying principle of right, guide their course by reason, gain instruction by the experience of other times and peoples, will have little to regret and much in which to glory. The lamp of experience is a safe light.

All sorts of reforms are rushing to the front, each clamoring for vantage ground. Many of them are foreign alike to our institutions and to the spirit of justice. They have a catchy sound and appeal to our vanity, but not our reason. Violent abuses have grown up that threaten our country, not so much in themselves as in the spirit they have aroused. The perils have so far touched our anger, but not our conscience. We are not yet beyond the "an eye for an eye and a tooth for a tooth" age.

We have neglected the business of our communities, and unscrupulous men have profited by our indifference. Instead of correcting the principle upon which these abuses have grown, we seek revenge on the offender. The real culprits are ourselves, jointly with those we threaten. We condemn laws made to legalize robbery and oppression, and would enact other laws to rob the robbers. We forget that two wrongs do not make one right. We feel a grievance, and argue the principle is wrong. We should have scented the grievance from afar by the badness of the principle. We are frenzied with the burdens we bear, and would throw them off with frenzied action. We know the power of the ballot, but forget that masses can be inflamed to invoke the same aid. True reform is simply true repentance. The ballot box should be the mercy seat.

The immense advantage of the Grange fills us with hope as well as anxiety. Its future power lies in the wisdom of its reforms. If its acts are guided by wisdom and stern probity, by a keen desire for justice re-enforced by a determination to find what is just, its power will be unlimited. On the contrary, if its acts are rash and ill considered it must suffer the consequences such acts entail.

The chief perils, I take it, that confront us are:

Immature notions as to ethical and economical laws. These can be corrected by study.

Partizanship. It robs us of honor, because we would sacrifice public good to party exigencies.

Decay of religious belief. Genius has left the pulpit to haunt the senate and the market place. Literature has become frivolous. Science is cold.

Lack of faith. We suffer from our own mistakes, and have not the faith to believe that love and wisdom will bring good.

A large annual immigration of people who cannot, for years, absorb the notions of our peculiar form of government.

The attack on accumulated wealth and the transfer of power to the class which arrogates to itself the title of "Labor."

Vast aggregations of wealth in the hands of a few, giving them despotic power.

Universal man suffrage, which depends on sex and the age limit to decide the weightiest problems that affect a nation.

Out of these defects have sprung many ills. Can we learn how to correct them? Yes. By study of principles, with a stern determination to be actuated by reason and justice, and to find what is reasonable and just. In this study there is no organization so fitted by natural advantages as the Grange.

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HONESTY AND ECONOMY IN PUBLIC EXPENDITURES

A. B. S., Coraopolis, Pennsylvania, commenting on recent editorials relative to honesty, economy and efficiency in public matters appearing in these columns, hits the nail on the head. He writes:

"You recommend parcels post and good roads, and say, 'Let us show our faith by our works and secure a national appropriation for good roads, and then see that it is expended in roads and not in fat salaries.'

"Now, there is where the rub comes. 'Don't spend it in fat salaries.' Isn't that just what is done, not only in road making, but in every department in public life? Big salaries are the rule rather than the exception. And they are being increased all around, and creating new offices by the dozen in order to make room for the political sharps. Then our taxes are increased to pay more salaries, and the tax payers have not a word to say about it. The men in office assume to have the whole say, and do practically, about creation of offices and salaries of same. I send you a clipping from the Pittsburgh 'Gazette,' containing the recommendations of the highway commissioner for increases in salaries and creation of new positions or 'jobs,' the increase asked for amounting to $60,200. This will give an idea of what is being done, and is only a drop in the bucket. I cannot see why a man in office should have so much more than other men in other occupations in life.

"I have been a farmer all my life, and am an old man now, and it can make but little difference to me, as I will soon pass over, but for the sake of the younger generation I would like to see the thing remedied. I live in Allegheny County, and it looks as if we would be compelled to sell our farms before long. A senator from this county will present a bill to have the salary of the district attorney raised from $6,000 to $12,000. They can get many equally competent men at $6,000. I believe they can get better, for the increase of salary will enable the sharks to spend more money for the office. It now seems that they who have the money to spend are the ones who get offices.

"What can be done to stop this fat-salary business? If the different Granges would take the matter up and pass resolutions against it, it would be a great help. The Grange has great power and influence. I hoped you might be able to put something in your paper that would get them to take action, for something ought to be done."

The simple, direct, forcible statement of the facts as given by A. B. S. is one of the first steps. Intelligent public opinion supported by wise action can alone cure the evils. The next step is for the various agencies working for public good to unite in asking the next legislature to enact a satisfactory law providing for a uniform system of accounting and auditing, and publication of the results.

Business is business, whether carried on by an individual, firm, corporation, private or public concern. A business man could not expect success who took no heed of income and expenditures. If the private business of the people of this nation had been carried on in the slipshod manner in which the public business has been we would be a nation of paupers. The first step toward a businesslike administration of public affairs is a uniform system of bookkeeping wherein income and expenditures may be seen as readily as in a corporation—the annual inspection and auditing of these accounts by experts, and the publications of findings. Thus the public, the employers, will be in possession of the facts necessary to conduct a safe business.

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THE OBSERVATORY

"The way that I organized Michigan was by going after the state just as a politician goes after his state—by knowing every community, the leaders in it, and then going after them for the Grange," said George B. Horton, of Michigan.

One of the best organized states in the Union is Maine. One twelfth of its entire population is in the Grange. The Granges give attention to the social and educational features as the chief means of entertainment.

Inquiries from Texas come to this office, asking for help in organizing Granges. Let prominent families in a community come together and work in harmony for an organization in their community. Report results, and you will get a Grange organized.

The increased space given Grange matter in many of the leading agricultural papers is an indication of the interest this organization holds among farmers. Publishers publish what the people want. Aggregate space given in various papers is greater than ever before.

Do your work and you shall be known. Do your work and none shall defeat you. Make a name and a place for yourself. Follow out the divine will by doing nobly that which your best moments prompt you to do. Be brave, patient, painstaking, but work, work all the time. You will have your reward.

Under the aggressive leadership of Hon. Obadiah Gardner, of Maine, one twelfth of the population of that state is organized into Granges. When it is remembered that Maine is a ship-building and manufacturing state, that the gates are closely guarded which lead to the Grange, it will be seen that most of the best farmers are united.

COW NOTES

One of the objections commonly urged against raising cows is the one that the dairyman can go out and buy cows cheaper than he can raise them. If he could always buy good ones the point might be well taken; but the good cows are not the ones that crowd the markets for sale, and the last cost of a cow is of more importance in judging her value than the first cost.

There are some things of which I do not keep a strict debit and credit account, and raising calves to cows is one. I strongly suspect that I cannot produce a good, well-grown heifer with her first calf for fifty, nor perhaps sixty, dollars; the expense comes gradually, and after a while one has a fine young cow, and does not always have the sixty dollars to buy one. Then the strong point is that if the calf has been bred right, with a good cow for its dam, and for its sire a bull descended from a line of dairy kings and queens; if the calf has been fed right and the heifer fed right and enough always, and handled right, we can embrace the reasonable assurance that the calf will develop into a heifer, and the heifer into a cow that will mature into a usefulness worthy of her inheritance.

Breeding good dairy animals is not yet an exact science. It is an evolutionary work in which the painstaking, patient, intelligent breeder is co-operating with Nature for the production of the improved animal. And Nature will not be hurried, so the work of a breeder is not the work of a few tentative matings of animals, showing wonderful results in a few years. It is more nearly a life work for a man, and one man's life is often so lamentably short for the length of the work.

For the encouragement of the new hand I can unhesitatingly assure him that if he will mate good cows of proven worth with their breed males, having good pedigrees in all that the word means, feed and care for intelligently and follow up a systematic and scientific course of breeding to definite lines, keeping a cow that being bred right should therefore be right, and of course carrying no visible objectionable physical deformity, till she is a fully matured animal, and then uncompromisingly rejecting all that do not measure up to standard, remembering always that continued, uninterrupted good feeding is the handmaiden of good breeding, almost marvelous results toward the end of getting good cows can be accomplished in a few years. But purity of blood and prepotency are essential in the work. Let this be remembered. If we cross breeds or use grades on grades we are working entirely at random and doing uselessly over again the primary work the first improvers did in the beginning of their work.

The wise breeder will not start at the bottom, from where the pioneers have advanced, but rather take up the work at the point of such improvement as they have attained. W. F. McSPARRAN.

ANTI-KICKING APPLIANCE

The anti-kicking appliance described January 15th in FARM AND FIRESIDE may be a very good device to prevent a cow from kicking, but I can guarantee one much simpler.

Take a rope long enough to go around the cow's body, about a foot behind her fore legs, with a ring or noose at one end; put the other end through the noose, pull it good and tight and half hitch it, to keep it in its place, as a belly girt. It will cure her of her kicking habit. After a few times you need only to lay the rope over the cows back—no more tying, for she's forgotten all about the kicking business.

My experience was a few years ago in England. We used to bring up twenty or more calves every year. When a cow calved, we would put the calf to a stale milch cow about three months before she was dried off, and make her bring up the calf, so we could add the new milch cow to the dairy. Of course, it was natural for the cow to kick with a strange calf, but the rope business used to cure them all. CHAS. AKHURST.

PEAS FOR BEEF

A special dinner was provided for Colorado stockmen at Denver about the fourteenth of February, for the purpose of deciding upon the merits of beef produced by the feeding of peas exclusively for the finishing period of three and one half months. The opinion was unanimous that the quality of the meat was very superior; that the fat was of especially fine flavor, being eaten with as much relish as the lean meat, being, as it was, entirely free from the tallow taste common to the fat of calves fattened on corn. The calf butchered for this dinner weighed about eight hundred pounds. *

FARM AND FIRESIDE stands for the best in everything—the best in reading matter, in advertisements, in influence and helpfulness.

If you will get two of your neighbors who don't take FARM AND FIRESIDE regularly to subscribe at twenty-five cents a year, and you send us the fifty cents, we will send FARM AND FIRESIDE to each a full year and give you a full year free. Three yearly subscriptions in all. That's a good fair offer. Let us hear from you.

FARM AND FIRESIDE
SPRINGFIELD, OHIO

THE BEST THING YET!!

FARM AND FIRESIDE is so pleased with the interest its boys and girls and other friends are taking in this Great Four-Pony Contest, that it has decided to make a great additional offer—an offer which probably means the expenditure of many hundreds of dollars more than we first intended. This additional offer is

SOMETHING EXTRA

It really doesn't concern the other prizes we offer in the Pony Contest at all, for if you are a contestant you will get your prize **sure,** whether you take advantage of this "Best Thing Yet" offer or not. This offer is entirely in addition to the Four Ponies, the twenty-five Grand Prizes and all the other prizes, and is made for **your** benefit as a **gift** from FARM AND FIRESIDE. It is so easy to take advantage of, so big and so liberal in every way that we have decided that only those who are **bona-fide contestants** in the Great Four-Pony Contest shall be eligible. We want to keep out lazy people and curious ones, but for the hustlers this great surprise is certainly the climax of all our liberal offers. You can't afford to miss this great opportunity. It truly is **The Best Thing Yet.** In order to take advantage of this great offer, you must become a contestant by May 1st at the latest.

"SURPRISE" and "BEAUTY"—Matched team, wagon and harness, for the winner of the first prize. From the George Arnett Pony Farm, Springfield, Ohio.

"FUZZY"—One of the handsomest Shetland ponies in America. "Fuzzy" will be given absolutely free, with cart and nickel-plated harness, to the winner of the second prize in Farm and Fireside's Foor-Pony Contest.

HOW TO BECOME A CONTESTANT

It is the easiest thing in the world to become a contestant in FARM AND FIRESIDE'S Great Four-Pony Contest. All you have to do is to send FARM AND FIRESIDE the coupon below or a postal card with your name and address, and get the ten yearly subscriptions to FARM AND FIRESIDE at twenty-five cents each, keep fifty cents for your trouble, and send the ten names with $2.00 to FARM AND FIRESIDE, Springfield, Ohio. As soon as the coupon or postal is received we will send you full particulars of the Great Four-Pony Contest by return mail, and when the ten subscriptions and $2.00 are received you will be not only a bona-fide contestant, but you will already be entitled to a valuable prize;—and besides, we will tell you all about this Great Surprise that we have in store for you. It will not only surprise you, but delight you also, to know that we are going to be so generous and fair with you. It is the most liberal offer in the history of the publishing business and will help you a great deal to win the ponies. Remember that in this great contest we offer

FOUR MAGNIFICENT PONIES
TWENTY-FIVE GRAND PRIZES AND THOUSANDS OF OTHER PRIZES
A VALUABLE PRIZE FOR EVERY CONTESTANT

"WUZZY"—This famous little Shetland will be given with saddle and bridle complete (all except the little boy and girls) to the winner of the third prize in Farm and Fireside's Four-Pony Contest.

VERY IMPORTANT!

Remember this Special "Best Thing Yet" offer expires May 1st, so hurry up and get your ten subscriptions before then. Those who become contestants in the Great Four-Pony Contest **after** that date will not be eligible to this great offer that is certainly **The Best Thing Yet.** Remember "The Best Thing Yet" is entirely in addition to the regular prizes in this great contest. We are going to give more than we originally promised. "The Best Thing Yet" will certainly please you when you realize what it is. You have nearly three weeks now, so hustle and get the ten subscriptions just as soon as you can—the sooner the better for you. Get your relatives and friends to help you win the ponies and before you know it you will have ten subscriptions and be a prize winner **sure.** Then we will tell you all about our big surprise that is in store for you. Just send a postal card or this coupon to FARM AND FIRESIDE to-day and say that you want to know all about the Pony Contest. We will give you full particulars by return mail and tell you just how the ponies will be given away. Remember you will have to take advantage of this great offer **now** in order to get "The Best Thing Yet." "Get in the Saddle!" that's the motto.

CUT THIS COUPON OUT AND MAIL TO-DAY—NOW.

Farm and Fireside,
Springfield, Ohio

DEAR SIR:—I want to enter the Great Four-Pony Contest right away before May 1st, so as to take advantage of your "Best Thing Yet" offer. I will send my ten subscriptions as soon as possible. Save a place for me in the contest and send me full particulars.

Name .....

Post Office .....

Date ..... State .....

FARM AND FIRESIDE
The Great Four-Pony Contest **Springfield, Ohio**

MADISON SQUARE PATTERNS

Our Spring and Summer Catalogue of Madison Square Patterns Sent Free Upon Request

Order all Patterns from Pattern Department, The Crowell Publishing Company, 11 East 24th Street, New York City

FULL DESCRIPTIONS AND DIRECTIONS—as the number of yards of material required, the number and names of the different pieces in the pattern, how to cut and fit and put the garment together—are sent with each pattern, *with a picture of the garment to go by.*

No. 853—Wrapper with Tucked Yoke
Sizes 32, 34, 36 and 38 inch bust measures.
10 cents.

No. 889—Box-Plaited Shirt Waist
Sizes 34, 36, 38 and 40 inch bust measures.
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Sizes 32, 34, 36 and 38 inch bust measures. 10 cents.

No. 887—Misses' Waist with Bib Jumper
Sizes 12, 14 and 16 years.
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Sizes 2, 4, 6 and 8 years.
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Sizes 2, 4, 6 and 8 years.
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Sizes 4, 6, 8 and 10 years. 10 cents.

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Sizes 12, 14 and 16 years. 10 cents.

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Sizes 12, 14 and 16 years. 10 cents.

No. 796—Peter Pan Dress
Sizes 6, 8, 10 and 12 years. 10 cents.

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Sizes 34, 36, 38 and 40 inch bust measures.
10 cents.

ALL PATTERNS 10 CENTS EACH

When ordering be sure to comply with the following directions: For ladies' waists, give BUST measure in inches. For skirt patterns, give WAIST measure in inches. For misses or children, give age in years. To get BUST and BREAST measure, put tape measure ALL of the way around the body, over the dress, close under the arms. Order patterns by their numbers. Satisfaction guaranteed or money refunded.

We have the finest Fashion Catalogue published. It will be sent to you Free. Drop us a postal card to-day.

FREE We will give any TWO of these patterns for sending TWO yearly subscriptions to FARM AND FIRESIDE at the regular price of 25 cents each. **When ordering "write your name and address distinctly."** We will send FARM AND FIRESIDE One Year, new or renewal, and any ONE pattern for **Only 30 cents**

For other new and up-to-date designs see page 24

DISTRACTING PUBLIC OPINION

A few days ago an ex-congressman said to me, "Do you remember that I told last fall that there would be no legislation by this Congress that would amount to a pinch of snuff?"

I remembered it well.

"When I said it," he continued. "I was wondering what issue would be raised to distract public opinion from badly needed legislation sufficiently to prevent an overwhelming demand for it. The Brownsville colored racket came just in time to provide the necessary requirement. The country got so busy discussing that matter that it forgot what Congress is for. Then the little Japanese question was worked to a frazzle to keep up the distraction until it was too late for Congress to do anything but scatter the nation's millions among districts needing it to hold them 'solid' for the party."

Ex-congressmen can speak unpleasant truths sometimes. It was perfectly plain that the colored incident referred to was given the prominence accorded it for the purpose of hiding the masterly inactivity of Congress. There is a strong and rapidly increasing demand for the removal of the tariff on lumber. and a reduction of that on iron and steel, and congressmen who are controlled by the lumber and steel trusts have been working hard to keep down the agitation until after the next presidential election, because it might have a "bad effect on finances." The fact that prices of lumber have advanced a hundred per cent in ten years, and are going up with leaps and bounds, is kept as quiet as possible, or attributed to higher freight rates, or to the "threats" of President Roosevelt to add some thousands of acres of forests to the national reserves.

A "FARM AND FIRESIDE reader" writes that he is unable to understand how a certain United States senator can hold his seat against all comers, when he has no interest at all in the plain people of his state, but is an outspoken defender of corporate franchise grabbers, trusts, etc. The only reason I can give is: Because the people of his state want him in the Senate, and keep him there. It is quite a difficult matter to elect a man to an office unless a majority of the voters want him there. The plain people are the voters, and they elect the legislators who elect the senator. Does this "reader" attend his local primaries regularly and try as hard to elect clean delegates to the nominating convention as the paid local bosses and politicians do to elect nonentities who will do their bidding? The only way to overthrow "boss" and "ring" rule is to make an open fight against them and the issues they stand for. Thousands of plain people go to the polls, or to the primary, with no more idea of their duties than a child. They go to vote their "party ticket," and if they beat the "other ticket" they are delighted. What their ticket represents or what the "other" ticket represents they do not know. The ticket they vote has the label of their party on it. They vote the label, and everything else goes with it. It is the duty of "reader" to open the eyes of these people—to enlighten them. An enlightened voter quickly becomes an independent voter, and one that cannot be "handled."

FRED GRUNDY.

TYPES AND BREEDS OF FARM ANIMALS

"Types and Breeds of Farm Animals," by Charles Sumner Plumb, Professor of Animal Husbandry in the College of Agriculture of the Ohio State University, describes the commonly accepted types, as, for example, draft or speed type of horse, dairy type of cattle, and bacon type of swine. It includes discussions of the original habitat, of breed development, European history, special American history, work of pioneer breeds, famous animals, families or tribes, breed characteristics, breed and individual records, as, for example, milk of cows, butter, or speed of horses, etc. Many noteworthy records are given and numerous illustrations of famous animals shown. A comprehensive table of contents and an index form an important part of the book.

The work is primarily intended for students in agricultural colleges and universities. Breeders and feeders of animals, however, will find this volume a valuable reference work.

8 vo. Cloth. 563 pages. Illustrated. Price, postpaid, $2.20, including one year's subscription to FARM AND FIRESIDE.

These books are for sale by FARM AND FIRESIDE, Springfield, Ohio.

THE BOOK OF ALFALFA

History, Cultivation and Merits. Its Uses as a Forage and Fertilizer. By F. D. Coburn, Secretary Kansas Department of Agriculture.

Profusely illustrated with about thirty full-page plates of fine, clear photographs 6½ by 9 inches. 336 pages. Cloth. Price, postpaid, $2.00, including one year's subscription to FARM AND FIRESIDE.

FARM AND FIRESIDE

AN ILLUSTRATED FARM AND FAMILY JOURNAL

EASTERN EDITION

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The Cultivation of Corn

By Prof. G. I. Christie, of the Indiana Agricultural Experiment Station

THE average yield for corn for the corn belt for a period of ten years is about 32.6 bushels an acre. The average cost of raising an acre of corn is about ten dollars, which at average prices means about thirty bushels of corn. From these figures one can see that the average yield of corn is far from a profitable one. A study of conditions shows that much of the land devoted to corn is capable of producing from sixty to one hundred bushels an acre when planted with good seed and properly tilled. Investigations also show that although the low yield is due in a measure to, first, low yielding varieties, and second, the use of seed of low vitality and seed improperly graded for the planter, that the yield is materially affected by the fertility of the soil, preparation of the seed bed and the cultivation of the growing crop.

Perhaps no question has called forth more discussion than that of the best methods of handling soils for corn. Soils are so different in type and characteristics, and are so influenced by the seasons, that no definite rules for cultivation can be given which would cover all cases. All that will be attempted in this article will be to give a few general principles which may be of assistance in dealing with the many problems.

CONSERVATION OF SOIL MOISTURE

One of the secrets of successful corn growing is the early cultivation of land for the purpose of conserving soil moisture. Careful experiments made by King at the Wisconsin Experiment Station and German investigators show that to produce one ton of dry matter in the corn crop about four hundred tons of water are required. This means that for a good average crop of corn an enormous amount of water is necessary. A study of the rainfall records for a number of years shows that the amount of rainfall during the growing season does not begin to supply the needs of the crop. If this be true, steps should be taken to hold in the soil as large amount as possible of the fall, winter and spring rains. This can be done in part by disking the land in the spring as soon as a team can go on the soil and the danger of puddling is past. On land which has been fall plowed this cultivation will break up the crust and form a mulch, which will conserve the moisture and prevent the soil baking, in this way materially assisting in the preparation of the seed bed.

FALL PLOWING

Fall plowing cannot be recommended for all soils or all localities, but should be practised more generally than at present. Fall plowing is preferable, because it can be done at a time when the rush of work is not so great as in the spring. Fall plowing enables one to combat grub worms, cut worms, corn-root worms, corn-root lice, and other insects injurious to corn. The fall plowing opens up the soil and allows the moisture to enter more readily. It also allows earlier cultivation and insures earlier planting than spring-plowed land. Experiments have also shown that for a period of years fall-plowed land will yield more corn than similar land spring plowed.

DISKING BEFORE PLOWING

Some work done in the way of disking land to be spring plowed before breaking has given marked results in favor of this operation. The disking of the ground breaks the crust that may have been formed during the winter, cuts up and incorporates with the soil any stubble or other organic matter that is on the surface, in this way aiding the capillary movement of water. Where grass, straw, weeds or corn stalks are plowed under in the spring we often find this intervening layer of organic matter to be responsible for the failure of corn plants to secure sufficient moisture in periods of light rainfall or drought. Cut 1.

By disking of the surface soil before plowing and after plowing, it is found that the soil is pulverized the entire depth of the furrow slice, which furnishes a larger and better prepared field in which the corn roots may feed.

Fig. 1 illustrates the usual method of breaking ground. For spring plowing this is objectionable because of the heavy coat of organic matter which will lay between the subsoil and furrow slice, and in this way interfere with the capillary movement of water. Disking before plowing will improve this condition. The following of the plow each day with the harrow will assist in breaking down the lumps and clods

Plot 1 was plowed in the usual way and given ordinary cultivation. The stalks were small and weak.
Plot 2 was disked before plowing, which was done at same time as Plot 1, and given the same cultivation. The stalks were large and strong and the yield of corn, though not accurately obtained, was much beyond that of Plot 1

FOLLOW THE PLOW WITH THE HARROW

In many soils spring plowed, lumps of greater or smaller size will appear. If these are allowed to dry and bake in the wind and sun, a very unsatisfactory seed bed is oftentimes obtained at planting time. Much can be done to break these lumps or clods and form a mulch which will aid in conserving the moisture if the plow is followed with the harrow. A satisfactory plan is to harrow thoroughly each evening the land plowed that day.

EARLY PREPARATION OF THE SEED BED

The early preparation and frequent stirring of the soil before planting time is to be recommended. In this way a loose mulch is maintained, the ground is prevented from baking, and many insects, as the corn-root louse, are largely controlled. Ground that is plowed early in the season, and allowed to stand untouched until a few days before planting time, does not give under average conditions the best results.

TIME OF PLANTING CORN

Since the date of planting varies with the season, the soil and the location, no definite time can be given. The results of experiments carried on at this station lead us to believe that, one year with another, the early planted corn gives the largest yield. Early planting for our district is from May 1st to May 10th. Corn should of course not be planted in cold or wet ground, because the calendar shows the usual time for planting has arrived, but by good drainage, fall plowing, early cultivation, etc., every farmer should strive to have his land in shape at the proper time for planting.

PLANTING

The method of planting corn will depend upon the character of the soil and the preparation of the seed bed.

Land that is rough or very rolling, land that is well prepared previous to planting, free of weeds and easily tilled, can be drilled to good advantage.

Soils that bake easily and require much cultivation after planting, soils that have an abundance of weeds, or have had the seed bed poorly prepared, should be planted in hills, so that the land may be cultivated both ways during the growing season.

In deep soils, such as are found in the Mississippi Valley, the corn may be listed. This consists in throwing out a deep furrow and planting the corn in the bottom of the furrow. This practise is not recommended for shallow or stiff clay soils.

CULTIVATION

The proper cultivation of corn should receive careful study, since perhaps no work in connection with the crop does more in controlling the yield.

It has been found advisable to stir the ground once, and sometimes twice, between the time corn has been planted and the time it comes up. For this work the spike-tooth harrow is generally used, but on light soils or soils that are loose and easily worked the weeder may be used. The practise of harrowing corn after it is up, followed by many good corn growers, is opposed by some, on the grounds that some of the corn is destroyed. It is true that a few plants will be pulled out or broken, but the results from harrowing under average conditions are such that the practise is to be recommended.

When the corn is high enough to row nicely, the cultivator should be started, and cultivators with narrow shovels that throw the soil but very little should be used. Fenders are usually found desirable to prevent the covering of the small plants.

In this connection comes up the question of deep versus shallow cultivation. In recent experiments it has been found advisable to cultivate to a good depth (two and one half to three and one half inches) the first and second cultivations, shallower cultivation being given in the later cultivations. This practise is followed, for the reason that in the early season the roots of the corn plant are not very expensive and will not be injured to any extent by deep cultivation, while later in the summer, when the roots begin to occupy the larger share of the ground, shallow cultivation is given, so as to prevent injury to the roots as far as possible.

One fault with the average corn grower is that he stops cultivating his corn too early in the average season. If the season is dry, and the condition of the soil demands it, shallow cultivation should be continued, even though the corn is tasseling. This later cultivation is best done with a one horse A-shaped cultivator, with teeth similar to that of a spike-tooth harrow; or the dragging of a mower wheel over the soil will do much to preserve the mulch. Late cultivation where practised during the last two or three years has made many bushels of corn.

Profits in Farming

IT OFTEN happens that a man who opens up a store in a favorable location gets to be a rich man. Yet many others who engage in the same line of work have great difficulties to make both ends meet, and many others finally come entirely to the end of their rope.

So it is in the various branches of farming. Some succeed, some just manage to make a bare living, and some fail. Farm life has especially bright sides and attractive features, however, and in our enthusiasm we are at times apt to overstate the case of profits. Average farming rarely pays, and yet we have instances of large profits made in particular lines—as, for instance, in fruit growing and vegetable gardening. A year or two ago Dr. B. T. Galloway, of the Department of Agriculture, Washington, D. C., said in "Youth's Companion" about "Intensive Farming:"

"General fruit growing offers the greatest number of opportunities to young men, although not the greatest opportunities when you come to consider the largest incomes that may be secured from a given amount of ground. Fruits, however, are always in demand, and five, ten, fifteen or twenty acres devoted intelligently to this work should yield an income above the average secured in professional or mercantile pursuits."

Dr. Galloway holds that it is not necessary to select expensive land for such purposes. Even if it be "run down," from the standpoint of the general farmer, it may be perfectly suitable, as "with proper and intelligent management it can soon be brought back to more than its original fertility. The important requirements are accessibility to market, good shipping facilities, a soil that will give both early and late produce—that is, light and heavy soils—and water for irrigating. There are many pieces of land having all these characteristics that can be bought for from fifty to seventy-five or one hundred dollars an acre. Suitable buildings will cost from twenty-five hundred to three thousand dollars."

Doctor Galloway states that "proper management of such farm of ten acres should bring the owner not less than five hundred dollars an acre. This will mean, of course, that crops must be handled in the right way, that intelligence and judgment must be used in their rotation, and that from frost to frost the land must not be idle. Grapes, strawberries, dwarf pears, raspberries and blackberries should be the principal fruits. By growing the best of everything and making a special market for special products, the highest prices will always be obtained."

So far Doctor Galloway. The prospects of five hundred dollars an acre, or five thousand dollars from ten acres—from a small farm costing only five hundred to one thousand dollars at the start, a farm which with serviceable buildings can often be bought for two thousand dollars, or even less—looks rather attractive and must prove quite a temptation to people occupied in other pursuits who may be hard workers and yet cannot make one thousand dollars a year, especially when such prospects are held out tantalizingly before their eyes by high authority. It is true enough that such returns are possible. In fact, I know many cases where, under especially favorable conditions of crop and markets, the returns an acre have reached, or even exceeded, one thousand dollars.

A neighbor of mine last year, who had a little patch of Gandy strawberries—scarcely more than one quarter acre—received about five hundred dollars for his crop. He sold his berries in the open (Buffalo) market at from seventeen to over twenty cents a quart, and over four hundred of the five hundred dollars was clear profit.

Red raspberries, when the plantation is in its prime, may bring similar profits, and such instances might be multiplied. But it is not safe to calculate on such returns right along.

Doctor Galloway has done some figuring on paper, which is cheap and easy, but usually very, very deceptive. With grapes, dwarf pears, raspberries and blackberries our chances of rotation and double cropping, so as to keep the land occupied from frost to frost, are very limited. With strawberries one crop requires even more than a whole season. Nor would it do to count on five hundred dollars an acre from grapes, dwarf pears, raspberries or blackberries.

An acre of strawberries well taken care of should bring five hundred dollars gross returns, but this only for one crop, and the expenses are often considerable. Then there are the various chances of crop failures, from insect and disease attacks, etc. In short, it is not all honey.

So much, too, depends on judgment and the right management. Hundreds of clerks, bookkeepers, school teachers, small merchants, etc., have been tempted by the glowing accounts of big profits from "a little land well tilled," and I have had many letters from these classes of people stating their desire to give up their positions and invest their small earnings or a little capital inherited in a small farm, and have a share in these big incomes. They forget, however, that even in so promising a field as fruit growing the chances are against the man without experience. It would be an extremely unwise move for any man who has a regular salary that will secure to himself and family even a modest living, and is without practical farm experience, to give up his job in order to make a grab for the "fata morgana" of these alleged big returns in farming.

FARM AGAINST SALOON

Country life is a great thing even if it should secure to us only a moderate income, and not the great sums figured out by Doctor Galloway. Intelligent contact with the soil and the intelligent production of soil products is enobling and conducive to health and longevity, for inseparably connected with it is the enobling influence of healthful surroundings and occupation, of pure air and pure thoughts, of natural and well-balanced food and of Nature's all-powerful tonics as they come direct from the garden and orchard; then last, but not least, of the cheerfulness of the home and the contentment of every member of the family. This life makes men and women useful citizens, good neighbors.

Compare with this picture that of the habitual frequenter of the saloons! The average laborer in the factories near here earns two or two and a half dollars a day, and many even more, or enough to bring up an average-sized family decently and comfortably. Yet some of them carry a considerable fraction of their earnings into the saloons, spending not only this money—perhaps three or four dollars a week—but hours of day and night in surroundings that are anything but wholesome and enobling. The waste of money is the least injury. Weakened stomach, bemuddled brain, generally impaired health and impaired character and reputation are the unavoidable results.

I know a young man (less than thirty years old) who is said to earn ninety dollars a month in railroad work. He does not even pay his board bills. Almost every penny goes into the saloon. One of our saloon-keepers, according to current report, makes a clear profit of four thousand dollars a year.

This young railroad employee (and many others like him, and older men, too) could buy a farm home of a few acres near the trolley line, and easily pay for it within a few years, while he gets ready to raise big paying fruit crops, say an acre or two of berries, such as strawberries, red raspberries, currants, Bartlett pears, or perhaps half an acre of asparagus, etc., and soon have an independent income from this source larger even than the salary he now receives from the railroad.

And when thus nicely started in this new business and better life it would be perfectly safe for him to give up slaving for a corporation, and make himself independent by relying on his farm income and on the chances which an extension of his operations in the same field offers to him.

That is the way, and the only safe way, that I could point out to the clerk, and school teacher, and mechanic, and bookkeeper, to make the change from city life and city work and saloon temptation to farm life and farm occupation. What a happy life the young railroad employee could enjoy if he would take this course. As it is, he may soon fill a drunkard's grave! T. GREINER.

Fig. 3—Plot 1 received ordinary good cultivation and yielded sixty-four bushels an acre
Plot 2 received no cultivation and yielded four bushels an acre

THE COTTON SUPREMACY OF AMERICA

An appropriation of $12,000,000 by the German government—on condition that German manufacturers raise a larger sum—to encourage cotton growing in the colonies of the Fatherland, has called attention anon to the supremacy of America in the production of this great staple. In average years the fields of the United States produce more than three quarters of the cotton crop of the world. We hold our own, although, since our Civil War, many and costly attempts have been made in various parts of Asia and Africa to compete with our cotton-growing states. To-day Texas alone produces nearly as much as all non-American countries combined. During the year ending September 1, 1906, our cotton crop aggregated 11,319,860 bales, of which 6,448,430 bales were exported to Europe. During the same period the East Indies, Egypt and the rest of the world produced 2,562,000 bales. The production of Russia is increasing rapidly. It is true that our domestic consumption of cotton is constantly on the increase, increasing, in fact, at such a rate that the surplus which we export must surely, if slowly, shrink. Soon—in half a century, perhaps—the cotton manufacturers of Europe will have to look elsewhere for their raw supplies, or give up hope of competing in the markets of the world with our cotton.

Speaking of the German scheme, one of the best-known cotton brokers of New York said recently:

"It has taken America one hundred and twenty-five years to perfect its system of the production of cotton. It will probably take the German colonies in Africa twice that time before they attain any importance as producers of cotton. England has been at work on the same problem in India for the past seventy or eighty years, but the results, even under the close supervision of the colonial authorities of Great Britain, have not seriously menaced America's supremacy. And the demand for American cotton to-day promises to exceed the supply. I should not be surprised to learn upon investigation that the effort to subsidize cotton production in the German colonies is some scheme sprung by men who have large tracts of land in Africa to sell. We are not unfamiliar with such methods. The fact underlying the whole situation is that the world's demand for cotton is expanding far more rapidly than the world's supply."

According to the National Bureau of Statistics, following is the export list of cotton and cotton products for the calendar years 1896 and 1906:

ARTICLES	1896	1906	INCREASE
Cotton, raw	$233,412,777	$413,137,936	$179,725,159
Cotton manufactures	19,840,609	42,961,048	23,120,439
Cotton-seed oil	5,735,912	13,993,431	8,257,519
Cotton-seed oil cake and meal	4,873,905	14,165,268	9,291,363
Cotton seed	205,032	245,920	40,888
Cottolene, lardene, etc	.....	4,801,078	4,081,078
Total	$264,068,235	$489,304,681	$225,236,446

The Bureau of Statistics directs attention to the fact that the quantity of exports of raw cotton in 1906 was not as large as in the preceding year—that is, 3,850,229,030 pounds, against 4,137,154,935 pounds in 1905, although, on account of the increased price, the exports in 1906 were $20,537,292 greater in value.

The exports of cotton manufactures, piece goods and others were as follows the past two years: 1905, piece goods $47,652,434, other than piece goods $8,808,566, total $56,461,000; 1906, piece goods $32,282,504, other than piece goods $10,678,544, total $42,961,048.

Special agent of the Department of Commerce and Labor, William Whitlam Jr., who recently reported on the cotton-manufacturing industry of Lancashire, says:

"The total production of manufactured cottons in the United States set against British exports of like commodities will serve to accentuate our neglect of long-standing golden opportunities in foreign marts; a remissness all the more deplorable, seeing that, although we are handicapped by several comparative disadvantages, these are more than offset by the real benefits of a superior situation and certain more economical systems of interior factory operation, which enable our manufacturers to produce many important classes of goods of equal or better quality at competitive prices.

"According to statistics relating to the cotton-manufacturing industry in the United States, extracted from a bulletin recently issued by the Census Bureau, our total production in 1905 was valued at $450,467,704. This amount includes cotton manufactures of every kind, the two principal items being: Cloth, 5,070,028,520 yards; value, $320,382,367. Yarn for sale, 364,634,753 pounds; value, $79,939,687. The total value of the American output was but $3,294,000 greater than the total of English exports in 1905, and $33,600,000 less than the sum of British exports during 1906.

"Further comparison uncovers another interesting result. During each of the two years our leading competitor exported considerably over a billion yards of cloth more than our mills produced for home and export trade combined. In 1905 Great Britain exported 6,196,783,900 yards, and the total production of the United States that year was 5,070,028,520 yards. In 1906 British exports aggregated 6,261,295,000 yards."

TO KILL WIREWORMS

For the benefit of my brother farmers I will give my way of killing wireworms. I had bottom land so badly infested with them that I could not raise half a crop of corn. When I cultivated it the last time, in order to get some return, I sowed buckwheat, and to my surprise have not been troubled with them since. A neighbor's garden was given up to them. I told him of my experience, which he followed, and had no further trouble. This was twenty-five years ago.

A. A. BRILL.

GET THE MANURE OUT

I have found that it is much better to get all the manure out onto the land in the spring than to let it be in the yard or in heaps all summer, to be drawn in the fall.

The latter way may save some work, but there are other points to be considered. The manure loses much of its value if left exposed to the weather all summer.

It is not pleasant getting about the yards if they are covered with manure. Where the manure is in heaps near the stable, it breeds flies, to annoy the cows and the milkers.

In case the barn is near to the house, there is another reason for getting all manure cleaned up. The scent of it is not pleasant, and besides it may leach into the well and cause sickness.

When manure is left in the barn yard the cows walk over or through it, and this is not a help toward getting clean, pure milk.

Besides, it pays in dollars and cents to get the manure where it will be a benefit rather than an injury.

Our clay soils need just this coarse manure to lighten them up, and the sandy soils need it as much to supply humus.

You may have noticed that the man who gets his manure all out onto the land is the one who raises the good crops, while the man who saves labor by letting it rot in the yard, also saves labor when he draws his crops to the barn, and we do not all want to save that way. JOHN UPTON.

The Chase

COMMERCIAL FERTILIZERS

COMMERCIAL fertilizers are very expensive, and farmers should be careful in buying them. In buying one should not be governed by the maker's analysis on the bag or tag, but by the analysis given by the state experiment station. In some states the stations do not analyze commercial fertilizers nor give them any attention whatever. In such cases I would suggest that the farmer who desires to purchase should send stamps to the Rhode Island Experiment Station, at Kingston, Rhode Island, for one of their bulletins, stating name of the brand he expects to purchase.

Many farmers, especially those who have not had much experience, seem to think that commercial fertilizers are a remedy for all the ills that land is heir to, and that the only way to obtain a crop is by their liberal use. Ask a farmer who lives on an old farm what yields he obtained last season, and what fertilizers he used, and more than likely he will say that he used so many pounds of So-and-So's fertilizer on his wheat land, so much on his corn and so much on his oats, and the yields were not anything to brag about, so he will try So-and-So's brand this season. And the poor fellow goes on year after year scraping up a bare living, and, like the man who buys lottery tickets, hoping for better luck next time.

It seems to be a difficult matter to induce farmers to understand that the sole reliance on commercial fertilizers for a crop of grain is a losing proposition. These fertilizers have their uses, but these do not include the growing of crops of grain for profit. As an aid in bringing up run-down land they are indispensable. By their use, sometimes with the addition of lime, a piece of run-down, worn-out land can be brought up into a state of fair fertility quicker than by any other means. The fertilizer being used to obtain a good growth of some nitrogen-gathering crop to be turned under and mixed with the soil as humus.

As I once heard a skilful farmer say to one who was trying to make a living on a worn-out farm: "You might just as well sow your fertilizer on a plank floor and expect it to produce a crop as to sow it on land that is entirely devoid of humus. Land without humus is a dead clod. It can be stimulated a little with fertilizers, but unless you use that stimulant to get humus into it through clover you will find it deader than it was before."

A quarter crop requires just as much work to grow it as a full crop. If one is producing quarter crops he is on the short cut to bankruptcy. He may use the most highly lauded fertilizer on earth and it will only help him downward. The owner of a worn-out sixty-acre farm who is in debt writes me asking what he shall do to save himself. According to his story, he is in bad financial shape, and going from bad to worse. A farmer of this kind is the only man on earth who will stick to a path that leads direct to poverty. A merchant may find himself going down and be unable to save himself because his descent is too rapid, but a farmer can see that his land is becoming less fertile quite a number of years before it fails to produce crops that pay their cost. The usual plea is that expenses have so increased that he must have every pound of produce he can raise to sell in order to keep even and avoid mortgaging the farm. This is, of course, a lame plea, because a man can, if he will, economize in a great many different ways, by simply cutting out things he can get along without.

But when a farm has become so run down that it will not produce crops that pay the cost of growing there is only one thing to do, and that is to begin at once to restore its fertility. I can tell this inquirer, however, that not one man in a dozen who has gotten a farm into this condition ever feels that he can get it back to its old-time fertility. If he feels thus he may as well sell it at once and "move to town!" But if he has any pride, any spirit in him, he will not quit a miserable failure. He will want to retire from the old home place with the knowledge that it is as good or better than he found it. I am aware that he is short of cash, and this will necessitate the strictest economy for a few years.

Then he must bring his farm up by sections, instead of as a whole. He should begin with ten acres, using some commercial fertilizer on that to grow a crop of cow peas. These may be turned under immediately after frost has touched them. If he must use a part of them for feed, he might cut half before frost and make hay of them, then apply to this part all the manure he has made that season. If in addition to this work he can get a few acres into clover he will be making an excellent beginning. He will have use for some commercial fertilizer, but only to secure good crops of cow peas or clover. These two nitrogen-gathering, humus-making crops must be his chief reliance in restoring fertility to his soil. The longer he may be able to let a field lie in clover, the better, and the more fertile will the soil become, for clover is always busy pumping nitrogen—the most costly of all fertilizing elements—into the soil.

It is not such a difficult matter to bring a run-down soil up again as many appear to think. One of the worst run-down places I ever saw was brought up by pasturing six years. A stand of grass and white clover was obtained by the use of a small application of fertilizer, and in sour spots an application of lime, and the first two seasons one animal to three acres was kept on the field. After that one to two acres. Enough of the grass seed ripened to keep the pasturage good, and when the sod was turned down and planted to corn the yield was seventy-two bushels an acre. Without a doubt much of the fertility in this field was brought up from below, for after the corn crop was harvested a fine stand of clover was secured. Not all soils will respond as liberally to fair treatment as this, but all will show a greatly improved condition.

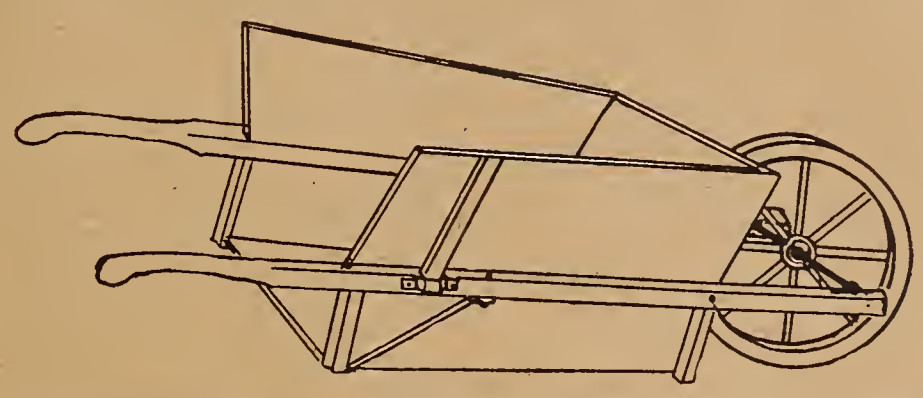
It always "happens" that the owner of a poor, run-down farm is a poor man, and he invariably gets it into his head that if he had sufficient wealth to make a heavy application of some highly lauded fertilizer he could grow a crop that would remove all his financial difficulties at one fell swoop. He must get this idea out of his head, and the sooner, the better.

As I have said, it does not pay to use commercial fertilizers to grow ordinary grain crops. They are merely stimulants, and mighty expensive ones at that, and always leave the soil poorer, unless they are used to produce a nitrogen-storing crop like clover. I would advise this man, and all others situated as he is, to begin restoring the fertility of his land by supplying it with humus and nitrogen through clover and cow peas, even if he is able to set aside but two acres this season for that purpose. He must stop depending on commercial fertilizers to grow his grain crops, or quit.

FRED GRUNDY.

A HANDY LOW-DOWN BARROW

The drawing shows a low-down barrow in sufficient detail to enable any one to make a similar one. We think that, next to the low-down cart, it is the handiest thing around the buildings and garden that we have. Its capacity is more than double that of the ordinary kind, and the load is much more easily put aboard. It has the advantage of getting



into close quarters where the cart would not go, and for use about the feeding alleys, the stable, the lawn and the garden there is hardly anything that will take its place.

For the framework get two pieces of hardwood two by two inches, which will project to form handles on one end, and the wheel frame for the other. At front end of box in rear of wheel a piece of the same dimensions is mortised into the frame to hold it rigidly and to make the front end of box frame. Pieces one and one half by one and one half inches are also mortised into the bottom of the legs, both front and back. These form the foundation for the floor, which should be of three-quarter-inch boards. The legs are mortised into the shaft or handle pieces, the front ones resting about three inches from the ground and the rear ones securely braced as shown in the cut.

If desired the sides may be built from the floor solid and straight up, but we find it better to have a permanent bed from floor to top of handles, with removable side boards to slip on for use in handling bulky stuff.

Heavy material, such as bags of fertilizer, large stones, etc., are easily handled with this type of barrow, as they may be loaded between the handles directly from the ground.

R. M. WINANS.

ROLLING CROPS

Rolling may be called the "poor man's manure." As actually costing nothing but labor, it is more productive than any application at the price. Some chain or brush harrow their hay land and do no more; others roll after the scrubbing, and it is in such fields that the best crops and of superior quality are to be found. The firm surface refines the vegetation and encourages its development, but that is not all; at mowing time the machine runs much more freely over the smooth surface, cuts the grass more evenly and cleaner, and meets with far fewer mishaps than on surfaces that were never rolled. Some argue that it does no good, but that seems to me to be often an excuse for laziness and indifference. Those who are anxious to take all they can off the land, and do nothing in return, are the non-harrowers and rollers, and one can hardly sympathize with them in their shortage. There is a sweetness about a rolled field that is never found on a soft, spongy surface, and whether grass fields are in hay or not, a good rolling is beneficial to all in the spring. Stones are never acceptable on the surface of hay fields, but those who wish to escape collecting and removing them will find the roller beneficial. I do not encourage this, and would advise the removal of all superfluous matter from the surface before rolling.

It is well known to observant cultivators that clover is most partial to a firm surface. Examine a field that is loose and another that is firm, and a novice will readily detect the difference, and declare in favor of firmness. There is a robustness and quality about the latter which stamps it as altogether superior. Almost all plants growing in loose soil are flabby and inferior in their development and they are ill adapted to stand the fluctuations in weather. In times of wet they are apt to become sickly, while in extreme dryness they are severely checked and shrunk; but those with a good hold of firm soil offer resistance to all changes. All grass fields should be rolled in the spring. In coming to grain the same advantages are secured, and I will guarantee a stronger and more upright straw, a larger head and a firmer grain from the rolled than the unrolled fields. The benefit of the rolled surface is experienced agreeably at reaping time, and rolling always indicates the presence of a farmer who is anxious to make the most of everything that will aid his returns, and maintain good order. But while grass may be rolled when the surface is soft with rain, the grain should not be rolled when the soil is sticky. It might then cake and be injurious. Roll when a smooth, pliable surface follows, and all will be well. Wheat may be rolled when about two inches high, but not when it is so tall that it hides the surface. A smooth roller is best for grass, but the ribbed Cambridge roller is the most suitable for grain. This roller is to be found on all large grain farms; and if not on the small ones, do not let this be an excuse not to roll, but use the smooth one. The ribbed roller does not cake the surface like the smooth one, but if the surface is not wet when the latter is used, there will be no danger of caking. It is preferable to roll wheat after it is up and growing than when newly put in. When growing, the plants have settled and the rolling fixes them in a manner which they respond to by increased vigor.

W. R. GILBERT.

THE WORLD'S WHEAT CROP

"Beerbohm's London List," an English commercial periodical, has analyzed the wheat crop statistics of the world for the past thirty years. The entire production of this great staple all over the world for each year since 1874 is as follows:

YEAR	BUSHELS
1875	1,800,000,000
1878	2,000,000,000
1884	2,240,000,000
1887	2,280,000,000
1890	2,264,000,000
1893	2,474,000,000
1895	2,496,000,000
1897	2,281,000,000
1901	2,940,000,000
1902	3,195,000,000
1903	3,292,000,000
1904	3,202,000,000
1905	3,362,000,000
1906	3,500,000,000

According to the figures of the crop-reporting board of the Bureau of Statistics, Department of Agriculture, the percentage of the 1906 crop held on March 1st by American farmers was much higher than in preceding years—28.1 per cent of last year's crop as compared with 22.9 per cent of the crop of 1905 on hand March 1, 1906. Here are the figures by states:

	PER CENT OF WHEAT HELD
New York	39
Pennsylvania	40
Texas	13
Ohio	35
Michigan	28
Indiana	26
Illinois	25
Wisconsin	37
Minnesota	30
Iowa	34
Missouri	23
Kansas	26
Nebraska	32
South Dakota	29
North Dakota	32
California	16
United States	28.1

TURNIP CULTURE

I wish to give my method of planting turnips. My first advice is, get on the turnip field as soon in the spring as it is dry enough, and give it a good cultivating. This will prevent the evaporation of a large amount of water, for if left uncultivated a field will in a short time lose tons of water and the crop be poorer thereby after cultivating.

Get the manure on and thoroughly incorporated with the soil. This will give the weeds a chance to start before the turnips are sown, and much hoeing will be saved.

Keep the ground cultivated until sowing time, and after you think it is in perfect condition cultivate it some more.

Make the drills or ridges as flat as possible, so as to have the plants growing nearly on the level. If you have not a double mold-board plow, use a cultivator with hiller attachment. The cultivator

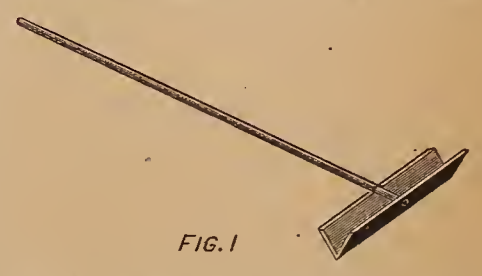


FIG. 1

makes a much nicer drill than does a common single mold-board plow, and, of course, does the work in half the time.

Do not make the drills closed at the top, but leave a small trench in which to sow the seeds. If a turnip sower is used, this trench is unnecessary. In order to make the trench a uniform depth, a marker made of a V-shaped piece of wood (Fig. 1) may be used.

For sowing, a can with a handle made of a fence stay may be used (Fig. 2). Several holes of various sizes may be made in the bottom of can, and the quantity of seed sown may be regulated by plugging the holes not desired for use. While this is quite a speedy way of sowing, it is advisable to use a turnip sower where many roots are to be grown.

FIG. 2

The seeds sown as above are covered by a roller or a light drag made of plank fastened together like the clapboards on a house. This implement may also be used to good advantage in preparing the soil for the crop, as it is a good pulverizer and on many soils does much better work than a roller.

For thinning the turnips we use hoes made as shown by Fig. 3, which is a side view of the blade of hoe. This blade is fastened to the handle at such an angle that when the handle is held by the operator the blade will be at right

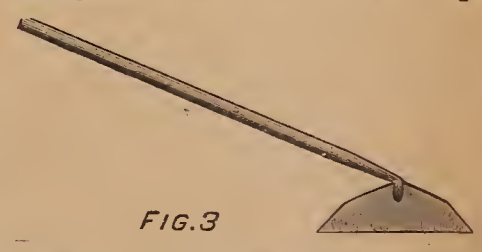


FIG. 3

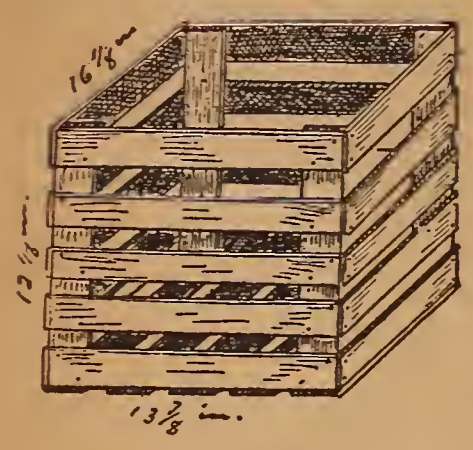
angles to the surface of the soil, thus enabling him to either draw the hoe to or push it from him, with equal facility. The sharp point of the hoe enables you to perform the work of thinning without using your fingers, and saves much back-breaking stooping, besides being much more expeditious than thinning by hand.

J. G. SEMPLE.

Review of the Farm Press

A GOOD BUSHEL CRATE

THE desirable features of a crate for holding potatoes, apples or other produce are lightness, strength, compactness and convenience in handling. If these points be combined in a style or form that will enable us to store them away economically when empty—in the least possible space—we have pretty nearly the ideal crate. Personally I do not care for a "folding" crate. The



number of parts and the cost of manufacturing are increased, and one is likely to find himself unwittingly infringing on some one's "patent." Besides, the folding feature is of no great advantage to the busy man, who has use for the crates nearly the whole year round. A style of crates that any one can build, and which may be stored away, three crates in the space of two, ought to be good enough for the most exacting. We are using such crates at the experiment station, and they give excellent service and satisfaction. They hold a full, rounded bushel, level full, and permit of a cover being nailed on, or of being racked up, one upon another, without crushing or bruising the contents. The cubic contents of such crates, dimensions for making which are given below, are about 2,700 cubic inches, while 2,688 cubic inches constitute a legal or U. S. rounded bushel.

The crates are made entirely of light strips of wood—no solid ends, sides or bottoms being used. Material, exact measure: Uprights or corner posts—length, 12½ inches; width, 2 inches; thickness, ½ inch. Ends, 13½ inches by 2 by ⅜ inch. Sides and bottom, 16⅞ inches by 2 by ⅜ inch.

This makes a crate 16⅞ inches long, 13⅞ inches wide and 12⅞ inches high, outside measure, and the pieces are assembled as I have shown in a diagram presented herewith. These crates can be "nested"—three in the space of two—F. H. Ballou in Rural New-Yorker.

◈

DRY FARMING

Dry farming can be made successful wherever there is rainfall so abundant that, if carefully conserved, it will suffice to grow good crops in normal years. As twelve inches of rainfall are required to pass through the plant, above that which is evaporated from the surface of the ground, it must be obvious at first sight that where the rainfall is limited to twelve inches, or even to fourteen, dry farming must necessarily be a failure in producing crops every year except in spots where by reason of higher lands the field in question has more than the average rainfall of the section in which it is located. If the rain does not fall you cannot conserve it.

For the purpose of giving our readers more definite information on this subject, we refer to the recent meeting of the Trans-Missouri Dry Farming Congress, which was held in Denver in January. Professor Chilcott, the expert of the United States Department of Agriculture in charge of dry-farming experiments, stated at this meeting that the dry-farming country lies between the 98th and 104th meridians and reaches from the Canadian line to Texas.

Mr. Campbell, who is called the "father of dry farming," was present, of course, and warned his hearers against overconfidence, urging them to go at dry farming cautiously, to use only drought-resistant crops, and to let the experiment stations find out in advance the kind of crops and the method of culture that would be adapted to the different sections. He described dry farming as a constant fight against Nature, in which only the best type of men with clear grit could hope to be successful.

We have always maintained that the philosophy of dry farming was absolutely correct, and that it differed in nothing except in the application from the best methods of culture in the humid sections. The only difference betwixt farming in the wet-farming and in the dry-farming region is this: The dry farmer has to put a cistern all over his farm by deep plowing and thorough cultivation. In other words, he must get the soil to as great a depth as possible in such a condition that it will hold all the rain that falls. The wet-land farmer does not need to do that. He is too often troubled with too much rain. But in a dry time both of them must put a lid on the cistern, the one made by Nature and the one made by art, and thus prevent the excessive evaporation of the moisture. The cheapest lid they can put on is a mulch of dry dirt, which simply means keeping the soil on top so thoroughly stirred and the particles so far apart that the water below cannot catch on to the loose lying particles, and thus pass out into the atmosphere.

A thorough study of the principles of dry farming will help the farmer in the humid regions when it is necessary for him to conserve moisture; and a thorough study of the principles of good farming in the humid regions will be very helpful to the farmer when he takes his chances in the dry regions. Neither of them can hope to succeed unless he grows crops adapted to his climate and conditions. It would be folly for the farmer in the district above mentioned to undertake to grow anything except crops which he knows to be drought-resistant.

Nature by the process of selection in the course of the ages has developed grasses adapted to both these conditions. If the wet farmer were to use the grasses that thrive despite the drought conditions in the semi-arid region he would be very likely to find them turning into weeds, and that he could not get rid of them when he wanted to. On the other hand, the man who moves from the wet-farming region need not fool away his time growing grasses, or grains, either, for that matter, which are particularly adapted to humid conditions.—Wallace's Farmer.

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THE SPENCER SEEDLESS APPLE

Probably the best indication of the true value of the Seedless apple is the fact that Colorado growers will not plant it. Fruit growers everywhere have been watching the development of this business with great interest. Here is a letter just received from one of the best authorities in the West:

"There is nothing more to do now other than to sow some grass seed and put up a graveyard stone in memory of the Seedless. We doubt if they have sold sufficient trees to pay first cost of seedlings, to say nothing of hot-air expense. You did it with your little hatchet. People have an idea that anything would sell if advertised. It may have been so thirty years ago, in the days of the Utah Hybrid cherry, a miserable little plum with about as much value as the Seedless. But today fruits at least must have merit and value, and if there is place for another variety, should be better than any other variety of the same season."

The gentlemen who came to see us, and who have abandoned the wild claims made by the old company, evidently regretted that these claims were ever put in print. Unfortunately for them, the apple has been tied to those statements, and we understand that agents still repeat them. So long as they do it is our duty to warn the public. The failure of the wild-cat part of this enterprise is an excellent thing for both growers and nurserymen. There have been fewer horticultural fakes than ever this season.—Rural New-Yorker.

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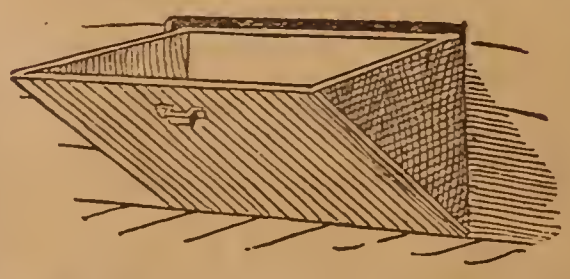
HANDY CATTLE MANGER

The superiority of the improved pig trough which swings outside the pen to be filled, and afterward resumes its place inside, is generally recognized. Our illus-



tration shows a manger on the same principle for cows or horses. It is triangular in shape and is hinged at the point at the bottom just on the edge of the feeding floor. When swung forward into the feeding floor as shown it is in a most convenient position to fill with hay, grain or roots. It is then tipped back and is entirely out of the feeding floor, and in a most convenient position for the animal to eat from. The bottom of the manger is a three-cornered piece of timber. This gives rigidity and prevents there being a narrow space at the bottom, into which an animal could not conveniently reach.—The Leader.

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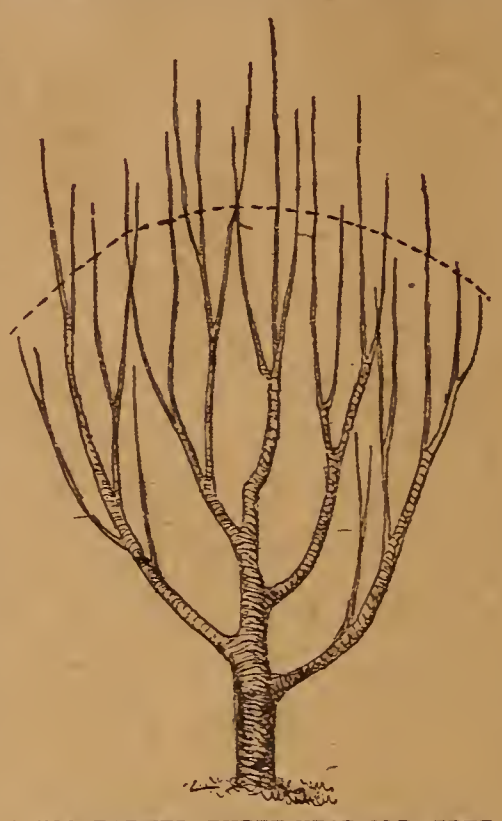
PRUNING APPLE TREES

Each year after planting until maturity the tops of all trees should be cut back heavily and thinned out to let in light. This will cause them to grow stronger and more stocky, thus assisting the tree



WELL-FORMED THREE-YEAR-OLD TREE. DOTTED LINE SHOWS WHERE TO CUT YOUNG GROWTH

to carry a heavy load of fruit, and also to form more fruit spurs to produce it. Trees so handled will be profitable if the location is suitable.—Rocky Mountain Farming.

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FARM NOTES

Broad tires on the wagon saves the turf.

Plow deep according to the character of the soil.

All fertilizers should be well mixed with the soil.

Concentrated foods should always be fed with those more bulky.

By feeding roughness on the farm the fertility of the soil is increased.

The feeding that produces a steady speedy growth is the most profitable.

Good seed, rich soil and proper cultivation are the essence to give growth and harvest.

Success with any crop depends largely upon how the work of planting and cultivation is done.

Excessive feeding does not increase the power of assimilation, and what food is not assimilated is wasted.

Everything which tends to diversify agriculture is of benefit to all who are engaged in that occupation.

While deep plowing increases the productive power of the soil, it should be deepened gradually.

Too much live stock is quite as bad for the farmer as too much land. Do not keep more than can be fed well.

The production of lean meat is the natural growth of the animal, while the laying on of excessive fat is a cultivated tendency.

The market value of food products fed to any animal that is to be eaten begins to decrease as soon as the animal matures.

An excess of any kind of food fed to an animal, beyond its capacity of digestion, and consequently perfect assimilation, is a waste.

The better condition in which farm tools are kept, the less effort is required on the part of teams and on the part of the workman.

Clover is the only crop which leaves the land better than it finds it. Even the ripening of its seeds tends to enrichment instead of impoverishment of the land.—N. J. Shepherd in the Kansas Farmer.

BEETS FOR LIVE STOCK

When we talk of beets nowadays we immediately think of beet-sugar factories, and not live stock—very good institutions in their way, no doubt, but the writer has found his cows, poultry and swine to be profitable beet factories, so much so, in fact, that the feed man hasn't the same interest in me that he used to have.

Yes, I know you will say ensilage is much cheaper. Perhaps it is, but beets added to the ensilage for variety not only increase the milk flow, but are greatly relished by live stock. Furthermore, the surplus can always be sold, and the soil is put in a fine state of tilth by raising a crop of beets on it.

The seed for the winter crop may be sown any time from June until September, depending on the latitude. The soil should be made fine, be free from weeds, and a liberal supply of manure used. If the planting is done during dry weather, the soil should be well fined after planting. From five to eight pounds of seed will be required for an acre. The rows should be three feet apart, and the beets thinned to six to eight inches in the row. For varieties, the writer prefers the Long Blood and Ford's Perfected Half-long. An acre well cared for should average from three to four hundred bushels, and sell for forty or fifty cents a bushel.—A Farmer in the Country Gentleman.

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HIGH-GRADE FERTILIZERS

In the report of the Connecticut Experiment Station for 1906 a very clear statement is made of the advantages in buying high-grade fertilizers. When a man pays money for mixed chemicals he expects to buy as much nitrogen, phosphoric acid and potash as he can for a dollar. The following statement, page 48, shows how we can get extra value for our money:

"The table given below, however, has no connection with any station 'valuation,' but is calculated wholly from the market prices and the actual composition of the several fertilizers. Taking the average composition of growths of about a dozen fertilizers, the table shows how much plant food can be bought for thirty dollars in each of these groups:

First	15	samples	in	tables	73	188	111	$32.48
Next	15	do.		do.	57	161	129	33.70
do.	13	do.		do.	54	168	102	32.77
do.	11	do.		do.	47	182	90	32.64
do.	12	do.		do.	44	180	97	32.52
do.	10	do.		do.	38	222	60	28.18
do.	17	do.		do.	37	201	54	29.80
do.	12	do.		do.	23	279	53	25.00

"This statement shows:

"1. That the prices of commercial fertilizers bear no fixed relation to the amount of plant food in them; therefore, no fixed relation to their value.

"2. That, as a rule, the low-priced superphosphates are the least economical to buy.

"Thus the dozen fertilizers which cost about twenty-five dollars a ton did not give one third as much nitrogen nor half as much potash for the same money as the fertilizers which cost thirty-two dollars and fifty cents a ton. The larger amount of phosphoric acid in the lower-priced goods is chiefly in insoluble and comparatively inert form."

Another point that is often brought up is made clear on page 69 of the same report:

"The prices of factory-mixed goods bear no close and uniform relation to their content of fertilizing elements, and the 'cheaper'—that is, the low-priced—are in most cases the most expensive. Thus in one group of fertilizers selling at an average price of thirty-six dollars and fifty cents, the buyer gets, for each dollar paid, more than twice as much nitrogen and potash and as much phosphoric acid as in another group costing four dollars less a ton. To this it has been objected that these comparisons and valuations assume that the nitrogen of the different mixed fertilizers is all in quickly available forms; that it is quite possible for the manufacturer without detection to put in inferior or worthless forms of nitrogen which are very cheap and will raise his valuation, and it is freely asserted that this is sometimes done. Of course, the only perfect protection against such imposition is the purchase of raw materials, which can be more easily examined as to the quality of their nitrogen, and the home mixture of fertilizers. But assuming that some mixed fertilizers contain inferior forms of nitrogen, it is fair to suppose that the low-grade and low-priced goods will be more likely to contain such a mixture than the more costly brands."—The Country Gentleman.

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COW PEAS WHERE THEY THRIVE

H. O. Calhoon, who farms on the southeastern slope of the Ozarks in Missouri, is making considerable out of cow peas. He has sown this crop for a number of years with good satisfaction for hog pasture and for hay. As the seed is usually high in price, he concluded last year to raise some. The sowing was done in drills about thirty inches apart, and they were cultivated with narrow teeth so as to leave the ground level. He cut the peas with a mower, two rows at a time, when about all the pods were ripe. A grain board was attached to inside end of cutter-bar in such a way that vines were left in a narrow swath between the two rows. Thus the horses and wheels of mower were kept from mashing the pods. The peas were cured in the swath, then raked with hay rake and shocked. As no power hullers were to be had, our friend got them thrashed in a corn shredder. The peas were cracked but little, and they had over one hundred and fifty bushels on fourteen acres, although the crop had been much injured by rain when in shock. He thinks nearly half of them were lost. He reports getting ten dollars a ton for the shredded hay, and says the pea stubble was as fine a seed bed as they ever sowed wheat on. The plan of thrashing with a shredder was learned from the "Practical Farmer" some years ago, and but for this hint Mr. Calhoon says he would have been in a fix.—T. B. Terry in the Practical Farmer.

STOCK NOTES

The horse that is allowed to go too long with old shoes on is liable to contract corns and other foot troubles.

It is not good economy to buy light milk pails or pans or cans. Get good, heavy tin ones. They will last much longer and pay in the end.

A whole sod, given in the stall once each week, will be eaten, roots and all. This is most valuable to sweeten the stomach. Give it now after a long winter of dry and heating foods.

Once each week every horse should have a big, warm, well-steamed bran mash, combined with a pint of flaxseed jelly and one pint to one quart of molasses.

The working horses ought not to be checked so they cannot lower their heads easily, or work the collar fronts as they stand still. A perfectly fitting collar, that will not move while walking is essential.

The star cow of any man's dairy is the one that gives the most and the best milk, and keeps it up the longest. By this test every one of us may test our herds. And when we have found out which one is the best, let's try to bring all the rest up to her standard.

The 10,000,000 cows in this country produced 1,500,000,000 pounds of butter last year, or an average of 150 pounds each; but since no small part of the milk product was consumed direct, the cows that are engaged in butter production must be credited with a higher average than 150 pounds.

It is not very pleasant to have the latch of the barn-yard gate lifted out of place and the cattle get out. Sometimes the cows will lift this latch with their horns. Put an inch hole through the latch and the slats of the gate, and make a pin to fit it. Keep that pin in and the cattle cannot let themselves out.

Nearly every farmer has, or should have, a hog crate. The greater number of these are made to open only on one end, and it takes a great deal of punching and poking to get the hog out; but by having a slide door in each end, all this trouble may be avoided, as you can let the hog out in whatever direction he seems most inclined to move.

In one of our pastures there was a low spring that never had been of much value to us because the cattle could not get at the water. By digging down below the frost line, and laying a pipe a few rods down the side of the hill and setting a trough there, we fixed it so that now that spring is one of the most valuable things on the farm. It was hard digging, right in a layer of grout all the way; but it paid well, after all. V.

The cow can bring profit only through her mouth; hence, it pays to feed her liberally what she will profitably use. Vary her rations according to her disposition; that is, if she has a tendency to grow too fat, feed her a ration to counteract the tendency, and vice versa, although she should remain comparatively thin and put all of her energy into the production of milk.—The Farm Journal.

Review of the Farm Press

FANNING MILLS ON THE FARM

The natural thought would be that every farmer would look upon a fanning mill as an indispensable adjunct to his farming. Nevertheless, the fact remains that on the majority of the grain-growing farms of the Northwest there are no fanning mills. This means that before all the farms are thus equipped, from two hundred to three hundred thousand fanning mills would have to be sold in that territory.

To a farmer living East it seems incomprehensible that any one should think of growing crops without a fanning mill. It is imperative to sow clean seed. The only way to insure this is for every farmer to clean his own seed, which means that he must have a fanning mill.

When the importance of the fanning mill is considered it would seem that it is not putting it too strong to say that the man who sells fanning mills is engaged in a beneficent work, even though when thus engaged he has no other thought than that of earning a commission on his sales. The cost is so small that a fanning mill is within the reach of every farmer.—Prof. Thomas Shaw in New England Homestead.

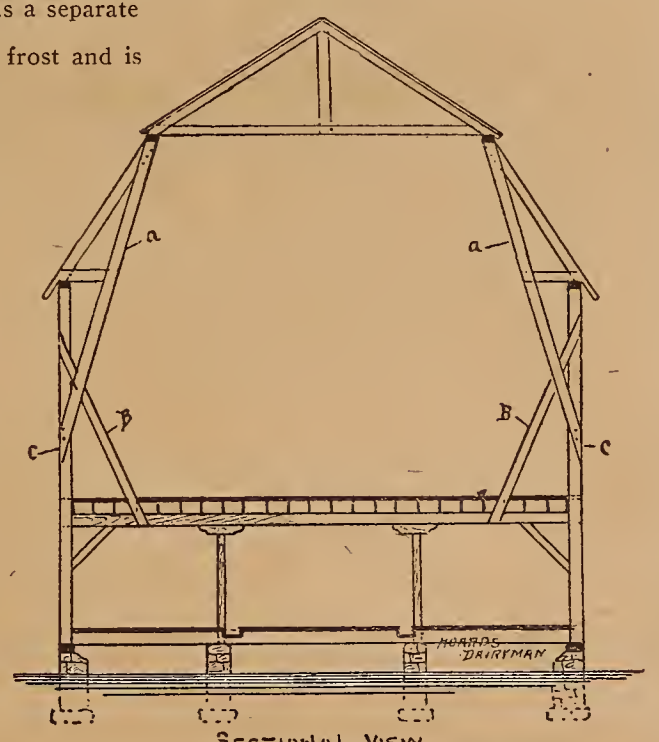
A NEW YORK BARN PLAN

The drawing and description of the plans herewith presented were furnished us a few years ago by one of our New York subscribers. The following is an extract from the description sent us:

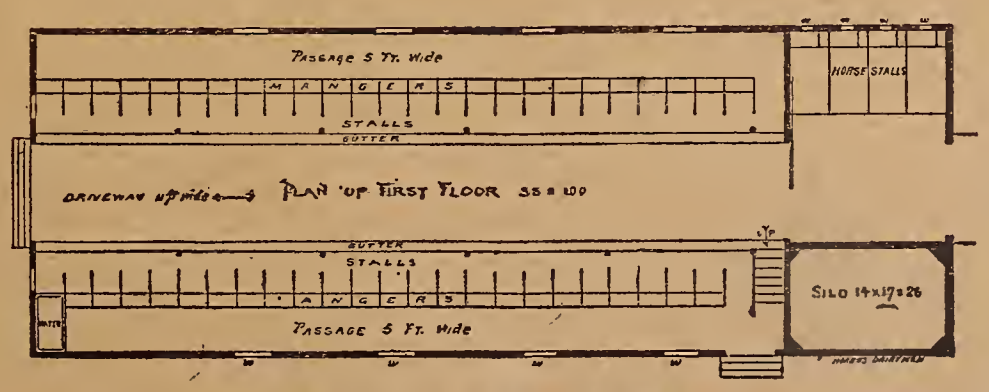
The plan of this barn is laid out for fifty cows and four horses, allowing three feet for each cow. A driveway of eleven feet is allowed for cleaning the stable. The cows head out and are fastened by the swinging chain stanchion. Cows are separated from each other by partitions from front of manger running half way to the gutter, but each cow has a separate manger two by three feet.

The wall runs down below frost and is laid in mortar a foot above ground. Earth is filled in to top of wall inside of stable. The side of barn is of two thicknesses of matched pine with paper between. The height of the ceiling is eight feet and the floor above is laid with matched boards. The horses are separated from the cows by sliding doors. The cow stable is lighted by ten windows two by four. Water from a spring is brought to a tank inside of barn, but not taken to mangers.

The sides of the stable are supported by two-by-seven-inch studding. The posts to barn are six by six inches, sixteen feet long, commencing on second floor. This is the largest timber in the barn, except the girders above stable, which are eight by twelve. The



SECTIONAL VIEW



A GROUND PLAN OF A NEW YORK BARN

sills are two pieces, two by seven, and the plates of stable and at the eaves are two pieces, two by six, spiked together.

The braces, a a, are four by six and b b are two by eight. Of the latter, there are two on each side of the bent, on both sides of posts and girders. All braces are well spiked except at c, where bolts hold the braces to the posts.

It is an easy matter to make a barn shorter from these plans if not so much room is wanted; in other words, this plan can be modified to suit the requirements of a dairyman keeping from ten to fifty cows.

While the octagon silo gives good satisfaction, we believe the round structure makes the best silo.—Hoard's Dairyman.

THE BACON HOG

The experience of the writer deals with the production of the lard hog, and the suggestions as to methods are from that standpoint. Yet he realizes that there is a distinct field for the bacon hog. The time is past for belittling his type. All hogs cannot be grown in the corn belt. Nor is it likely that the bacon hog can be produced with as much profit in that portion of the country as the lard hog. It would seem that the bacon hog properly finished should be worth more pound for pound than the lard hog. The United States does produce some bacon; in fact, considerable of it is shipped abroad. However, the quality is hardly up to that of some of our bacon-producing competitors. The average valuation of the bacon shipped from our country to the United Kingdom from 1888 to 1902 was $8.07 per one hundred pounds. That of Danish bacon shipped to the same market for the same period was $11.83 per one hundred pounds, a difference of $3.76 in favor of the foreign product, or forty-six per cent. This seems to show that the British people are willing to pay well for what they like best. It is claimed that Canadian bacon is also rated higher than our own. The most of the bacon from the United States is too soft, which is probably due to the fact that many try to finish the bacon hog as they would one of the lard type. Too much corn is fed to produce firm flesh. Barley is the best bacon-producing grain we have. Where this grain is an abundant crop our people should feed for bacon of the best quality. An abundance of skim-milk fed in connection with a limited amount of corn also produces superior bacon. Oats, peas and sugar beets are excellent feeds. There should be more attention given to distinct bacon breeds, for it seems that farmers in the North are slow to cut loose from the lard type of hog. It is scarcely a secret that the lard type pleases the eye of the average farmer better than the bacon type does. One reason for this is that the former has been developed to a higher degree of excellence. However, this objection will vanish when farmers make big money out of the bacon hog.—Robt. L. Dean in the National Stockman and Farmer.

The Farm and Fireside family—the people who read it every week—numbers nearly three millions of America's best farmers. We are very proud of this big family of ours, because it is the best farm family in the country. We know, too, that you are glad to belong to it.

DRAGGING ROADS

The following points should be borne in mind when dragging a road: Make a light drag, which is hauled over the road at an angle so that a small amount of earth is pushed to the center of the road. Drive a team at a walk, and let the driver ride on the drag. Begin at one side of the road or wheel track, returning on the opposite side. Drag the road as soon after every rain as possible, but not when the mud is in such a condition as to stick to the drag. Do not drag a dry road. Drag whenever possible at all seasons of the year. If a road is dragged immediately before a cold spell it will freeze in a smooth condition. The width of a traveled way to be maintained by the drag should be from eighteen to twenty-four feet; first drag a little more than the width of a single wheel track, then gradually increase until the desired width is obtained. Always drag a little earth toward the center of the road until it is raised from ten to twelve inches above the edges of the traveled way. If the drag cuts in too much, shorten the hitch. The amount of earth that the drag will carry along can be very considerably controlled by the driver, accordingly as he stands near the cutting end or away from it. When the roads are first dragged after a very muddy spell the wagons should drive, if possible, to one side until the roadway has a chance to freeze or partially dry out. The best results from dragging are obtained only by repeated applications. Constant attention is necessary in order to maintain an earth road in its best condition.—Frederick Skene in Rural New-Yorker.

FARMING OF THE FUTURE

"Appleton's Magazine" paints just about such a picture of the changes which the future will bring us in our farm life and operations, as a result of the cheapening of fuel alcohol, as I had seen in my dreams. It says:

"The reason why no smoke comes from the chimney is because the housewife is getting dinner on a stove burning alcohol—merely a turn of the valve controlling the supply and the contact of a match flame; that's all. Here and there are lamps which, when lighted at dusk, give such a brilliant yet even illumination that the ordinary gas jet is a mere glimmer in contrast. Spirit furnishes the light. Over in the barn stands the familiar fanning mill for cleaning grain, but no one turns the crank that revolves its blades. The farmer simply throws over the handle of an electric switch, and the mill begins humming a merry tune in unison with the clicking of the feed cutter, which is also actuated by the same invisible force. . . . . If we happen to be on the place at butter-making time, we see the cream separators and churns doing their work independently of the housewife, who only looks into the creamery now and then to see how things are getting on. This farmer may have horses, but not for field work, because he finds he can do so much more with motor machinery at the same expense. Even his plows and cultivators are pulled by the traction engine, with which he runs his harvester and thrasher. Here the engine must communicate its power directly to the farm mechanism; but if he desires, he can operate the fanning mill, the separator, and the other appliances in the house and barn from one source of power, using the electric current which he can readily generate with his little alcohol engine."

In consideration of all the changes that the past ten or a dozen years have wrought in all industrial lines, and in farm life as well, who will say that all this is wholly a "pipe dream?"

I am still looking for some important advantages and changes in some of these respects from cheap fuel alcohol, and long for the time when we can utilize for heat, light and power production all the great quantities of inferior products now going to waste on our farms. Thousands upon thousands of bushels of apples and pears have been allowed to rot under the trees year after year alone in my immediate vicinity. Will it pay to utilize such stuff in this way or not?

G.

The next time you go to town you can do a big favor for Farm and Fireside with very little extra effort. Just get a postal card and write on it the names and addresses of five or ten real farmers who you think would be interested in Farm and Fireside, and who do not already take it. We will send them a sample and try to get them to join the Farm and Fireside family. By doing this you will both help your friends and help us reach the "million mark."

Gardening

BY T. GREINER

THE IRISH COBBLER POTATO

THIS, with its twin brother, the Eureka, has already been referred to in these columns as the "business early potato." R. P. Armistead, a Tennessee reader, writes me about it as follows:

"The Eureka is the Irish Cobbler under a new name. I first bought the Irish Cobbler in 1895 from a Philadelphia seedsman, the first to list them so far as I know. Two years ago I bought some seed of it in Rochester, New York. They were the same potato. The Cobbler is pure white, skin smooth, in shape resembling Rural New Yorker; eyes strong and deeply set; vines of short, upright growth; quality fine, dry and mealy; time of ripening about the same as Early Ohio; yield large; in fact, the best of all the early potatoes, with few small tubers. The Cobbler is the best early potato I have found so far."

My experience exactly. It is the business early potato, whether you plant it as Cobbler or as Eureka.

TOMATOES IN TEXAS

L. C. Williams, a Texas reader, says: "In this part of Texas tomato seed is sown in beds in December. Before it is time to set them out they get quite large, coming up to the covering. If the vines were topped or cut back, where they come in contact with the top of the frame, would it injure them? We do not stake or prune tomato vines. Is it not a fact that some gardeners claim that topping tomato vines will make them more fruitful?" The answer is easy. By all means top them. Whenever my tomato plants in the greenhouse grow up taller and more spindling than I like to have them, I simply head them back. It does not injure them in the least, but only keeps them within bounds, and makes far better plants for transplanting than if left to grow up tall and spindling. I grow all my early tomato plants in separate boxes, or sometimes in flats, giving them plenty of space, so as to keep them in good shape, short and stocky, and often I can have them perfect without topping. But when they are in the least crowded, or when they are grown in beds to be taken up from the soil for transplanting to the open, they are almost bound to run up too high, and they should be headed back promptly, long before they reach the top of the frame. I like to have my tomato plants stand up and remain standing up straight from the first day they are set out in open ground. The tall, slimsy things will wilt and fall over, requiring a number of days, perhaps, before they get accustomed to the new conditions and get a new hold on the soil that enables them to stand up stiff and straight. Early heading back may favor early fruitfulness in this case.

STATION NOVELTIES

The New Jersey station has for some years been engaged in breeding up new crosses of various kinds of vegetables, and in distributing to applicants in that state some of the most promising of these novelties for testing. This year the station offers for distribution six kinds of new sweet-corn crosses, three kinds of tomatoes (Magnerosa, Marvelosa and Station No. 4), a new Long White—New York Improved eggplant cross, the Station Winter Squash No. 2 (Delicious Bay State cross) and two kinds of Chinese vegetables of the cabbage family. Only one kind of each class, however, is to be sent to each applicant.

Undoubtedly these novelties will prove interesting, and New Jersey gardeners should avail themselves of the opportunity to share in this free distribution. It is of vastly more value than the free distribution of ordinary standard varieties of vegetables by the national government—by order of Congress.

FERTILIZERS FOR CELERY

F. G. D., of Peoria, Illinois, asks me which is the best commercial fertilizer for celery, and how much should be applied to the row of one hundred feet. The ground is good corn land, but not rich enough for celery. Celery wants plenty of humus in the soil. I am afraid that on ordinary "good corn land" the chances of securing the heavy growth of celery needed for best success will be rather slim when commercial fertilizers are the only manure to be applied. Mr. Garrahan, of Pennsylvania, uses a ton of high-grade, complete fertilizer to the acre, besides forty tons of stable manure. For any one not fully acquainted with all the niceties of the selection and use of chemical manures, the only safe course to take is to use a complete commercial fertilizer having a guaranteed analysis of four to six per cent of nitrogen, eight to ten of available phosphoric acid and six to ten per cent of potash. I would under all circumstances try to get at least some stable manure or compost, and not depend on the fertilizer alone. Sometimes you can get a supply of most excellent manure from your nearest blacksmith shop—the sweepings of the floors where horses are shod. Or you may be able to secure it from some one in the nearest village or the outskirts of cities where horses are kept, that make more manure than the owner can use for his small garden. Open a furrow for each row, and partly fill it with fine manure. Then mix this with the soil, running a one-horse cultivator several times up and down the row, and finally fix it up for setting the plants by just leaving a slight depression. The commercial fertilizer, at the rate of 20 pounds to the one hundred-foot row, may be scattered along the furrow and cultivated or raked in. Under some conditions the use of a few (say three or four) pounds of nitrate of soda alone, or of muriate of potash alone, or of both, will give all the results that can be expected from the complete manure.

WIREWORMS IN MELON PATCHES

An "American Agriculturist" reader says that wireworms are the hardest customers to kill he ever came across. To which the editor replied: "These pests can be successfully destroyed by burying a medium-sized potato just under the ground in or near a hill containing the seeds of the melons. The wireworms prefer the potatoes and will bury themselves within it. Over small areas these can be dug up and destroyed every few days until after the vines get a fairly good start.

This is well for a spring treatment. For wholesale destruction, late fall—as near to the arrival of real winter as possible—is the best time, and deep plowing and thorough harrowing is the best means."

NIGHT SOIL AND ASHES

"Is it a good plan to use night soil and ashes on the garden? The night soil is mixed with a small portion of horse manure." This question comes from a subscriber in Canada.

Night soil is a good manure—too good to be mixed with wood ashes, which would drive off a large portion of the ammonia (nitrogen), although it may be mixed with sifted coal ashes without detriment. The addition of horse manure is of advantage.

I would not care to apply this material in its fresh or raw state to a garden, however, especially when I expect to raise lettuce, radishes and similar crops, or even berries.

If the night soil is properly composted with absorbents, loam, muck, chaff, coal ashes, horse manure, or litter of almost any kind, it will in a comparatively short time become of earthy character and appearance, and entirely inocuous. I then would not hesitate to apply it for any garden crop. But if you desire to apply wood ashes also, apply them separately, or mix only small quantities with the night soil and comparatively large amounts of muck soil or old sods.

FORMULA FOR BORDEAUX MIXTURE

Dissolve four pounds of blue vitriol (sulphate of copper) in ten gallons of water in a wooden or earthenware vessel. As this substance dissolves very slowly in cold water, and solutions of it are very heavy, it is well to suspend it near the top of the water. (It dissolves more quickly in hot water.) In another vessel slake five pounds of good fresh quicklime in ten gallons of water. When the mixture is wanted, pour the blue vitriol and lime slowly (at the same time) into a barrel containing thirty gallons of water, stirring all the time. When thoroughly stirred the mixture should be of a clear, sky blue color. After being mixed for a day or two the mixture loses much of its strength, so it is well to use only that which has been mixed for a short time.

SALT AS FERTILIZER

A reader in Ohio wants to know how much salt is required to the acre for fertilizer. Not any, I should say. I have never yet seen any reason why I should use salt in my garden or fields. It does not contain anything that is of value as plant food, and its only effect could be indirect, at best. But when we use potash in the muriate (chloride) form, as we frequently do, we get all the effects that we could possibly get from salt applications, and those of the potash, a real plant food, besides.

MELON CULTURE

Probably no where in the United States has melon culture been brought to a higher state of perfection than in eastern Michigan. Nowhere can more delicious melons be found.

SOIL

Any land that will produce a good crop of corn or potatoes will grow good melons. The ideal soil is, however, a black sandy loam.

We have experimented with every kind of fertilizer in every conceivable manner, and sometimes with disastrous results. We have now reached the very acme of perfection in every sense of the word, and rest satisfied. We use squares of inverted sod packed in a cold frame without any under heat, which, in our opinion, is injurious. The most important feature with us in growing is the kind and superior quality of fertilizer used. This is the formula for mixing (the old gardener and practical chemist will see at once just why it cannot be excelled for melon culture): One barrel of liquid manure, one bushel of hen manure, a handful of salt, one half pailful of phosphate. In setting the plants we apply two to three quarts if soil is poor.

Our liquid manure is a year old. We have a cistern dug adjacent to the manure pile at the stable, and the drainage from the manure runs into it and ripens, as we term it.

The addition of salt gives the manure the very highest value. The addition of ashes, as some have recommended, impairs the value greatly, by dissipating or setting the ammonia free. Wood ashes should never come in contact with hen manure.

VARIETIES

For early crop we find the early Hackensack the most desirable. For main crop, the Osage is the most popular. Last year they were preferred to any other variety. The Petosky, Hoodoo, Paul Rose—all having Osage characteristics—are prime melons that cannot possibly be excelled. A new beginner should study the demands of the home market, that may require the green-flesh varieties. In any event, it is best to put in "some Osage."

We do not wish to make any invidious comparisons. There are many excellent varieties, but some of them for some reason blight badly, crack open and rot, as every old grower knows.

MARKETING

Unfortunately, there are too many half-ripe melons put on the market. Not over half of them are really prime melons. Some growers who will not, for any consideration, sell poor melons generally get double price for their product, when they become known, to merchants who cater to first-class trade. There is no crop raised that pays better if handled as it should be.

A. C. MONROE.

AGRICULTURAL PROGRESS IN EUROPE

ROADSIDE FRUIT CULTURE

From the reports of many recent interesting happenings of an agricultural nature in Europe we select these two as being of particular interest to American farmers.

The German province of Hanover, has many fruit trees along its country roads and highways. The American Consul at Hanover City (Mr. Jay White) has the following to say on this subject:

"The province owns 1,976 miles of highways, along which there are 175,794 fruit trees. If these were set out 80 to an acre they would form an orchard of about 22,000 acres. Where the temperature and other conditions have been thought favorable pear, cherry, plum and apple trees have been set out on either side of the public ways. Apple trees have proven the most practical and have been used to the greatest extent. The custom dates from the early part of the last century. During the past decade it has been found necessary to replace some of the old trees, and many more must be substituted in the near future. The gross provincial income from the fruit harvested has averaged $22,495, though in recent years it has often run up to nearly $40,000. In the near future many of the districts will also receive considerable income from these sources. The statistics indicate an average gross income from each tree of 12.61 cents, about half of this amount being spent for maintenance. In 1895 the province purchased an estate of 403 acres for the purpose of growing nursery stock for the highways. Small fruits and those intended to be trained on trellises are also cultivated, with the object of furthering fruit culture and improving the varieties. It is the intention that the nursery shall be used to demonstrate to fruit growers and farmers the best manner of treatment and indicate the varieties that under certain conditions give favorable results. At the present time the estate is cultivated with 195 acres of timber land, 42 acres of nursery, 10 acres of park, 8 acres of asparagus, 48 acres of general cultivation, 45 acres of grass and 12 acres of moorland. The total cost up to May, 1903, amounted to $23.697. In all 40,894 trees, valued at $10,575, have been issued to be planted. The expenses in excess of the sums charged off for trees, etc., amounted, with four per cent interest, to $13,504. The total stock in different stages of growth amounts to 106,574 trees. The profit per tree seems very small, but shade is afforded in summer, the roadbed is freer from dust, and other benefits follow."

AGRICULTURAL CO-OPERATIVE SOCIETIES

It may be of interest to those who are watching the growing tendency of farmers to organize to note the fact that within the past few weeks all the agricultural co-operative societies of Germany, Austria, Italy and Switzerland have united to form the "International League of Agricultural Co-operative Societies." More than 24,000 separate organizations are included. The central bureau or head office is at Darmstadt, Germany.

CURRANT BUSHES AND SCALE

It is true that currant bushes, like anything low or near the ground, are easily amenable to treatment for disease or insects. Yet I have nothing on the place that seems to be more bound to be infested with San José scale than my currant bushes, with the possible exception of Japanese quince, which is also particularly subject to scale attacks. By spraying the bushes occasionally with soluble oils, whaleoil-soap solutions, or even clear crude petroleum, I have managed to keep the bushes alive and raise fairly good crops. But the scale soon reappears, calling for renewed treatment. My one $1.00 Chautauqua climbing currant-bush had a few nice clusters of fruit this year; but the scale has nearly ruined it. It was sprayed with whaleoil-soap solution. Apparently nothing short of clear petroleum or lime-sulphur wash will permanently protect it.

ONION SEED FOR FALL SOWING

For a number of years I have sowed White Portugal and Prizetaker onion seed in open ground early in August, so as to have good green onions early in spring. The Prizetaker has sometimes, the Portugal nearly always, wintered without loss of plants. The problem, however, has been to have good live seed at the time when we want to sow it. We cannot buy fresh (same season's) seed at that time. I have tried to raise it by planting selected bulbs five or six inches deep in the fall.

The past season I gathered a quantity each of Portugal and Prizetaker seed from bulbs thus planted and wintered outdoors. It is good seed, but did not get ripe and ready for sowing until about September 1st, or just about four weeks later than I wanted to use it. The Portugal will come handy for sowing this coming fall (August 1st), while part of the Prizetaker has already been planted under glass, and the balance will be kept for outdoor sowing.

At any rate, when we wish to sow onion seed early in August we will have to make use of seed grown the year before. Several times, when I tried to buy larger quantities just at the time that I wanted to sow the seed, I found that some seedsmen were without a supply of it, and I had to hunt around quite a little to find the quantity I wanted. It can often be had at an off price at that time if some seedsman has a lot left over that he is anxious to dispose of before the new seed comes in. But the only safe, and usually best, way is to buy the seed along with the general supply of garden seeds, during the winter or very early in spring. Then we are sure of having it on hand when wanted. It can be kept in tight paper bags or in glass cans or other tight receptacles, and will grow in August just as well as in April.

Do you realize that our FARM AND FIRESIDE family is larger—far larger—than any one army that ever existed? Neither Alexander, Cæsar nor Napoleon could ever boast of such a host of friends. Don't forget our war cry: "On to the Million Mark!" We want all our family to help us by each getting at least one new subscriber and keeping his own subscription paid in advance.

Fruit Growing

BY SAMUEL B. GREEN

MORE ABOUT DEWBERRIES

In a recent number of the Farm and Fireside a correspondent spoke of his non-success in getting berries from his Austin dewberry plants.

I would like to tell how I get lots of fruit, and have no trouble from winter-killing of vines. I raise the Lucretia. It is all right.

Around my garden I have a woven-wire fence, with posts about ten feet apart. Two feet from every post I set a dewberry plant, and tied the runners to the post, cutting them off at the top. The first year I got but few berries, but the plants threw out a lot of strong runners. I let them lie on the ground all winter. In the spring I cut away all the old canes, gathered up the new ones and tied them as before.

In this way I always get bountiful crops year after year. In fact, they are growing better as they grow older. They are grown in rich garden soil.

Massachusetts. Wm. F. Henderson.

STRAWBERRIES FROM SEED

I have a nice showing of strawberry seedlings secured from seed of selected berries of the crop of 1906.

When fully ripe the berries were put into a bag made of cheese cloth, and crushed; the bag was then immersed in water and squeezed until there was nothing left in it but the seeds, the hulls and some stringy pulp. This mass was then rubbed well in about six times its bulk of sharp sand and then sown in a somewhat shady spot, the soil being loamy.

In about two or three weeks the seed germinated, and hundreds of little plants pushed out and grew nicely, and are now covered with light strawy manure. For fear even this light covering, in case of deep, heavy snow, might smother the plants, a little light brush was spread over the bed before the manure covering was put on.

New York. E. H. Burson.

QUINCE BUSHES NOT BEARING

F. B. J., Junction City, Ohio—I do not know why your quince bushes do not bear, if they are of proper age. Their barrenness might be due to a variety of causes. If you would let me know whether they flowered in the spring I could perhaps give you a more definite reply. Also let me know the varieties.

I do not think the application of salt about the roots of your quince trees would improve their bearing, and yet it might assist. If you wish to apply salt to the bushes it is best to apply it on the top of the soil, as it is easily dissolved and works down.

SCUM ON MOLASSES VINEGAR

In regard to white scum or mold forming on molasses vinegar, my mother was an old hand at making vinegar, and she said if it ever got that white scum or mold on it, it might as well be thrown out, for no doctoring you could give it would help it or cause it to work to make vinegar. I have tried it enough myself, so I know that to be so. I write this for the benefit of those who are trying to make their own vinegar.

S. F. Hoskinson.

TOP-WORKING ORANGES

Where oranges are grown in pots in the house they may be budded whenever they are growing vigorously. This is done for the reason that seedling oranges seldom show flowers until they are quite old, and I have known of their being grown on in pots for perhaps fifteen years without flowering at all. On the other hand, if they are budded with some of the early-flowering kinds, such as are commonly cultivated, they will generally flower the following year. One of the most satisfactory little oranges for growing in the house is a kind known as Otaheite. This orange will flower in a six-inch pot and produce several fruits each year if properly cared for. It may be obtained from most any florist or plant dealer, and for house culture is far ahead of ordinary kinds.

CHERRY TREE BARREN

E. G., Coraoplis, Pennsylvania — It would be a mere guess for me to attempt to say why it is your cherry tree flowers in the spring and does not fruit, unless I could make a careful examination of it. There are a number of causes that might produce this result. Sometimes the flowers of cherry trees do not produce pollen that will make them fruitful. In such cases the growing of other trees near by might overcome this difficulty, but I take it that in your case this is not the trouble, since the cherry tree near by flowers at about the same time as the one that is barren. It is quite possible that your barren cherry tree is a seedling, in which case the flowers might be lacking in pollen, or possibly even the pistils themselves abortive.

CURRANT CUTTINGS

C. L., Jamestown, New York—Probably the best way for taking care of the currant cuttings which you have just received would be to lay them on the surface of the ground and cover with ashes, sawdust or similar material. This is far better treatment than putting them in a house cellar, as in an ordinary cellar they will probably start into growth before the ground is ready to receive them. It does not matter what is used to cover them with on the surface of the ground, and if you have a sand bank in which you can bury them conveniently, that would be excellent treatment.

As a rule, however, we prefer to make up currant cuttings in September and plant them at once in the open ground. In such case they should be made up about eight inches long and at least seven inches put below the surface of the ground. They should be packed in firmly. If treated in this way they will have quite a lot of small white roots well started by the time winter sets in, and will make a quick growth in the spring.

However, currants may be grown from such cuttings as those you have, or even from cuttings made in the spring.

ROSES FROM CUTTINGS

L. H., Pawpaw, West Virginia—Some kinds of roses, as Mabel Morrison and Baroness Rothschild, are started with difficulty from cuttings of any kind. Baltimore Belle and Prairie Queen and some other varieties, however, may be successfully grown in this way from either hard or soft wood cuttings. Probably the best way to manage these is to make up the cuttings in autumn; but they may be successfully made up at any time before they start into growth in the spring.

THE PROMISE OF A CROP

Care should be taken in any case, however, to have the cuttings well calloused before they are planted out. The best way to secure this is to put the cuttings in a cellar or cold pit in autumn, when it will generally be found that they are well calloused by planting-out time in spring. If the cuttings are not made up until the latter part of winter they should be placed in a hotbed with gentle heat early in the spring as soon as growth begins to start. Treated in this way and the tops kept cold—that is, the sash being kept off of them except in wet weather—the cuttings will generally succeed.

Sometimes cuttings of Baltimore Belle will succeed when merely set in the ground in the spring. In making the cuttings, about four inches of wood should be used and all but one bud should be beneath the surface of the ground. They will require careful attention as to watering.

DIFFERENCE BETWEEN THE MALE AND FEMALE FLOWERS OF THE GRAPE

T. P. R., Pukwana, South Dakota—It is not easy in a short article to show plainly the difference between the male and female grape flowers. As you travel through the woods in the spring of the year you will often notice strong-growing vines that make a great deal of show, the flowers of which are exceedingly fragrant. These are almost without exception the male plants, and produce no fruit. The plants bearing perfect flowers produce the fruit, and they seldom make much of a growth. If you will take a single grape flower and study it carefully you will find that there is a circle of five little yellowish swellings on the end of slender stems. These are the stamens, or male organs. In the case of the male plants in the center there is very little development, while in the case of those with perfect flowers the centers are well developed and the form of the grape is readily seen. Naturally the grape flowers are supposed to be perfect, and the staminate flowers are those that are produced by the great development of the stamens at the expense of the pistils.

GRAFTING APPLES AND PEARS—ROSES

N. B., Caledonia, Pennsylvania—Pear and plum trees may be grafted or budded in the same manner as apples. In the case of plums, however, the work should be done quite early in the spring, just before growth starts, for most successful results.

Hothouse-grown roses, such as are commonly sent out by rose dealers in mail orders, will often do exceedingly well if properly cared for. They should be planted as soon as received, provided the ground is in good condition, and given careful attention and high manuring. Small plants, like those of the hybrid perpetual class, will generally give a good bloom in late summer and early autumn. Of course two-year-old field-grown plants will give you better results. On the other hand, they would cost you more money.

DRY ROT IN SPANISH CHESTNUT

H. A. G., Calvert, Maryland—I am inclined to think that the dry rot of your Spanish chestnuts which has occasioned so much trouble is due to a smut disease which we do not know how to control. It will probably be more abundant in some years than in others. I think the chances are that the germs of the infection enters the nut when the trees are in flower. I would suggest as a likely remedy that you spray your trees thoroughly, so as to wet every part, with a solution of sulphate of copper made of one pound of copper to twenty-five gallons of water. Apply this about two weeks before the flowers open. Sulphate of copper should never be mixed in an iron or tin vessel, but rather in one made of wood or earthenware.

SNOWY TREE CRICKETS IN GRAPE TWIGS

W. A. S., Goehner, Nebraska—The specimen of grape twig which you sent, and which is punctured lengthwise for an inch or more with very small holes, and which when split open shows that there is a long yellowish egg in each hole, has been injured by the snowy tree cricket, which has used the canes for a resting place for its eggs.

This insect is the greenish cricket which frequently works itself into the house in early autumn and makes the shrill noise so well known. It is ordinarily harmless, and the only way in which it injures cultivated plants is when it lays its eggs in the wood of the grape, raspberry or other plant having a soft pith. These eggs hatch out in the spring and the young feed on the foliage of the plant for a short time, but do little or no damage, and afterward betake themselves to other vegetation.

ORIGIN OF COMPASS CHERRY

C. W. O., Hamline, Minnesota—The Compass cherry originated with Mr. Knutson, of Minnesota. He got it by crossing the common wild cherry with the pollen of the wild plum. In my opinion it is more like a plum than a cherry, but there is no deception in the title, as the fruit partakes of the nature of both the sand cherry and the wild plum.

Live Stock and Dairy

THE HERD BOAR

The scrub boar and the appearance of his usually ill-kept progeny have been the curse of the industry, and have done more than any one thing to discourage the beginner from going into the business of breeding and growing swine.

The selection, management and care of the herd boar is one of the greatest problems that confronts the man who is breeding swine. The greater part of the success of the breeder depends upon the boar that heads his herd, and he cannot afford to look upon it as an unimportant item for consideration.

It is true that like begets like, or the likeness of some ancestor, and if you aim, as every breeder should, to produce a uniform herd, you cannot be too careful to investigate the type of ancestors of the boar as far back as possible, and see how they conform to the type that you wish to produce in your herd. We cannot expect a boar, no matter how good an individual he may be, to make a prepotent sire unless his ancestors for a number of generations have been good ones.

When you secure a sire that has come down through a number of generations of creditable ancestors his value is beyond computation in dollars and cents.

You may say this is for the breeder of pure-bred swine, and not for the farmer, but I tell you frankly it is time to do away with such nonsense. In no way can a man so profitably build up a herd of profitable young sows as by the selection of an excellent boar and using him in his herd.

Nothing will attract the attention to a herd of swine more quickly than a graceful carriage, a neat form and an attractive head, and if these points are backed up by a pedigree of solid worth a sale is easily made and at a much better price than if the attention had not been thus attracted.

When we are fortunate enough to secure a boar that has come down through a good line of ancestors, and that is a good breeder, we should give him the best opportunity possible, for a large part of the success depends upon how he is handled.

Many excellent boars are put in a dirty pen and confined the year round without any pasture or yard for them to exercise in, and by the time they are old enough to be in their prime they are ruined by excessive service and lack of exercise, proper nourishment, etc. Give him a yard, an acre in extent if possible, with a good strong fence around it, and away from the rest of the herd, provide him a warm sleeping place during the cold and damp weather, and treat him in a manner that will make him think he is of some importance, and not salute him with a kick or a club every time you go around him. His disposition toward you will be to a great extent what you make it, and you can rest assured that he will appreciate and enjoy any kindness and rubbing that you do for him, and will not forget all of the injuries, and await his chance to get even with you.

While it is best to be careful while handling a boar and not give him a chance to injure you, I do not think the average boar is such an ugly animal as most people think he is, and he is just as quick to appreciate kind treatment as any other animal. Do not envy him his feed, but give him enough to keep him in a good, vigorous and thrifty condition. Skin and bones with the best of individuality and pedigree cannot be expected to beget good uniform litters of pigs.

He should not be allowed to become fat, and while not in service a succulent feed will prove more desirable—pasture during the summer months and roots during the winter, with some form of grain, to keep him in condition, for he can hardly be expected to be sustained upon pasture alone. The grain that is fed to him should contain a large per cent of protein, middlings, bran, oilmeal and oats.

We have found ground oats the best feed that we could obtain to stimulate the breeding qualities of our animals. As the season for breeding approaches, his feed may be increased, so that he will be in condition to meet the demands of serving a large number of sows, for the drains on a boar during the season of breeding fifty or sixty sows are severe, and it will require careful feeding to keep him in good condition and bring good results.

When not in service plenty of exercise should be given him, even if against his inclinations; without exercise it is impossible to keep well-developed muscles and general thrift and vigor.

W. M. Kelly.

GROUND HOGS

I wish to inform all the farmers that it is a mistake to kill off woodchucks, or ground hogs. They make the finest kind of meat—better than any turkey or chicken—and have been commanding quite a price in city markets the last few summers.

I am an old woodchuck hunter, and know they will command still better prices in the future. The whole trick is in the way they are dressed. If one is onto it, there is no better game to eat.

The killing of this animal as a pest puts me in mind of my father burning up black walnut lumber simply to get the ground. People sometimes do not see mistakes until too late.

Frank Sharer.

THE USE OF MOTOR POWER IN FARMING

Like all new applications of machinery to life's needs, the use of motor power in performing the work on the farm has to meet great and persistent opposition. In the first place, there has been a great deal of talk about the danger of boiler explosions when motor power is used. This danger, however, has been overestimated. A patient French investigator, M. Henri de Parville, has been studying this subject in all parts of the world. He is of the opinion that the greater proportion of mortality from explosions of motor engines over that from locomotive engines is due entirely to carelessness. In a long and detailed study of the matter, appearing in the French scientific journal, "Les Annales" (Paris), M. de Parville says:

"Locomobile thrashing machines are used on farms. They are neglected, are not cleaned properly or cared for as they ought to be, and are used too long after hard use has worn them out. The men who drive the automobile thrashers are, too, often careless, if not ignorant—in fact, their ignorance is proverbial. As the matter is personal, so to speak, and not public, little notice is taken of the fact that more people suffer from the engines used on farms than from those used on the railroads."

This French scientist advises the manufacturers of farm motor machines to discard the old safety valve operated by a lever—very easy to get out of order—and to put in its place a valve of more generous construction worked by a spring which could not get out of order. He says, further:

"The majority of steam locomobiles used on farms are the property of the thrashing contractors. Few farmers find it to their interest to buy a steam thrasher, because the machine costs a lot of money and does only one kind of work. The farmer hires a contractor to do his thrashing. The machine comes into the field, does its work, and disappears. It is not seen again until the time comes to do the next thrashing. The farmer has none of the responsibility of keeping an expensive machine through the winter and the wet season. It costs a good deal to get the machine ready for work, and it takes a man who understands his business to run it. Even if it could do the accessory and intermittent work of the farm, it would cost too much to keep it in running order. So, as the contractor is, for various reasons, the man to use the automobile thrasher, he is the one who ought to look sharply for improvements in material and in the conditions of his work."

The motor machine has already made quite a reputation for itself on the great farms of South America. The Peruvian correspondent of the "Independance Belge" (Brussels) gives, in a recent issue of that journal, the following facts:

"Under present conditions of enlightenment man seems to favor the use of the hardest and most costly motor force for his farm work—namely, man power and animal power. The fact is regretable, because, as we know, the work done by the power or labor of man and cattle could be done more economically and equally well by the electric motor—as it is done in Germany, France, Austria and Italy. Arguing that the power of the electric motor is superior to the power of man and the power of the horse, Doctor Oldenburg, of Germany, had a certain amount of work done, first by an electric thrashing machine, and then by men. After nine hours' labor it was found that the mechanical thrasher had thrashed twenty-five quintals of oats (about 5,500 pounds), at a cost of about twenty cents a quintal, while the electric motor had thrashed out forty quintals (about 9,000 pounds), at a cost of about ten cents a quintal. The full value of motor power on the farm is shown to the best advantage in tillage (plowing, etc.). In plowing, the cost of labor diminishes in proportion as the number of acres worked by the plow increases."

THE PHILOSOPHER OF THE HORSE SHED

Jonas Indulges in Horse Talk

It is needless to say that the horse shed large enough to hold half a dozen teams, which stood near the store at the corners, was a favorite resort of Jonas. On stormy days, or days when work was over, he was very apt to be found there.

"Yes," said Jonas, "I really like horse sheds. They give you shelter, and yet leave you free; they break the west winds, and give you plenty of air and sunlight; they shelter you from storm and let you stand on dry ground; and nothing rests a man more than to set his feet right down on Mother Earth.

"Good place to smoke, too, if one has that unfortunate habit. Ain't afraid of setting anything afire, and the fumes don't bother anybody. Only building in which a man ought to light a pipe."

It should be said, also, that Jonas liked a horse. He knew personally nearly every horse in the country, and here he could nearly always have the satisfaction of looking at one.

To-day a tall, finely built bay colt, checked up to the last degree that an infernal rein could hold it, was turning his head impetuously first to one side and then the other, looking eagerly back out of the shed. His eye was fairly wild with despair. "Poor fellow!" said Jonas, as he unchecked him, and began to smooth down his neck with a kind and steady stroke. "Poor fellow! He's homesick and lonesome. He feels as bad as a human, and doesn't get a bit of help or pity. He was raised over on Brown's farm, and never was out of sight of his mother for a day till two weeks ago. He knew every turn of the brook and every shade tree over at Brown's, and he knew every face that he saw. You think horses don't know? That shows what fools horses have to deal with, and it's a mortal pity. Why, I have seen horses actually sick with homesickness, and sometimes they have been known to die of it. The more brain and affection they have, the worse they feel, and a kind master can win their heart wonderfully at such a time." In the meantime Jonas kept stroking the colt and talking to him as well as for him, until the fellow actually rested his head in Jonas' arms, and shut his eyes, and seemed to be comforted. When he drew away, and sat on a beam a little to one side, the colt followed him with his eye eagerly and affectionately. He had found a friend.

Before checking up the colt Jonas let out the check rein several holes. "I don't care what any man thinks or says to me who draws a horse's head up like that. I only wish I had a bit in his mouth, and could twist his neck to the same degree for a few hours. He'd know more when he got through."

I'm glad automobiles are coming into use; they haven't got any feelings, and horses have, and so many men are not fit to own them. I used to like our little Jew peddler, but I never have since my old Dan gave out. I gave him to the widow Dean, who has plenty of shelter and pasture, and a kind heart, with the distinct agreement that when his usefulness was past he should have a merciful death and a decent burial in her north grove. Moses asked why I didn't sell him. When I replied that he was only worth ten or twenty dollars, he said, "well, why didn't you take that? You would be that much ahead."

"But," said I, "I couldn't quite let go of the old fellow and see him abused after he had served me so faithfully."

"Oh, fudge!" said Moses, "you have got too much sentiment. A man can't make money and keep sentiment."

"I incline to think he spoke a good deal of truth," said Jonas; "which means that most men who get wealth pay a dreadful big price for it."

SOME BIG DON'TS

REMEDY FOR CHOKING

If you have an animal that is choked on an apple or piece of pumpkin, don't run the buggy whip down its throat to relieve it. Don't give soft soap, soda or lard—they will do no good if the case is a bad one. Don't be inhuman enough to use a mallet and block of wood to mash the obstruction, as is often done. We had a valuable cow that got choked on an apple. We called in the neighbors, and all of them had a different cure. After they had done everything they knew but put pepper tea in her ear and split her tail, my wife came to the rescue with her "book l'arnin' cure." The men had never heard of tobacco curing a choke. So after everything else had failed, and the poor beast was almost dead, they consented to try the cure. She mixed some fine-cut tobacco and molasses into a ball about the size of a hulled walnut, then the men put a plow clevice in the cow's mouth to hold it open, and then held her neck out straight and head up. The tobacco ball was dropped down her throat as far as possible. The cow was then unable to stand and was bloated nearly to the bursting point. In a few minutes she stretched her neck out on the ground and her eyes rolled as if in death, then she gave a gulp, and down went apple, tobacco, soap, soda and all. The tobacco makes them deathly sick, relaxes the muscles, and up or down goes the obstruction. I have never known it to fail. Don't forget this if you or your neighbor has a choked animal.

THE "COSSET" LAMBS

A young lamb from high-priced registered stock is too valuable to loose, but not every one is successful in raising them by hand. If it must be done that way, I always turn them over to my wife. When the lambs begin to make their appearance she hunts up the bottles, nipples and measuring glass, also the dairy thermometer. She is very careful not to overfeed, and never gives over an ounce every two hours day and night until the lamb is a week old. Eighty-five degrees is the temperature we give. We find it better to feed the milk to them a little on the cool order than too warm. Do not feed milk from a cow that has been long in lactation if you can help it. We try to have a "fresh" cow when the lambs begin to come, so if there must be outcast lambs, or ewes that have no milk, we can give them a start. Constipation is something we must watch. Even the ewe-raised lamb is liable to this complaint. Watch them, and if you see that this is the trouble, give them a teaspoonful of warm castor oil. One dose may be all that will be needed, but we have to give several doses in severe cases. We have never lost but one lamb. Pet lambs are a great nuisance unless they are kept with the flock. It is not so handy to feed them, but is best in the end.

Young ewes are the ones most likely to forsake their offspring, and they should be watched closely—especially in the pasture fields if the weather is bad. We found a poor little fellow in the field last spring that was nearly gone. I took it to the house, and we wrapped it in flannel and laid it before the fire and got it warm; then we got a few drops of whisky and milk down it, and in an hour or so it could get up. We could almost see that lamb grow when it got started. But we never to a certainty found its mother. Wife says she wishes she had all the little outcast lambs that are allowed to sink or swim, live or die, and she would start a sheep ranch.

THUMPS IN PIGS

Don't kill those little chuffy fat pigs because they have the "thumps." Quit giving so much corn, give them milk, kitchen refuse, bran and anything but so much corn. Give them coal to eat whenever they want it. One man killed three of his pigs because he did not know what was wrong with them. He said they had fits when they went to drink their slop. He thought they were going mad, so he knocked them in the head. Now if that farmer had been taking some good farm papers, and reading them carefully, he would have known what was wrong with his pigs. Don't try to farm without taking several good farm papers. Don't stop with less than four or five at least. Wife has taken the Farm and Fireside twenty-seven years. Her mother gave her a year's subscription to the paper as a birthday present when she was ten years old. There, now, she says I've told how old she is, but she don't care. Her time is not out before 1913.

S. W. Burlingame.

NOTES

Shropshire sheep are now universally regarded as the best all-round breed for the combined production of mutton and wool.

Japan imported nearly two million dollars' worth more of American packing-house tankage in 1906 than in 1905. The Japanese know how to increase production at the least cost.

Gen. George Washington's old horse "Ranger" was a pure-bred Arabian. General Lee's old gray nag "Traveler" was of the "Gray Eagle" stock, and when a colt took the first premium at the Lewisburg, West Virginia, fair in 1859 and 1860.

Live Stock and Dairy

FEEDING NOTES

THEORETICALLY, when I feed my cows a full amount of good corn silage and alfalfa hay my milk yield should be satisfactory, but actually I find that my kind of cows will increase their milk giving if I add some cornmeal to the bill of fare, and increase still more if in addition I furnish about two pounds a day of oil meal per cow. Hence, while I am personally very much in favor of the farmer dairyman growing feed crops to the fullest extent of proven profit, endeavoring to do so myself, yet to all I grow I never hesitate to bring in as supplementary by purchase any feed needed and which my cows can use at a profit for me.

As there are wide differences in the feeds of commerce, so there are also in our grains, hays and fodders, and it is quite possible that the average farmer's first duty in the home production of feed crops is to improve his standard crops to their maximum feed value before he makes extensive attempts at experimentation with new candidates for his favor. We may cut our clover or timothy too soon or too late to secure its full or its best nutritive elements. The simple curing of hay marks a very wide difference in quality between very good and very bad.

I have no manner of doubt that a ton of clover hay, being all one acre could produce, is of materially less feeding worth than a ton from an acre having grown a three-ton crop, all conditions of cutting and curing in both cases being equal.

For the production of crops that carry their feeding elements in the most perfect proportions and conditions, properly balanced soil rations and soil conditions are unquestionably necessary.

The majority of dairymen are not situated near or convenient to the large centers of population, and are not, therefore, in the zones of high prices for dairy products, and they are the feeders of feeds and the buyers thereof that have to be on the lookout that what they buy and use does not "cost more than it comes to;" and while this class of dairymen have the fact of very high-priced commercial feeds confronting them, and which circumstance they are inclined to regard as an alarming absorption of the profits of their business, I think it in the end will have two salutary effects: First, it will be a judgment on poor cows and slipshod methods of feeding; feeding will be studied and improved, and many poor cows that are very plainly eating their heads off will go. Second, the dairyman will be induced to make a closer introspective estimate of the crop possibilities of his own acres, and led to at least experiment with such crops as carry reasonable promise of enabling him to maintain the integrity of a complete ration for his cows without offering up all his profits to the makers and the mixers and adulterators of commercial feed stuffs.

In addition to the fact that home-grown feeds—that may be made to successfully displace at least a portion of the purchased concentrates—being cheaper in cost than the bought ones, we have the recommendation always standing for them that they are natural feeds, and are, therefore, more nearly measurable to the natural needs of the animal than the feeds of commerce, that have been subjected to the manipulations of the various manufacturers, who indeed have given us merely by-products of widely variable values.

Among all our experimenters and investigators we have probably no more practical one than Doctor Voorhees, of New Jersey. He says: "Nature has provided in the whole grain good proportions of the pure nutrients, usually associated with the crude fiber in such a way as to make it a difficult matter to cause injury even from careless methods of feeding, while the manufacturer, on the other hand, removes more or less of one of these nutrients, which, therefore, disturbs the proportions of the constituents, and the resultant feed, decidedly unbalanced, must be used more carefully and with other products, if equally good results are to be obtained."

In connection with the effort to as nearly as practicable grow on our farms the whole of our dairy rations, it is well for us to consider certain things affecting the limitation of such domestic rations, and also the good offices we are performing toward our land when we bring to it as feed stuffs the products of other lands.

In the first instance we frequently see it printed and hear it asserted that alfalfa hay carries per ton practically as much digestible protein as we find, or should find, in a ton of wheat bran, and that the former may be used to displace the latter, or its protein equivalent in any grain feed or commercial by-product, a proposition I very much doubt when it shall be put to the test of year after year feeding in common farm practise; for, chemically, when applied to different feeds, the terms protein and nitrogen-free extract do not always signify the same compounds or the same values. For instance, the protein in corn stover is not of as high nutritive value as the protein in the grain of the fodder. Protein in oats hay is not the complete, finished protein of grain oats, for in the grains we find the nitrogen mostly combined in the form of albuminoids, while in the hays and fodders a part of it, and frequently a large part, exists in amides.

In the second instance it is a fact, each year coming to be more realized and understood, that in our more eastern farming sections especially, for the production of our general farm crops most profitably we must use varying quantities of commercial fertilizers. The more cattle we feed, and the more carefully we save and apply the animal manures thus accumulated, the less need be our purchase of commercial manures; and if we shall buy a cow feed, and find that the cows that consume it quite pay for and return to us in the increased value of their manure fifty or more per cent of the original cost of the feed, we have a residual profit in buying and using the fed stuffs the lands of other men have produced.

I am not presenting this side of the feed question as an argument against, or in the least measure to discourage, the extensive growing of the dairy ration at home.

Certainly good farming suggests that we shall raise such crops as are well adapted to our soils and our rotation in relation to all our crops, and for which we find the best markets. If a forage crop fits well into our ration and the yield of it is satisfactory, and in feeding the crop we find it profitable as an addition to the ration, or find it successfully displacing some feed we have had to buy, obviously good farming and good feeding are both well served in the production of the crop.

W. F. McSPARRAN.

WAITING THEIR TURN

Poultry Raising

BY P. H. JACOBS

TOWN AND COUNTRY FLOCKS

THE hens offer tempting inducement to residents of cities to enjoy country life. A small plot on a town lot affords the inhabitants of some thickly settled neighborhood pleasure in caring for each member of a flock, and the results are such as to lead to the belief that it should pay well to abandon the town and resort to the country, relying upon success with poultry as a source of revenue. There is much to consider in changing from town to country to engage in the keeping of several hundred hens instead of a small flock.

Those who give up their incomes as clerks, mechanics, etc., in order to enjoy the fresh air of the country, with the expectation that success will attend their efforts in the country as was the result in towns, may meet disappointment. Flocks confined in yards in towns or villages are under conditions which bring them under the management of every member of the family. Sometimes each hen has a name, and the slightest ailment affecting one of them means that it is carried into the dwelling house and carefully petted and nursed back to health. The food is of varied character, the refuse from the table contributing, and the quarters are comfortable at all seasons. The hens afford pleasure, but as to the profit derived it is safe to add that if the care, labor, extra food and other expenses could be estimated, the profits might not prove as satisfactory as appeared, although the hens seemed to contribute their full quota of eggs.

In comparing the result of town and country it has happened that no accounts were kept. The hens laid in the spring and summer, but fell off later in the year. The main advantage in the keeping of hens on town lots is that one is sure of having fresh eggs while the hens are producing them, and that is a very important matter to consider in this age of cold storage and canned goods.

When poultry is made a business, by the keeping of large numbers, the individual hen is then lost in the crowd. She is given the same care as the others, and must take her chances with them. The scraps from the table no longer assist in reducing the cost, and if disease attacks the flocks it is almost impossible to treat each individual. The medicine must be given in a wholesale manner—that is, in the food or water—while the proportion of sick fowls is a matter of conjecture, owing to the flock being always exposed to disease, accidents or enemies.

The cost of management for a large number of fowls is never overlooked, while the expenses incident to the keeping of a few fowls on a town lot are seldom noticed. The one pursuit is of a business character, while the other is mainly for pleasure. A satisfactory comparison cannot easily be made. Failures occur with small flocks, but are not so considered. The clerk or mechanic who has a flock in the city has but little invested, the capital being exposed to no great risk; but with large numbers there must be an investment of capital necessary to the consummation of the object desired.

The flocks in the country can be made to give profits, but the best method of success is to begin with a few, and gradually increase the number of the hens. Business men are willing to devote a year or two to become established in trade, and the one who invests in poultry should also determine to plant his investment on a firm foundation. There is something to learn, mistakes are to be avoided, markets are to be found, the breeds are to be studied, and the best conditions for success are to be understood. It is certainly desirable on the part of some to venture from town to country, but before so doing one should fully consider all the drawbacks to be met, as well as to closely look into the advantages offered.

THE YOUNG GUINEAS

The guinea fowl does not begin to lay until the spring weather opens warm, and the ground offers opportunity for foraging, but when the guinea begins to lay she loses very little time. Her nest will be hidden if she can deceive her owner, but when discovered it is usually "brimful and running over" with eggs.

Guineas are naturally wild, but become very tame if hatched and kept near the farm house. The way to tame them is to use a sitting (chicken) hen to hatch the guinea eggs. Place the eggs under the hen, and at the end of one week add two or three eggs of chicken hens, so as to have the young guineas and the chicks hatch at the same time, the guineas requiring a week longer to hatch. As the chicks will obey the calls of the hens, the young guineas soon learn, and they grow to maturity with the chicks, roosting with them, and feeding at the barn yard at night. They usually start off early in the morning in search of insects, and as they are active and industrious, they destroy hundreds of insects daily. They do not scratch, consequently they do no damage to the garden or field crops.

An eminent agriculturist once asserted that each guinea in a flock was worth ten dollars as an insect destroyer, as they consumed many different kinds of insects, and also more than can easily be estimated.

A RATION FOR SITTERS

Feed the sitting hens once a day, compelling them to leave their nests so as to dust their bodies and make preparations for another day's stay. It is not necessary that sitting hens be given as much as they can consume, as their inactivity does not conduce to a great demand for food; but a ration consisting of one part ground meat, one part cornmeal and three parts of cracked corn should supply their wants until the chicks are hatched, when the hens should then be given a variety.

THE NON-SITTERS

When beginning work for the season the farmer or poultryman should make plans and adhere to them. There should be some object in view. Some farmers prefer to dispense with hatching chicks, making a specialty of eggs, as the management of chicks may require more time than can be bestowed just when the planting and cultivating must be hurried. The hens can be turned into the orchard if eggs are to be the object mainly, and coops, incubators, covered runs, and other necessary adjuncts to the management of chicks, will be avoided.

As no eggs need be hatched other than those required to renew the stock, no males will be necessary, and the breeds may be of some non-sitting variety. The non-sitters are active, and do not endure confinement well, but they may be selected in order to supply eggs if that is the main object. Some farmers are partial to the non-sitters, and do not care to hatch young chicks. Of the non-sitters the Leghorns are among the favorites. The Houdans are the largest of the non-sitting breeds, and produce the finest of market chicks when crossed with larger fowls. The Polish and Hamburgs are the most beautiful, and are prolific layers.

The Leghorns have large single combs (some varieties rose combs), but which are easily frosted, however; hence, in selecting the non-sitters, there are peculiarities in the different breeds, and crossing non-sitters of the different breeds with each other does not help the matter, as the produce results in sitters. The Black Spanish are tender, having been bred too often for face ornament. The non-sitters will also lay in winter if given warm quarters and careful attention.

HENS PROTECTING THE ORCHARDS

Poultry should be made to do service in protecting the trees in orchards. The plum is attacked by the curculio when the fruiting season begins, and the peach is injured by the borer, the consequence being that close attention is required. Where there are small yards in which poultry may be confined, both the plum and peach trees are less liable to attack, as the fowls are kept near the trees, and are consequently at work around them. The moths or millers that invariably lay the eggs on the fruit trees instinctively avoid danger, and will not readily deposit their eggs on trees in small poultry yards as when the birds are not in them or have more liberty. The jarring of the plum tree causes the curculio to fall, and the fowls are ready to destroy anything that comes within their reach. While the plan may not give absolute protection, yet it will save trees and prevent considerable injury to the fruit. There is no reason why the orchard should not be made to do double duty. A flock of fowls, if given the liberty of a large orchard, should produce eggs at a minimum cost, and it is possible that the quality and quantity of the fruit will be greatly increased. The scale insect must be fought with other means, generally spraying, but the hens will destroy thousands of bugs and worms that are capable of inflicting much damage in an orchard.

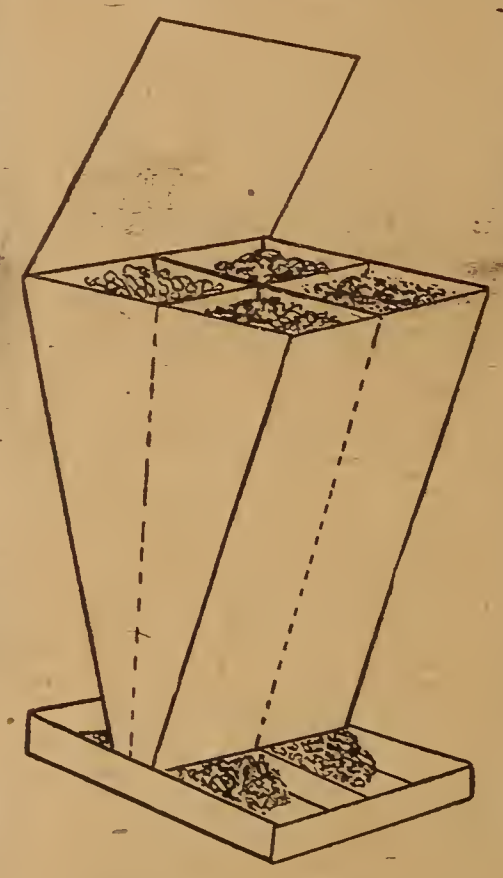
THRIFTY CHICKS

It has been the case on many farms that the early chicks thrive while the late-hatched ones do not grow rapidly. One advantage in favor of the first lots of chicks is that when they are hatched in the early spring, which is usually cold, they receive extra care. Those hatched in the summer are often left to their own care, and the consequence is that they do not thrive. In the early spring the grass is barely up, and the chicks are not exposed to wet grass. The chicks that are hatched in the summer, and are not sheltered, do not show the disadvantages they have been laboring under until they are several weeks old, and then they begin to look droopy, many of them dying from lice and bowel disease. To prevent summer sickness among chicks keep them perfectly dry, have plenty of shade, provide fresh drinking water, sharp gravel and feed regularly.

A COMPARTMENT POULTRY FEEDER

I have found that biddy likes to be able to help herself to certain portions of her ration just when the notion strikes her and in such amounts as suits her taste or need, instead of having it doled out to her at uncertain intervals. So, to please her, to say nothing of the trouble it saves me in giving her these things when I think, but am not quite sure, that she wants or ought to have them, I made a compartment self-feeder, like the one shown in the accompanying cut, in which is placed separately two grades of grit, fine and coarse, cracked oyster shell and fine cut bone.

This one was so well patronized, and the condition of the flock seemed to be so much improved, that I have since made a number of them, so that now there is one accessible to each pen of



fowls. It did not seem to take them long to learn on which side they would find the particular brand of hardware that they wanted, and there is hardly a time through the day that one or more may not be found picking up from the different pans with evident satisfaction.

Any sort of light boards may be used in its construction, although I made all of mine from soap boxes, always selecting one wide board from which to saw out the triangular side. The boxes are closed with a lid, to prevent the fowls from getting in at the top. The openings into the pans are only large enough to allow a small amount of the contents to fall out as it is consumed, and the pans are made so small that the birds cannot get into them to soil the feed. The supply box may be made any convenient size. Ours are about eighteen inches high and the top a foot square.

RICHARD MAXWELL.

MAKING THE HENS LAY

There is one method of inducing hens to lay that is reliable at all seasons, provided the hens are not out of condition. When they refuse to lay, and the farmer has provided them an abundance, he should withhold all other food, and allow an ounce of lean meat or cut bone twice a day, fed raw. Lean meat and cut bone will induce laying when other foods give no result. Meat is apparently more costly than corn or wheat, but if the farmer is not receiving eggs from his hens he is losing money and time. If meat will induce the hens to lay, then the cost of the meat is returned when the eggs are sold. It is apparent to all farmers (as the fact has been demonstrated repeatedly) that when the hens are not laying they may cost fully as much for maintenance as though they were profitable. This lack of profit is not always the fault of the hen, but rather in the management. Too much of one kind of food and not enough of another may be the cause of the hens not laying, although they are apparently receiving the best of care. It is not suggested that lean meat be given exclusively, as such feeding is going to the other extreme. Feed a variety, but do not overlook meat as a portion of the ration. Cut bone is also another valuable aid, especially when fresh and containing adhering meat.

THE GARDEN

It sometimes pays to allow the hens and broods full liberty in the garden. The scratching by the hen is proof that she is seeking insects instead of destroying the plants. It is not advisable, however, to allow the hens in the garden until after the seeds germinate and the young plants appear, as they will do damage to the rows and scratch out the seeds. It is, however, advisable to allow the little chicks in the garden, as it is the best place for them. Confine the hens in a coop, and let the chicks have the liberty of the garden. They will find a large number of small insects, be better protected from hawks, and can do but little damage. After the plants are well under way the hen may not find it necessary to scratch, as she can secure insects on the surface.

CHICKS AND GRASS PLOTS

If the hen is confined in a coop, and kept on the edge of the lawn, a grass plot is the best location for a hen and her brood; but the plot is one that should be kept cut close with a lawn mower. If the grass is not cut, and the chicks allowed liberty on it, they may get wet if turned out early in the morning, and become chilled. Wet grass destroys thousands of chicks, and this loss may be prevented by keeping the grass short and clean. A closely cropped lawn is an ideal situation for young turkeys. It may also be mentioned that if a hen is penned on the grass plot she may scratch the plot to pieces and render the lawn unsightly.

THE DUCKS

After the ducks have ceased laying it it not necessary to give them special care. The duck is willing to accept any kind of food, and if given a place on which to forage it will find an abundance of insects and grass. It devotes its attention to many weeds, which may be made to serve a valuable purpose for ducks. The well-known pigweed is considered quite a delicacy by ducks, and purslain, dandelion, all kinds of grass, and even young weeds that would be rejected when matured, will be eaten. It will pay to feed ducks principally on green food. During the warm season ducks require but little grain, especially if they are not laying. They are active, and can find their food without assistance if in an orchard or pasture.

AVOID FUTURE FLYING

Fences must be so arranged as to afford no advantage for flying. If trees are planted in poultry yards the hens will not be slow in discovering that they can fly upon a small tree, or on a limb, and thence to the fence. When setting out young trees keep this fact in view, especially in regard to the future, and do not place them too close to the fence. There should be shade in the yards, as the direct heat of the sun may cause fat hens to succumb, but the future flyers should not be overlooked. When on the range they will seek shade, but when confined in yards they may have no opportunity for so doing, for which reason every yard should have trees, both to provide fruit and shade.

Poultry Raising

BY P. H. JACOBS

A POULTRY FANCIER

How queer it seems to look back a few years in the history of poultry raising and see the evolution that has taken place. It was but a decade or so ago that poultry was only kept on the farm to supply the family with fresh eggs and to trade the surplusage to the country store for groceries. In those days who would have ever thought that men would lose and make great fortunes in poultry and eggs?

But to-day the situation has radically changed: Farms are devoted exclusively to poultry; every farmer has a large flock, depending more or less upon it as the means of turning his farm produce into cash; and the city or town man, with the poultry yard back of his house, takes a lively interest in poultry, eggs, prices and breeds. It is with this last phase that I will deal—the city man as a poultry fancier.

The merchant or professional man who sees, or thinks he sees, a good investment in a poultry farm generally takes up with the proposition, and in most instances where he has not had practical experience in poultry he ends with a failure. He has dreams of large per cent incubator hatches, high prices for his eggs, and thinks he can breed a fine strain of fowl. Now this happens many times, but in many instances the man has a business head on him, and studies the poultry and market conditions before he makes a start. It is one of the latter's farms that I will describe for the benefit of FARM AND FIRESIDE readers who are now raising poultry. This farm has proved a success from the beginning, and is a comparatively cheap, economical and up-to-date poultry house and equipment.

The house, which is shown by the accompanying illustration, is one hundred and four feet long over all, twenty-four feet wide, six-foot double walls, and is eleven feet to the gable.

The whole house is covered with a good quality of tar felt, which is in fair condition, having been put on two years ago. The whole building is divided into eight pens, each twelve by twenty-four feet, and each is intended to hold fifty fowls. Each pen is separated by a board partition

A FANCIER'S POULTRY HOUSE

two and one half feet from the floor up, and poultry wire is used for the remainder of the partition. The doors in the partitions are frame and are covered with wire and hung on spring hinges. In the winter the natural ground floor is covered with litter to keep the poultry clean and to give them exercise in hunting the grain. There is a double outswinging window on the south side of each pen, making the house nearly as light as a living room. Each window is opened by a rope, which runs to the doors in the middle of the partitions. Two ventilators, each six feet long, serve to regulate the temperature and fresh air.

The perches are on the north side of the house and are over slant dropping boards, which can be easily removed. Under the outer edge of these boards are the nests, twelve to the pen, which are sheltered from the light by a cloth hung in front of them.

On the east end of the poultry house proper is a two-story house, with living rooms on the second floor. The lower part is divided into three storerooms for grain, supplies, and a packing room. On the upper floor are the rooms of the tenant who performs the labor and work of caring for the farm.

The management of the poultry farm is done by the professional man in town. All essential records are kept by the tenant, and the business is conducted on an economic and paying basis.

E. B. REID.

SETTING TURKEY HENS

In the spring of 1906 I was somewhat at a loss to know how to arrange about setting my turkey hens so as to be able to raise as large a flock of young turkeys as I could from the six old ones that I had. I finally tried a way which I like better than any that I have ever tried.

I did not set any of them until there were eggs enough to set a chicken at the same time. By doing this some of the turkey hens laid for the second time.

An old turkey hen can lead twenty-five little turkeys easily. LEONARD GRAPER.

GOING INTO POULTRY RAISING

A young man writes me that he would like to go into the poultry-raising business. He says he has had some experience with ordinary fixtures, and can manage chickens all right, but he would like to begin with a good outfit of modern machinery and do a business that would "amount to something" right from the start.

This is only another case of wanting to begin at the top. It has always seemed to me that the thing to do was to begin at the bottom and work up, instead of at the top and work down. But in this matter I may be old-fogyish. I want to tell this party that if he had a "modern outfit of poultry machinery" he would soon be wanting to borrow money to buy bread and butter. Poultry machinery won't produce poultry.

Not long ago I read a book on poultry raising written by a man whose name seemed to be familiar, and after thinking over the matter I remembered him as a gentleman who made one of the most brilliant failures in poultry raising I ever heard of. In this book he made it appear that a complete outfit of "modern machinery" is absolutely necessary to success, and he pictured in glowing colors the opulence that is bound to come to those who would use such an outfit.

Some of the modern appliances are very useful, but they require very skilful management to make them pay the buyer. That anybody can manage them profitably is all bosh. I would advise this young man to begin at the bottom and work up.

One of the most successful poultry raisers I know began with an outfit that did not cost four dollars. And she climbed rapidly. She needed the money badly, and she gave the business the best work of a brilliant mind and active body, and she succeeded beyond even her most sanguine expectations. She told me flatly that she did not like the business, but went into it for money. And she got it because she earned it.

FRED GRUNDY.

AN IMPORTANT MATTER

If farmers are looking forward to the time when they shall own hens capable of laying two hundred eggs each per annum, some attention must be given the selection of the parent birds now, before hatching becomes general with hens, and close observation and selection of the chicks must be the rule. Farmers are not sufficiently careful regarding the stock to be retained for the succeeding years. Chicks are kept for months that do not show the least sign of growth in that time, and hours of labor are lost in caring for some that should be sold or destroyed, even when healthy.

If only the best fowls were retained, and the inferior ones discarded as soon as they show that they cannot keep up with the others, there would be a great deal of saving of both time and food, and more room might be secured for those that are retained. Inferior chicks or adults will amount to nothing but a loss in the end, and they should be gotten rid of before they cost the owner more time and money. Many young fowls that are kept until quite large should be eaten by the owner, and thus save a small sum in the meat line, instead of entailing expense.

Only a small proportion of the farmers have ever made poultry pay. Generally, if hens have paid on the farm, they deserve all the credit. There are no fabulous profits in poultry, nor is the capital required much less than for other stock, but the losses are sooner recuperated and better prices are obtained. The returns from poultry and eggs are constant. There is always a retail demand which the farmer himself can regulate and supply.

The most careful experiments have demonstrated that each hen in a large flock should give a profit of one dollar a year. Some of the hens will pay nearly twice as much, while some will not pay at all. The cost and the profit are regulated by circumstances, as is the case with all industries. Much improvement will result if farmers will take hold of this matter, and give their attention to culling and selection as early in the year as possible.

POULTRY POINTERS

One breed of hens is better than a mixture for producing uniform eggs.

Sulphur is a great germ killer. Put a little in the chicken feed to ward off disease.

Clean the roosts once each month with soapsuds and carbolic acid, and your poultry will be healthier.

Sand in the craw means health to the hen, and health to the hen means eggs for you. Don't forget to keep your grit box filled.

Put a south window in the poultry house. Sunlight for the hens will mean sunshine for your face when you go after the eggs.

Poorly fed hens have no oversupply of heat and material for egg making, so he that throweth food to his hens sparingly will reap sparingly in profits from the egg basket.

Hens must not be kept too fat if you expect them to lay many eggs. Clover or alfalfa thrown into the scratching pen will not be wasted. The hens will pick the leaves from it and tell you about it when they are cackling over newly laid eggs.

Mrs. Ed. Roop, of Marion County, Missouri, a successful poultry raiser, tells a strange but interesting turkey story. She says that she had a turkey hen to die, leaving twenty-three little ones about the size of full-grown quails. The young flock of turkeys wandered around promiscuously for a day or two, not knowing what to do with themselves. Finally they turned to the old gobbler for solace, guidance and protection. At first he would have nothing to do with them, and spurned their persistent pleadings, but they followed him about during the day and flew on the fence and roosted beside him at night. Eventually the proud father yielded to their many entreaties and became their guardian. He marched forth with them into the fields each morning, caught the juiciest bugs for them to eat, and defended them from the dogs and cats that dared to molest. When a rain storm came up, he sheltered them beneath his strong wings, and as the night began to fall he could be seen bringing the flock home to the roosting place. W. D. NEALE.

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Here is a recipe for making sunshine for home use: Keep your barns filled, your house painted, your flower garden weeded, your children well cleaned and schooled, your food well cooked, and FARM AND FIRESIDE thoroughly read.

◈

Give your boys and girls plenty of playtime. Hard work is all right, but remember that youth is the playtime of life. Later on they will get work, and lots of it. What they need when young is fresh air and a time for play as well as for work.

◈

The "man with the hoe" and the spade is the "early bird" these days. He is getting his garden in shape for planting. How about *your* garden? A good garden is one of the greatest conveniences and money earners the farmer has. It's time to be the "man with the hoe."

◈

Don't take your children out of school too early. Every day that an intelligent boy or girl spends in school is worth twice as much to you as his services, and infinitely more to the child itself. The well-educated, well-read and up-to-date farmer is the farmer of the future. That's what you want your boys to be.

◈

How often during the spring and summer do you take your wife off for a day's outing or a picnic? Remember, her work is a lot more confining than yours. She needs the change and the relaxation more than you. Leave the farm for a day or two once in a while and go off for a little outing with your wife and children. If things are in good condition, as they should be, you wont lose anything by it. Don't forget this.

◈

A HARRIMAN DEAL IS NOT A SQUARE DEAL

In response to an official request, Attorney-General Stead of Illinois recently handed Governor Deneen an important opinion on E. H. Harriman's Chicago and Alton railroad manipulations.

A few significant figures in Mr. Stead's opinion illuminate the present railroad situation and make perfectly clear why railway managers now find it difficult to sell stock or bonds, or to borrow money, in order to obtain the means for making repairs and betterments absolutely needed to take care of the transportation business properly.

In the first place, as the result of frenzied financiering, the Alton system was thrown into a condition of hopeless bankruptcy, but Harriman and associates looted $24,648,000 for their own pockets.

In the second place, the indebtedness of the Alton system since it passed into the control of the celebrated manipulator increased over $80,600,000. Of this total only $22,500,000, according to Harriman's own testimony, was incurred for improvements, betterments or extension of the roads.

"Over $57,000,000 of this indebtedness," says Mr. Stead, "or more than seventy per cent of the entire indebtedness created by this syndicate upon the properties of these several companies, was not created in furtherance of any legitimate purpose for which a railroad company is, or can be, organized under the statutes of Illinois."

Over $80,000,000 raised, and only $22,500,000, or twenty-eight per cent of it, used legitimately for improvements and betterments! That is the real reason why railway managers now find it difficult to raise money needed for betterments.

Wall Street has a brain storm against the President, because, even in their frenzy, the high financiers see clearly that progressive state and federal legislation will, in time, deprive them of all opportunities of piling up stolen fortunes by manipulation of industrial and railway properties.

◈

TROUBLE WITH THE OLEOMARGARINE LAW

In a recent address before the St. Louis Retail Grocers' Association, Mr. H. C. Grenner, former collector of internal revenue at St. Louis, said:

"It is absolutely impossible to enforce the present oleomargarine law, and no one guilty of its infraction can be convicted on trial in the United States courts.

"In the city of St. Louis it has been utterly impossible to convict an infraction of the law. Hundreds of arrests have been made by officers of the government, and in but one case has there been a conviction. The offender in that case plead guilty. It is safe to say that in the city of St. Louis alone more than half a million pounds of oleomargarine are sold each month upon which no special tax has been paid."

Responsible grocers all over the land who are obeying the law are in unequal competition with unscrupulous peddlers, who buy uncolored oleo at about eight cents a pound, secretly color it and peddle it out at about twenty-five cents without paying the tax of ten cents imposed by the law on colored oleo. Not only do the peddlers cheat the government out of the tax, but they swindle the consumers by palming off their fraudulent product as genuine butter.

"To convict the peddler," said Mr. Grenner, "he must be caught in the act of coloring the goods. The records of oleo bought and sold are not sufficient. He may color his oleomargarine behind closed doors, and the United States is powerless to convict him."

He sustained the point made by citing recent decisions of the federal courts, in one of which Judge Evans said that the oleomargarine law was greatly defective, not having in itself sufficient provision for its enforcement, and held that this was not a matter to be remedied by any governmental department or court, but by Congress alone.

"One of the loopholes in the law," said Mr. Grenner, "lies in whether the dealer knowingly receives oleo on which the special tax has not been paid. No dealer would likely receive such goods if he had knowledge that the tax had not been paid. To legally determine that he did 'knowingly' receive such goods nullifies that section."

"Knowingly" is the milk in this cocoanut. It is one of the amendments made in the original oleo bill by a celebrated corporation senator. It is perfectly safe to say that he knowingly had this amendment made with the deliberate purpose of making the oleomargarine law as weak and ineffective as possible, and it is now clear how well he succeeded.

At the time the oleo bill was passed the demand was so great on the part of farmers and dairymen that it could not be defeated outright, but the clever corporation corruptionists in Congress did the next best thing for their clients, the oleo manufacturers, by amending it to death.

There are two things to be attended to in this matter: One is to have the serious defects in the present oleomargarine law remedied at the next session of Congress; the other is to retire to private life, to keep company with ex-Congressman Wadsworth, the clever corporation senator who is principally responsible for making the present oleo law ineffective.

The plain people everywhere in this country—producers, consumers and honest merchants alike—will be benefited by having these two things done at the very earliest opportunity.

◈

ANOTHER GREAT VICTORY

"Thus conscience does make cowards of us all"—of all who have a conscience. Of those who do not, it is the penal code that makes cowards—when the code is in operation.

Harriman's Union Pacific Coal Company has just restored to the public domain many million dollars' worth of coal land which it had "acquired" by devious methods.

A few months ago the Interstate Commerce Commission began an investigation into extensive land frauds in Colorado, Utah and Wyoming. The testimony gathered at Omaha, Denver, Pueblo and Salt Lake City showed that three big coal companies, subsidiary to two railway systems, had fraudulently obtained possession of vast areas of the richest coal lands in the West and thrown the people into the clutches of a great coal monopoly.

Prominent railway officials as well as railway and land office employees, along with judges of the courts and members of Congress, are mixed up in the schemes by which large areas of public lands were turned over to these interlocked railway and coal companies.

When the testimony was turned over to the Department of Justice, and prosecution was directed by the President, the Harriman corporations promptly volunteered to give up the stolen lands.

This is only a good beginning; but the people of the West can rejoice greatly, because the outcome of this particular work of the Interstate Commerce Commission and the Department of Justice will be freedom from an oppressive monopoly.

"I am informed," said Commissioner Prouty, who had charge of this investigation, "that the Union Pacific people have conveyed back to the government, or will do so at once, all the lands to which the title is questionable. There will be no legal proceedings connected with it. Yes, I naturally feel pleased over such an outcome of our investigation. I don't know the area of the lands involved, but I do know we were told in the Northern Pacific hearings that that coal was regarded as worth fifty cents a ton in the ground, and that there are millions and millions of tons of it that will come back to the government. The people of the country save a good many millions of dollars by the return of these lands."

◈

GUARDING THE PUBLIC COAL LANDS

The American farmer is not only benefited—as is every other American citizen—by the prospect of having his coal bill reduced through the President's recent proclamation with our national coal lands from sale. He ought to know also, that, contrary to the general misapprehension that the Presidential order has "tied up" from settlement vast areas of agricultural land, the new policy contemplates only "holding fast to the coal under these lands." It allows the surface to be preempted under the Homestead law, but obliges the surface owner to permit the development of the coal underneath, under wise laws.

How much coal are we using nowadays? Edward W. Parker, the government's coal expert, has shown (in a recent official report) that if the coal areas of the United States are simply spread out in a layer six and one half feet thick, which he considers a fair average, we should obtain 7,000 tons of coal an acre, after leaving enough coal underground to support the roof. Our 400,000 square miles of coal territory at this rate would give us a supply of 1,500,000,000,000 tons in all. We used up 393,000,000 tons of coal in 1905, and 425,000,000 last year. In all we have used so far 6,000,000,000 tons—that is, we have worked out a little less than a million acres of coal up to the end of 1906. Of course, at the rate of production during the last year or two, our coal supply would last (as near as can be estimated) between four and five thousand years. Statistics, however, are often inconsistent. The beds which are actually worked, however, will last only from seventy-five to eighty years more, and of the unworked beds we of course actually know but little. The President's proclamation has withdrawn from sale 16,000,000 acres. In a recent article in the "American Monthly Review of Reviews," a high government official (who declines to permit the use of his name) says on this subject:

"Fortunately for the people, the coals of the public lands vary in character within wide limits. Some is anthracite, more is bituminous, most is classed as lignite, and this lignite has a poor reputation as a power producer. Otherwise all of these coal lands would have been taken up in some way or other under some law long ago. The people have strengthened their own right for continuing the ownership of this coal, for whatever it is worth, by careful investigations made by the government at its coal-testing plant at St. Louis, Missouri. . . . What is their value as an asset to the people, and to what extent will the proper sale of these coals at a fair price relieve taxation? By the most happy coincidence the value of the lignites and the value of a new method of disposing of the people's coal came to be recognized at the same time. While Hayes of the survey was determining the extent of the coal lands, and Holmes and Parker were determining the fuel value of the lignites, Leupp, the Indian commissioner, was experimenting in a new government policy in the Indian Territory. Our coal lands were going for a mere song, but the folly of letting the Indians part with their coal at a great sacrifice when they might be made self-supporting by its proper sale was evident. Their coal was therefore leased—with comparatively enormous revenues to the Indian. Apply this to a single field still in the hands of the people. A field can be pointed out underlain by four or five strata of coal, each five to six feet thick, and deep under this (well protected by depth, for some distant future consumption) is another layer over eighty feet thick. Now let the government ask eight cents a ton royalty, which has proved wise in the Indian Territory, for this coal, and assume an extraction of only two thirds, from one of these fine thinner layers and our revenue would be thirteen times the price which the government would obtain by selling this direct as coal land, and one hundred and fifty times what it would get for the land if sold, as coal lands have been sold, as agricultural land. . . . The master stroke in this achievement reaches in two directions. It forms the third essential element—the final necessary element—in the development of the West. Quietly but efficiently did the President promote the Geological Survey's reclamation system, which in its many projects outstrips the importance of the Panama Canal. At the same time the President threw the whole weight of his national popularity to the aid of a wisely planned forest service, which is broad enough for the entire country."

The Cultivation of Cacti

By Charles Alma Byers

Photos by the Author

THE cultivation of cacti as an industry may seem to many persons as an odd one. And in fact it is, for it is by no means common. There is a farm, however, about twelve miles from Phoenix, Arizona, on which the cactus family is given full sway—probably the most peculiar farm of vegetation in the world. It contains nearly every variety of the cactus plant known either in the United States or Mexico, and the various specimens here grown are as near perfection as any that grow in the desert, the natural home of cacti. Here are to be found plants varying in sizes from varieties which grow to a height of only a few inches to giants which tower upward sixty and seventy feet.

This unique farm was started ten years ago by Dr. R. E. Kunze. Its location is in what may be considered a part of the vast desert region which reaches outward from almost the city limits of Phoenix. The cactus family, being truly children of the desert and rebellious against ordinary cultivation and civilization, has here been given by Doctor Kunze a home as near like its wild one as was possible. It receives the same stinting of moisture, and each plant is given a bed of alkali and gravel and rock, as though it still grew wild.

The different varieties of plants in this cactus nursery or farm have been gathered by Doctor Kunze from all parts of the deserts of the United States and Mexico. Some have grown from the seed, but the largest portion of them has been transplanted. The doctor frequently makes long trips into the surrounding desert, and always brings in a fine collection of specimens. He starts on one of these expeditions with a covered wagon, horses and mules, implements for grubbing, three or four assistants, and supplies sufficient to last for several days. Often he is gone from home for more than a week, and some of the plants in his collection have been carried over one hundred miles from where they originally grew.

The cactus is a repulsive-appearing plant. It is covered with sharp spines which serve as a very effective armor, and to the tourists who travel through the Southwest it is a form of vegetation whose acquaintance is to be shunned rather than courted. The barren desert is bad enough, but in their opinion it is even made worse by the cactus growths. This, however, is not strictly true. Instead, the cactus is a very valuable plant to the desert. The various tribes of Indians of this region have long been familiar with a number of its uses. The Mexicans also, and even cattle and horses, have often found it a good friend. It has served as food and drink for man and beast when no other source of supply was at hand; its dry stalks have answered for fuel, and to the Navajo and other Indian tribes its spines have been satisfactorily used as needles for weaving blankets.

Doctor Kunze, however, was not satisfied with these uses being the limit to the value of the cactus family. He suspected a greater value still, and it was this that led him to starting his unique farm. And the doctor surmized correctly. In this ten-year study of the family he has found that it is of immense value in the science of medicine, and has already listed and established many of its uses in this direction.

Probably the most interesting plant in the doctor's collection is the hedgehog cactus—which, by the way, is very appropriately named. It is covered completely with ridges of long thorns, and always stands at apparent defense. Its body is very large, and when the top is cut off it resembles a large bottle, inside of which is a watery pith which is very nourishing for both food and drink. It grows to enormous proportions, and one plant is often sufficient to quench the thirst of ten or fifteen men. Horses when thirsty will often hunt one of these plants as it grows wild, and by opening it with a kick drink until satisfied.

The Cereus greggii, a variety of the common night-blooming cereus, is another interesting cactus. To the Mexicans it is known as Jara matraca, and by them it is highly valued for its medicinal virtues. They use its roots to cure headaches and many other such afflictions. The body of this plant very rarely exceeds four feet in height, and in thickness is usually about an inch. It has a very pretty lavender-colored flower, which opens at dark and remains expanded until about eight o'clock the next morning. It grows an egg-shaped fruit, scarlet in color, and usually about an inch thick by three inches in length.

The largest specimens on this farm are the saguaros. This plant is really a cactus tree. It usually grows from fifteen to forty feet in height, and occasionally a specimen is found that even exceeds this, while in thickness it is about two and one half feet. This variety is found at its best, when growing wild, within the desert which extends outward from Phoenix. Being of such immense proportions, when dry it is of great value in this region as wood, for other timber is very scarce. It bears a large white flower, which is succeeded by a fruit very similar in shape to that grown by the cereus, except that it is longer, and is yellow in color. This fruit ripens in July, and its interior is a sweet and nourishing food.

Another very valuable variety of cacti is the pitaja. This plant branches out at the base into two or more stems which grow to heights of from five to twenty feet. Its blossom is a small white flower, and replacing it comes a very excellent fruit, which is sometimes yellow and sometimes red and purple. This fruit ripens in July, and then another crop in September. The Indians of the Southwest at these ripening times sometimes live exclusively on this fruit using it as a food and preparing it into a form of liquor for drink. As a fluid extract it is used as a cardiac stimulant, whose action resembles digitalis, except that it is less uniform.

Others among Doctor Kunze's large collection which might be mentioned are varieties of opuntia, the common prickly pear of Mexico, and a second variety of the hedgehog cactus. Every variety which Doctor Kunze has studied possesses some valuable quality, and it is probable that further study of this peculiar plant of the desert will result in many new discoveries of its uses. This farm has attracted a great deal of attention from botanists all over the country, and is frequently visited by students, who can here find a collection of plants which would require months to study in their uncultivated state.

At Tucson, Arizona, the Carnegie Institution has established a Desert Botanical Garden, in which the cactus family will be given quite a prominent place. The location of this garden is also in the desert region, and the various plants will be subject to the same conditions as when growing wild.

SAGUARO CACTUS OVER THIRTY FEET IN HEIGHT

SMALL GROWTH OF HEDGEHOG CACTUS AND OTHER VARIETIES

CORNER OF THE FARM SHOWING A VARIETY OF CACTI

Queer Names and Combinations

BY JANE LESLIE

DOUBTLESS almost everybody has been more or less amused occasionally by singular or ludicrous surnames, but apparently to only a few has it occurred to make a collection of them, and thus add to the long list of fads. The writer has for many years preserved all queer names coming under her observation, newspapers, legal notices, the society columns and marriage and death notices furnishing most of them. All of the names found in this article are genuine, and may be classified under several heads — anatomical, botanical, occupations, etc.

Under the first heading we have: Leg, Heart, Lipp, Hair, Brow, Foote, Hand, Shank, Tongue, Kneebone, Chinn, Lung, Kidney, Back, Hipp, Blood and Head. We can present to you Mr. Mallett and Mr. Ball, Mr. Lock and Mr. Key, Mr. Tack and Mr. Hammer, Mr. Watch and Mr. Pray, Mr. Old and Mr. Young, Mr. High and Mr. Low, Mr. Makepenny and Mr. Banker, Mr. Street and Mr. Walker, Mr. Gay and Mr. Sober, Mr. Rich and Mr. Poor, Mr. Dull and Mr. Bright, Mr. Priest and Miss Nunn, Mr. Letter and Mr. Stamp, Mr. Carrier, Mr. Post and Mr. Postal, Mr. Hugg and Miss Darling, and if more endearing words are wanted we have: Love, Sweet, Deary, Pett and Lambkin. In Ornithology we have: Bird, Goose, Nightingale, Jay, Wren, Sparrow, Hauk, Crow, Peacock, Peahauk, Rook, Dove, Buzzard, Eagle, Parrot, Partridge, Swan, Drake and Robbins.

"What's in a name; that which we call a rose by any other name would smell as sweet;" therefore we infer that Miss Catherine Grabacabbage, whose marriage was noticed in the Detroit "Free Press," may have been as sweet a bride as Miss Rosebush. And possibly Mr. Turnipseed might make as strong a lawyer as Mr. Onion or Mr. Garlick. What excuse could Mr. B. Proper offer for bad manners, he whose name is a constant admonition? We have met Mr. Lord and Mr. Satan, Mr. Church and Mr. Chapel, Mr. Rector, Mr. Priest and Mr. Pastor, Mr. Parrish, Mr. Gabriel, Doctor Pentecost, Mr. Scripture and Mr. Bible, Mr. Cross, Mr. Graves, Mr. Tomb, Mr. Organ, and last, but not least, Mr. Pope. When Mr. Shoebottom died, was it not reasonable to conclude that he was worn out? And when Mothersill, why not send her to the Hospital and tell her to Drinkwater? Where is the girl who would not accept an invitation to dance with Mr. I. Waltz? Or again, why should a man hesitate to start a bank when he has the Bank, the Banker, Mr. Makepenny, Gold and Silver, Money and Purse, Pennys, Mills, Quarters, Cash and Mr. Honesty to look after affairs?

For the family we have: Mr. Parent, who is a Mann and without doubt a Gentleman, Mr. Child, Mr. Baby, Mr. Ladd, Mr. Brother and Mr. Friend. There is Mr. Heifercalf with Mr. Gambol—suitable companions all will agree—Mr. Sunshine and Mr. Starr, Doctor Suredeath and Mr. Sickman, Miss Icy Snow and Miss Ada Frost, Doctor Buggy who married Miss Cutter, Mr. Weed who married Miss Pease, Mr. Baker who married Miss Cook, and Mr. Iron whose trouble with Mr. Shirt took the following form in the legal notices—"Iron vs. Shirt." We have also Mr. Henn and Miss Feathers, Mr. Scratch and Mr. Bumpus, Mr. Teeters and Miss Tamsen Soda, Mr. Will B. Rich and Mr. Ben Rich, Mr. I. B. Bent, Mr. Steptoe, Mr. Wrinkle, Mr. Virtue, Mr. Grit, Mr. Soar, Mr. Dice, Mr. Trot and Mr. Runner, Mr. Sass, Mr. Rakestraw, Mr. Longnecker, Mr. Younghusband, Mr. Wink, Mr. Romance and Mr. Sword.

We also have a well-stocked clothing store, and can furnish a man with Shirts, Hose or Stockings, Cuffs, Collars, Boots, Coats, Vests and Capps, and he might take home to his wife a Veil, a Belt, a Sontag, some sheets and some Pearl and Ruby Buttons. Ponds, Lakes, Rivers and Falls are common, and we occasionally meet Fountains, Wells, Waters, Snows, Thaws, Brooks, Banks, Foggs, Seabreezes, Blizzards and Masts.

Among the occupations we find: Slaymaker, Haymaker, Stonebraker, Fowler, Fisher, Hunter, Butcher, Brewer, Porter, Carpenter, Gardener, Farmer, Weaver, Barber, Mason, Cooper, Shoemaker, Tanner, Potter, Miller, and Mr. Piper, who is a plumber. In the average house or home one is not surprised to find Stone and Brick and Pebbles, Roof and Rafter, Stairs, Sills, Doors, Paynes, Glass, Sink, Zink or Ruggs. What woman would be courageous enough to jog in matrimonial harness with Mr. Andrew Whacker? We might suggest that Miss Uplegger would be better prepared to withstand the onslaughts of Andrew than Miss Lambkin or Miss Angel.

We now invite the reader, together with Mr. Munch and Mr. Chew, into our kitchen, which is presided over by Mr. Pickler, assisted by Miss Seasongood. We offer Bacon, Cakebread, Pancakes, Crums, Rice, Mutton, Ham, Chicken, Fish, Coffee, Pickles, Apples, Crabbs, Honey, Bunns, Quail, Salmon, Lemons, Jelly, Chestnutts, Peaches, Pears, Soda, Pepper and Tators; and to drink we have Sweetwine, Sourwine, Beers, Bock, Wines, Water and Brandy. We trust that nobody will issue Boozey from the feast.

Many firm names appear to have been

[CONCLUDED ON PAGE 16]

A Dooryard Call

A Monologue

By J. L. Harbour

No, I'm not going to get out the buggy. I was driving by and I just thought I'd draw rein in the shade here in your dooryard and let old Bob rest a bit while I had a little visit with you, and you needn't get up out o' your chair there on the piazzy or lay by your darnin'. I never like to have folks make company of me, and you know I always go right on with my work when—whoa there, Bob! He don't like to stand still over and above well, and the flies are awful to-day. Seems to me there's more flies than common this year, but mebbe not. I don't see what such a pesky thing as a fly ever was created for anyhow—tormentin' things! Folks all well? Yes? that's nice. If a body has their health and all their faculties they oughtn't to complain, but sometimes they are the very ones that complain most. I was readin' the other day of one o' these multymillionaires who said he would give a million o' dollars for a sound stummick, but I dunno as I would sell him my stummick for his million o' dollars. My father and mother was poor as Job's turkey, but they give their ten children good, sound bodies, and if that wa'n't a fine inheritance I dunno what is. What's money with no health to enjoy it? I've got a cousin who can draw a check with six figgers on it, but if he eats a rozberry or anything else with a seed in it it lays him flat on his back. I can't draw a check for fifty dollars, but I can eat cherries, pits and all, if I want to, and never know I've swallered 'em. Give me health and I'll work for riches and not complain.

I run in to see old Mrs. Baker while I was in the village. I found her "resigned," as usual. Did you ever in all your mortal life see a body make the fuss she makes over being "resigned" to things? She will set and talk two solid hours about how "resigned" she is to ev'rything that befalls her. I should think it would be more wearin' to her folks than out and out complaint. I can't stand martyrdom. These folks who are martyrs and who want ev'rybody to know it are awful tryin'. Folks who are truly resigned say mighty little about it. I had an aunt who was one o' your martyrs, and she had a sister, my Aunt Kate, who had a temper that would of made you think she was first cousin to a hyena, but, I vum, if I wouldn't ruther have lived with Aunt Kate than with Aunt Beulah. Aunt Kate would go off like a giant firecracker in her fury, and then it would all be over with, while Aunt Beulah wore you all out talking about her perfect resignation. I ain't sure that the Lord wants us to be resigned to ev'rything. If He does where is the "righteous indignation" that the Bible tells about to come in?

I reckon you've heard that the Widow Pike and Jonas Trimpy slipped off to Eldervale the other day and got married? You hadn't heard it? Well, they did, and Mrs. Trimpy dead only eight months and three days. But, my land, he was "taking notice," as the saying is, before she had been dead three months. He is a reg'lar Puritan, isn't he? You know the Puritan widower used to "take notice" at the fun'ral of his wife. They say the Widow Pike made Jonas agree to put up a real handsome tombstun to her first husban's grave before she would marry him, and Susan Bean, who lives right opposite the cemetery, says she saw Jonas settin' the tombstun up with his own hands. Seems to me I'd feel awful queer setting up a tombstun to the grave of my wife's first husband, wouldn't you? But a man who would sell his first wife's clothes along with other things when he had an auction after her death aint hurt none with sensitiveness. I know that—whoa there, Bob, you dratted beast! Why in time can't you stand still a few minutes? Lucindy Taft was over to my house yesterday tellin' me about a letter she had had from her nephew, Lorin Peake. You remember Lorin Peake, don't you? Course you do and you know what a way he had o' seein' double. I should think from what he writ his Aunt Lucindy that he sees thribble now. You know he's out in California, and he was in San Francisco when the earthquake come at that town, and what Lo Peake writ his Aunt Lucindy went some ahead of anything the papers have yet printed about the freaks o' the earthquake, and they've printed some whoppers. Lo writ that he was stayin' in a three-story brick house and that the earth opened under the house and let it slip down until nothin' but the chimbley showed above the ground, and he said there didn't even a picture fall from the walls or a dish from the shelves in the cupboard, and that no one in the house knew there had been an earthquake until they got up to get breakfast. Said there wa'n't a crack in the walls o' the house and that they was livin' in it just as if nothin' had happened. Wa'n't that the beateree of all the earthquake stories? Lo said he was doing reportin' for the newspapers. I should think he'd fit right in to a job like that. His Aunt Lucindy believed ev'ry word o' that fool letter. She's so gullible she'd believe it if Lo writ that they were going to raise that sunken house by puttin' a bar'l o' yeastcakes under it! That reminds me that I heard the other day that Aunt Sally Putney was hard at work on a big mixin' o' bread she'd set over night when her house caught fire last week, and when she looked up and saw the flames creepin' out all around where the chimbley goes into the ceilin' she give a yell that the neighbors said sounded like a steam circus callyhoop and dropped right down into the bread pan and the neighbors found her settin' there poundin' the floor with her heels an' screechin' like mad with the bread puffed up all around her like a cushion. She was so skeered they had to drag her out, and they said the bread all stuck to her, pan and all. Dan Peters got on the roof o' the kitchen and slipped and fell off right spat into the rainwater bar'l and the bar'l rolled over with him in it. They said that between that and Aunt Sally runnin' around with a big mixin' o' bread hangin' to her the folks got to laughin' so they all but let the house burn down. Aunt Sally's husband was sick abed upstairs, and when they yelled up to him that the house was afire he come runnin' down with the first thing on he could reach, and that happened to be a blue Mother Hubbard wrapper of Aunt Sally's and that added to the let-joy-be-unconfined feelin' already in the air, and Joe Butters told me he wouldn't of missed that fire for a ten-dollar note. Said he hadn't laughed so much since Clay Jasper's thirty-year-old horse run away with forty dozen eggs in the wagon and Clay fell back among the eggs just before the wagon upset, and Joe said that Clay looked like a big om'let when they got to him. You know that Clay sets up to be a horse-trainer and he has made his brags that the horse never stalked the earth he couldn't drive, so that made it all the funnier to think that a thirty-year-old nag should dump him out with forty dozen eggs on top o' him. Horse got skeered at one o' these tarnation attymobeels that come dartin' round a sharp curve in the road, and any horse ought to be excused for anything it does when one o' them dratted things comes at it. I don't know but I agree with Phoebe Dobbs, who says she has found something in the Bible that proves to her own mind that the idea o' the attymobeel originated in the bad place, and that most o' them that rides in the blamed things will go to where the idea come from. She says too, that the attymobeel is simply a fulfilling o' the prophecies about the "second coming" bein' near at hand. Phoebe is forever talking about the "second coming," and she says all our modern inventions and the awful goin's-on in the world are proof of its bein' near at hand, but she keeps naggin' her husband about that addition she wants built to the house all the same, and she says—whoa, Bob! I reckon I'll have to drive on for Bob is so restless he wont stand long enough for me to even pass the time o'day with a person. He wants to—stand still, you tormentin' critter! He wants to get home and out in the paster, that's what he wants. I reely ought to be movin' on myself for I've a lot o' currants I want to jell this afternoon. Hope I won't make the mistake Jane Fifer made when she made her jell the other day. You know her eyesight has got real bad and if she didn't use salt instid o' sugar and never knew it until she had boiled up all the juice she had. And the other day she went and made pies out o' a bowl o' cold mashed turnips thinkin' it was a bowl o' stewed apples. Says she needs specks. I should think she did. Needs 'em most as bad as poor half-blind old Lyme Potter did when he wore his wife's hat to meetin' thinkin' it was his own. The two hats was side by side on the hatrack and they was a good deal alike only his wife's had a red feather in it, but that was diff'rence enough to make poor old Lyme mighty conspicuous. Come over soon. Bring your sewin' and stay all afternoon. No, I won't make comp'ny of you. I never—well, well, git on if you must, Bob, you oneasy critter! Good-by. Go on, Bob! Ever see such a 'tarnal horse beast? Now that I want to go on he wants to stand still! You'd think he was human he's so contrary. Good-by.

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Women are Strange Creatures

"Young women are strange creatures," said a telegraph clerk.

"One afternoon not very long ago a very handsome young woman came to my office and asked for a telegraph form. She wore a brown veil, but I could see all the same that her eyes were red, as if she had been crying. I handed her the form with a sympathetic look, and she wrote this message:

"'Never let me hear from you again.'"

"She paid for the message, and then she asked in a tremulous voice how soon it would go.

"'In half an hour, ma'am,' I replied.

"She went away, but in ten minutes she was back again.

"'Have you sent that message of mine?' she said.

"'No, ma'am, not yet.'

"'Very well. Give it back to me. I want to change it a little,' said the young woman.

"I returned it, though that was against the rule, and she altered it so that it read:

"'No one expects you to come back.'

"Then she went away again, but this time she was hardly gone five minutes.

"'That message of mine—it hasn't been sent yet, has it?' she asked.

"'No, not yet.'

"'Oh, good. Just let me have it again, will you?'

"I handed her the message, and the strange creature tore it up and wrote this in its place:

"'Dearest, come home. All is forgiven.'"

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Queer Names and Combinations

[CONTINUED FROM PAGE 15]

arranged to amuse the public, Liecheat and Skinner being the name of a reputable law firm. Messrs. Poor, Stiff and Proud conduct tonsorial parlors. Messrs. Whynes and Lickrs are wholesale liquor dealers. Edwin Eatwell is the proprietor of a café. Mr. Wheyoff is a shoe dealer. Mr. C. R. Shirts is a haberdasher. Mr. I. Grant Light is a gas man. Mr. A. Tank and Mr. Grosscup conduct saloons. Icy, Snow and Frost and Ketchum and Kissam complete the list.

In conclusion we would like to show you our menagerie and our botanical garden.

We have a Fox, a Coon, a Badger, a Mayworm, a Hogg, a Bull, a Bullock, Fish with Finns and Gills, a Cat, a Rabbit, a Bear, a Lamb, a Worm, a Grubb, a Wolf, a Pig and Sevenchickens. In the garden you will find a Tree with Root, Branch and Budd, a Rosebush with Blossoms, Lavender, Moss, Bush, Brush, Sage, Flower, Burr, Redfern, Vine, Cotton, Berry, Bloom, Bean, Corn, Roseroot, Shrub, Dock, Mullins, Greenleaf, Greenfield, Rose, Wheat, Pine, Beach, Hay, Thorn, Crabtree, Seed, Twig, Reed, Pine, Twelvetrees, Straw, Mustard, Peartree, Clover, Cedar and Grass.

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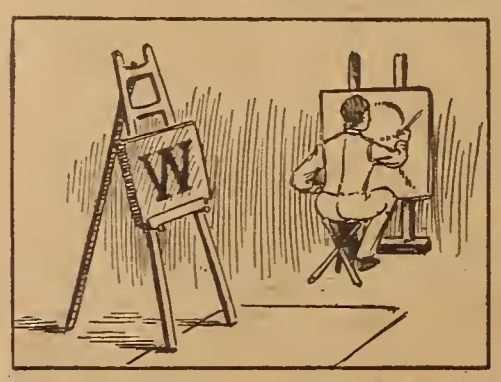
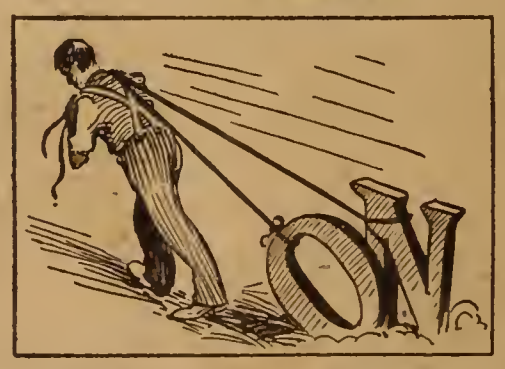
Not Too Late

Most of the Farm and Fireside folks are pretty busy all the time. We don't have many "spare time" farmers on our subscription list. They make every minute count. But how about the boys and girls? They mustn't work *all* the time. "All work and no play makes Jack a dull boy," you know. Here is the remedy: Encourage the boys and girls to enter Farm and Fireside's great Four-Pony and Piano Contest. We guarantee a prize to absolutely every contestant, and if the boys and girls hustle they can win the pony team. This kind of work will be as good as play to them and is sure to bring them a generous reward. There is plenty of time yet. See that your family is represented in the contest.

The Puzzler

The Six Pictures Below Represent the Names of as Many Different Animals That Are Mentioned in the Bible





Answers to puzzles in April the 10th issue:

Charade No. 1—Catchest—cat—chest.
Charade No. 2—Some—so—me.
States in America Concealed—1. Idaho. 2. Nevada. 3. Oregon. 4. Texas. 5. Ohio. 6. Indiana. 7. Georgia. 8. Washington. 9. Maine. 10. Missouri. 11. Kentucky. 12. Iowa.
Decapitation—Pirate.

Famous Bits of History

The First Definite Battle of the American Revolution

OLD as it is, the phrase "The Battle of Bunker Hill" still stirs the heart of the good American. Fought on the seventeenth day of June, 1775, it was the first definite battle in the War of Independence.

The skirmishes at Lexington and Concord had stirred the Colonists to their depths, and had roused the British to the gravity of the situation. General Gage, who commanded at Boston, was reinforced, so that in June, 1775, his army numbered ten thousand brave men. New England had likewise been active, and sixteen thousand Provincial troops invested Boston on the land side. It became known to the patriots that the British intended on June 18th to seize and fortify Bunker Hill, an elevation not far from Charleston, and Dorchester Heights, south of Boston.

Determined to anticipate them, Colonel Prescott, with a thousand men, was ordered to make a night march to Charleston and fortify Bunker Hill.

Owing to its position, they decided to fortify Breed's Hill rather than Bunker Hill, to which they had been ordered.

As the sun came up the British discovered that the enemy had crept on them in the night. The gunboats opened fire, and Boston awoke with a start. The generals realized their danger. If the Colonists held the hill they could not hope to hold Boston, so it was determined to attack at once.

The little breeze of the night had died down, and from a white, cloudless sky the June sun shone pitilessly. The Americans were tired out. They had but a scanty supply of food and water, but they were determined. A few re-enforcements under John Stark arrived and took a position behind a rail fence on the left of the redoubt. Israel Putnam joined the force, and Doctor Warren appeared with a musket. He had been commissioned a major general by the Massachusetts Congress, but he refused to take the command. "I have come," he said, "to fight as a volunteer."

By noon three thousand British troops under Howe and Pigot had landed at the base of the hill, and at three o'clock in the afternoon began the forward movement. The troops formed in three lines. They were brave men, these British soldiers. On they moved, their bayonets glinting like steel pickets in the sunshine, their red coats making a line of brilliant color against the green of the grass; behind them were the drummers beating the long and steady roll of a march. Cannon sputtered on the ships. But above, on the hilltop, there was no longer motion. There was no sound. The British soldiers were marching toward a silence—a silence like that of an unknown darkness; higher still, over fences, through the long grass, where a day before the meadow larks had nested peacefully!

Suddenly there was the chirp of a rifle—a soldier staggered; then stillness again. From the redoubt came voices, but there were no more shots. Nearer still, so near that the crouching Colonists behind the breastwork could see the parted lips of the soldiers as they panted in the march. The fire from the ships now ceased; their own men were too near the enemy. In another minute they would be over the redoubt. Then a sword gleamed over the sod wall. Out over the stillness came the sharp, whipping voice of command, "Fire!" From the breastwork flame and shot leaped toward the invaders. From the mouths of old army muskets, from settlers' rifles, from farmers' fowling pieces, Death swept down the hill. Whole platoons went down before the hail of bullets. Scarlet coats wavered and fell, as the tall, red ironweeds in the meadow go down before a summer gale. First from the redoubt and then from the rail fence the British were repulsed.

Painted by F. C. Yohn

THE LAST STAND AT BUNKER HILL

Then the British fired Charleston, and so added a new terror to the day.

Again Howe formed his men, and again they advanced. Once more that long and terrible climb up the hill toward the redoubt over the bodies of their comrades, once more the ominous silence, once more the sheet of flame and the gray hail, and once more the British were driven back, with terrible loss.

General Clinton now came over with re-enforcements, and the regulars prepared for a third attack. Behind the entrenchment matters had come to a crisis. All through the night these men had worked, all through the day they had been subjected to the terrible strain of waiting for and receiving an attack. Prescott had sent for re-enforcements and for ammunition, but they had failed to reach him. He saw a tired body of men called on to meet an attack of fresh soldiers and with only one or two rounds of ammunition to the man. The British had discarded their knapsacks, and now came up the hill in light-marching order. They planted artillery at the end of the breastwork, and raked its entire length, so that Stark was obliged to withdraw. The redoubt was assaulted on three sides. The Provincials poured in a last withering volley. Then, as the staggering British line came over the breastwork, they clubbed their muskets, and it was a hand-to-hand fight, but they could not stand against numbers and pointed steel.

Reluctantly Prescott gave the order to withdraw. With General Warren he was the last to leave the breastwork. At the moment of retiring Warren was struck in the head by a bullet, and fell dead.

All that was left of the little body of Colonists retreated in good order across the Neck. They were not pursued. Technically the British had won the Battle of Bunker Hill, for they had captured the position. In reality they had lost. The Colonists had inflicted so severe a loss on their enemies that the latter were unable to occupy Dorchester Heights and so prevent the Provincials from laying effective siege to the town. Though not in itself decisive, this battle is perhaps the most memorable of the Revolution. In one way it was one of the most remarkable battles of all time.

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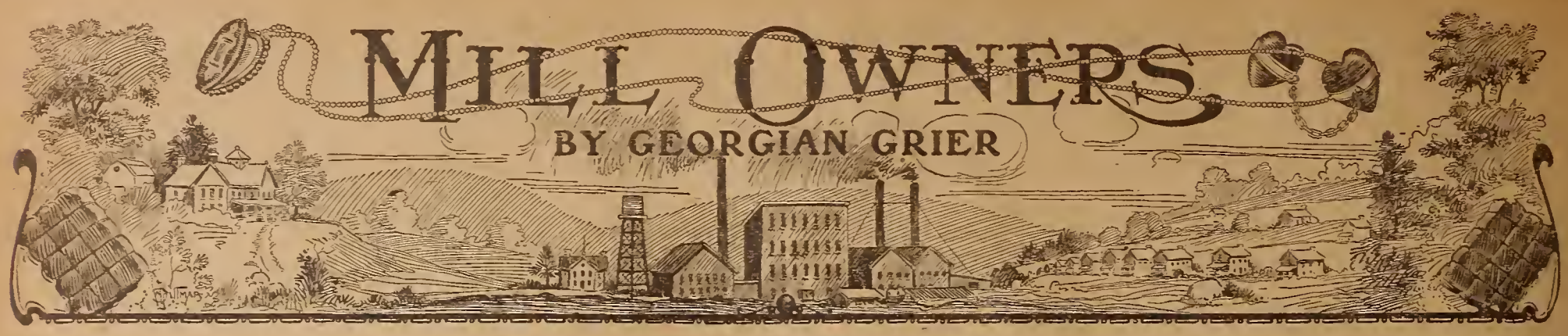
The Battle Between the "Bonhomme Richard" and the "Serapis"

IT IS indeed remarkable the interest that the mere mention of the name of John Paul Jones invariably calls forth. But why should not the lovers of American history be interested in the "Father of the American Navy?" The removal of the body of the great naval hero to this country has, during the past year, resulted in the payment of many beautiful tributes to the memory of the hero of the great battle between the "Serapis" and the "Bonhomme Richard." Indeed, there is little to be said about either the man or his achievements that has not already been said, but the retelling of his daring deeds never fails to entertain. Born in the year 1747, he followed the sea from his youth. In 1773 he settled in Virginia. He was made a lieutenant in the navy in 1775, when out of gratitude to General Jones, of North Carolina, he assumed his name. Made captain in the fall of 1776, he raised the first flag ever displayed on a United States ship of war. Of all his many adventures, that which best shows his characteristic and indomitable courage was the fight between the "Serapis" and "Bonhomme Richard." Jones was on the quarter deck, searching the sea with his night glass, as the old "Richard" lumbered toward her enemy. In the gloom it was impossible to distinguish friend from foe. Suddenly there came a hail from the "Serapis," "What ship is that?" There was no answer. "Answer, or I fire!" came the hail. And then, just as Captain Pearson of the "Serapis" ordered his men to fire, came a reply, "Boom! Boom!" It was the voice of the great guns of the "Richard." We should like to repeat in detail the story of this greatest of naval battles, but space will not permit. Every school girl or boy who has taken up the study of history is familiar with how John Paul Jones received the surrendered sword of Pearson after he had himself been beaten; with forty-two light guns he had silenced fifty heavy ones, and with a sinking ship he had captured a floating one.

Painted by George Gibbs

THE BATTLE BETWEEN THE "SERAPIS" AND THE "BONHOMME RICHARD"



MILL OWNERS

BY GEORGIAN GRIER

[BEGUN IN THE APRIL 10TH ISSUE]

"IT STARTED with the wages," Burke went on; "green hands did not receive anything until they learned the work. If at the end of three months I proved of use, the company would consider the matter of compensation, which would necessarily be very low at first. I answered a little sharply, I believe; then Derry became insulting. He raked up what he could about me, and I let it pass. He brought in you and the Widder Coon, and I let that pass, too. It might make trouble for you if I resented it, I thought. But it wasn't easy. Then he seemed to remember Meg's friendship for me, and—I knocked him down. Now good-by, old friend. I shall hurry over to the station and catch the early train up."

But instead of taking his hand, Ben swung around to a long box in which he kept some of his belongings. When he turned back he held a roll of money in his hands. Burke shook his head.

"No, no, Ben," he protested, "I don't want your money. I have the four dollars, and will find some way of earning more."

"It's for Meg, not you," said Ben. "'Tain't but a hundred dollars, but maybe it'll help ye find her. I'd be sorry 'bout ye goin' if 'twa'n't for that. Mebbe little Meg needs help."

Burke made no further protest.

"Thank you, Ben," he said huskily. "I will take it for Meg, and will tell her."

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CHAPTER IV.

"BURKE KENNEDY as I'm a sinner!" cried an eager voice; and Burke, standing rather disconsolately in front of a railroad ticket office on Broadway, swung around to meet the warm handclasp of his stroke-oar and roommate at college.

"Wilbur Scott, here!" he exclaimed, with equal eagerness. "Well, of all luck! I was just telling myself I hadn't a single friend or acquaintance in the whole city. Where did you drop from?"

Scott smiled and nodded down town.

"Two blocks and one to the left," he said, "is the office of Scott & Son, Cotton Brokers, and all about here is my stampeding ground. But what are you driving at now? Got any leisure? Could you crowd in a vacation of a few months, and place it at my disposal? We need just such a man as you, good presence, impressive manner, easy talking, able to persuade where persons don't want to be persuaded—that's you, as you were at college. What do you say? And oh, yes, I'll add there's a chance for a lot of money in it. We've been looking for the right sort of man for several days, and I thought of you, but didn't suppose it would be any use."

"What are you talking about, Scott?" asked Burke perplexedly.

"Here, swing around and come down with me to the office, and I'll explain on the way. Father's heard me talk a lot of you, and will be as eager as I am for your acceptance. Really, we're in straits."

Burke swung around into his friend's step, and arm in arm they went down the sidewalk, Scott talking eagerly, persuasively, and Burke listening, with undisguised relief coming to his face.

For three weeks he had been seeking out schools and interviewing principals and janitors and students, without so much as a clue to Meg's whereabouts. He had even been to intelligence offices, and written to school-supply bureaus for information as to whether they had been in correspondence with a teacher or would-be teacher of her name. This morning he had seriously debated the next step. The money was almost gone, and he was not so far along as when he first started, for confidence was now dulled. He must seek employment for means to continue the search, and was reading a placard of cheap trips South, and considering the advisability of book canvassing among country school teachers and scholars, when accosted by Scott. But by the time they reached the office his plans were wholly changed, and though he kept his face calm, inside was a glow of anticipation.

"Yes," said the elder Scott, after he had listened to his son's account and asked Burke a few questions, "I think you are the man we want; and I might add that I really feel pretty well acquainted with you through Wilbur. He has outlined our need to you, and I can only confirm it. Briefly, you are to go through the cotton belt, especially Mississippi, Louisiana, Alabama and Georgia, and buy us all the cotton you can under the figures we will give you. Last year we paid eight cents for some large special lots; this year we must pay a good deal more. Planters are trying to hold back their cotton for fancy prices. To a certain limit they are right, for the price was below profitable growing; but they have already passed that, and are now holding for excessive profit. It has made a stringency in the market, though a few small planters who are in need of money are beginning to break. It is this need that will be your strong point. There are many buyers in the South, but for the most part the checks of their houses reach the planters a week or ten days, or perhaps even a month, after purchase. By offering spot cash, within twenty-four hours, you can secure many vacillating growers. Wire us instantly of every purchase, and we will wire back money at once to your credit at the nearest bank. Buy all you can under our figures—as much under as you can, and the difference will be shared between us, the half of it being your profit; and we will advance expenses."

"Is there to be no limit to the amount of purchase?" asked Burke.

"Absolutely none. You will not be able to obtain too much—though even in such contingency there are brokers enough on the street who would be eager to take any surplus off our hands. An excess is barely possible, however. We supply cotton to hundreds of mills through the country, and in nearly every case their stock is running short. Every pound we have is being distributed among them, and unless we get at least five thousand bales within thirty days we shall have to cancel some large contracts at heavy loss. We want you to buy up a thousand bales, if possible, and would not object to fifteen hundred. But such a good fortune as that we cannot expect. What is it?" at something he saw in Burke's face.

"Aren't you placing a good deal of confidence in—in one you know so little about?" Burke hesitated. "Of course Wilbur and I were at school together, but that isn't very much—in business, I mean. I haven't made any computation, but such an amount of cotton must represent an immense sum of money."

The senior member of Scott & Son smiled.

"Not so much risk as you might think, young man," he said. "We will be in communication with you every day after you commence purchasing, and in this land of interlacing wires it is not easy for one to escape observation. Of course there is some risk, and we would not entrust such a mission to any one of whom we felt doubtful. Wilbur tells me you understand cotton," changing the subject abruptly.

"Most of my life has been passed in a cotton mill, sir."

"So Wilbur said. I would not be so favorable to your going otherwise. There is cotton and cotton, and a good buyer should be able to grade it with a touch of his fingers in the dark. You must let quality govern the prices as far as possible. I believe that is all—or no, you may naturally wonder why we do not have a regular buyer. We have had, but he sold his integrity to another firm. He really bought for them, while ostensibly buying for us. They got the cream of his purchases, and we had what they did not care for. He was a remarkably good buyer, and remarkably shrewd; so we did not discover his double employment until two weeks ago, when we dispensed with his services. Later we will have the business so in hand that Wilbur can leave it and do the buying. But just now we must depend on you. Do the best you can. When will you be able to start?"

"At once."

"As Burke rode up the long lane from the main road he saw what seemed to have been an accident"

"Very well. A train leaves for the South in an hour. Wilbur will advance your expenses."

Twenty hours later Burke alighted at a small way station in central Alabama. He was in the heart of the cotton belt, and had decided to try the planters direct rather than go to the small brokers and storekeepers of the towns, who, he was informed, often controlled considerable cotton through their advances to the growers.

But two days without a single purchase convinced him that he must try more energetic or more diplomatic measures. Only one man had seemed inclined to sell; and he, after a good deal of hesitation, and an admission that he needed the money badly, refused to let his forty or fifty bales go. On being pressed for a reason, he admitted that most of the planters were bound by a promise to a Colonel Bruce, of the southern part of the state, not to sell any cotton until a certain date, in order to force up the price; and that similar combinations were in existence in other sections and in adjoining states.

"Were in existence," corrected Burke mildly. "Only yesterday I heard of a buyer over in Georgia obtaining a thousand bales from a number of planters who needed money, and other breaks are beginning to be heard from in various sections—not many as yet, of course, but you know what they portend. A good honest price is being offered for the cotton now, and the small growers who are in great need of money understand it and will not hold out long. When a more general break comes, prices will inevitably rise, and you who hold out longest will be the ones to lose. You follow me?"

"Yes, yes, of course," dejectedly. "That's just what I've been thinking. I'm satisfied with the price and would be right glad to sell, but I promised the colonel to hold a while, and at any rate not to sell without letting him know first. The colonel's doing it for the good of us all, only he's wealthy and most of us are not. We need the money. Will you contract to take my bales, say a month from now?"

"Yes," readily, "but it must be at the going price then. I won't guarantee what I am offering you for forty-eight hours. I've only been in the country a few days, but I've seen and heard enough to believe another month will bring a marked decline. The house I represent needs the cotton, and will pay you spot cash."

"Could you raise it a quarter?"

"I am offering the price quoted in your local market this morning, and that makes you wait several months, I understand."

"Yes, they send it off and pay us when they get their pay, though they'll advance store goods on the account. But cash is right smart best. I wish I could get word to the colonel. His place is forty miles."

"I am going straight there," said Burke suddenly, "and will keep my offer open until after I see him. Would you like to send him a note?"

The planter's face brightened.

"Yes, I would," he declared. "I'll ask him to sell my cotton at once, for cash, and not below your price. If he can't, you may have it."

Burke struck directly across country, and on the way made a quick, vigorous canvass of the intervening growers. When he reached Colonel Bruce's plantation he had nearly two dozen similar notes, representing an aggregate of a thousand bales or more. The planters were all beginning to feel the same uneasiness, that their neighbors would sell first and skim the cream from the market.

◈

CHAPTER V.

COLONEL BRUCE'S plantation, as the country said, was from horizon to horizon; that is, he owned all the land that could be seen from his front and back piazzas.

As Burke rode up the long lane from the main road he saw what seemed to have been an accident ahead. A heavy, old-fashioned carriage was leaning to one side, and around it were a number of negroes, evidently making a great pretense of exerting themselves. Near by was a gentleman on horseback, who was directing their efforts with considerable annoyance.

"You clumsy bunglers," he stormed, "I ought to wrap this riding whip around every one of your lazy bones. Six of you, and can't lift that wheel out of the rut. Jake deserves to be flayed for driving into it in the first place. Lift now, you scoundrels! Lift! Lift!"

The negroes doubled their backs along the lower side of the carriage, and indulged in a prodigious amount of puffing and grunting. As he came up, Burke could not see that the carriage stirred in the least, and had a shrewd suspicion that outside the noise very little effort had been wasted.

"Cayn't do hit, marse," gasped a negro at the wheel, rising and wiping his face with a groan that hinted at dislocated bones. "Dat dar car'ge made out ob Noah ark timber an' weigh fohty ton, mos'. All de king's horses an' all de king's men couldn' lif' dat wheel out. Hit's plumb stuck."

"Well, some of you run back to the carriage house and get a block, and a piece of timber to use as a lever. Maybe you can lift it out that way. Make time now. Come, Aunt Ella," in a lower voice and addressing a sharp-featured little woman in the carriage, "you'd better get out and wait until that wheel's fixed. No use in remaining uncomfortable in there."

"I will stay right here, Colonel," said a cold, decided voice. "It was pure carelessness on Jake's part, and now they must right the carriage with me in it."

"Oh, very well; just as you prefer. Only I thought perhaps that a forty-five-angle seat might be a little uncomfortable. Good-morning, sir," to Burke, who had reined in and was waiting for a chance to speak.

"Good-morning. Colonel Bruce, I suppose?"

"Yes. What can I do for you?"

"I am buying cotton. Your negroes seem a little—er, irresponsible," glancing at the six negroes, who were all hurrying toward the carriage house as though glad to get beyond their master's voice, or perhaps to win approval by an ostentatious display of zeal.

Colonel Bruce made a grimace.

"All alike," he said; "though I fancy the carriage is somewhat heavy. It was made nearly a hundred years ago, when lightness of material was almost a high misdemeanor. The negroes apparently exerted their whole strength, and I could not see that the carriage stirred in the least."

"Apparently exerted," laughed Burke. "But I was near enough to notice that none of their muscles stood out, which would have been the case under much exertion. Ordinarily I would leave the carriage for them to remove, but the lady seems uncomfortable."

"I beg your pardon," said the Colonel hastily. "This is Miss Carter, my aunt, who is returning from the station, where she has taken our governess, Miss Collinton. Jake's customary carelessness dropped the carriage wheel into this hole, the only one along the road, I believe. Now if you can show the niggers some easier way to lift out the wheel, I'll be much obliged. I'll call them back."

"Quite unnecessary," answered Burke, dropping from his horse. "The lady would have to remain uncomfortable in the meantime. Now with your permission, Miss Carter."

He grasped opposite spokes of the wheel, and, without seeming to make any special effort, lifted it from the rut and drew the carriage toward him upon level ground. Colonel Bruce stared at him in amazement.

"Good heavens, man!" he cried, "what kind of muscles have you got?"

"Fairly strong ones," admitted Burke, "but nothing extraordinary for a man of my size—though I do try to keep them in good training. In this case, however, the negroes created a wrong impression of the difficulty. Here they are now," as the negroes came hurrying back with a great show of haste, bearing a small block and bit of scantling, which they had evidently selected for their light weight rather than for any possible service.

When they came up the negroes looked at the righted wheel with blank faces. Colonel Bruce nodded gravely toward the stranger.

"This young man saw through you more quickly than I, who thought I had probed the very depths of your laziness," he said. "He felt disturbed at the uncomfortable position of Miss Carter, and so lifted out the wheel himself. Now all of you except Jake get back into the cotton field. Skip! And mind, if you don't do enough work in the next two days to make me forget this, you go without circus tickets Saturday afternoon. Now, Mr.— I believe I haven't learned your name yet?"

"Burke Kennedy."

"Thank you, Mr. Kennedy. Now if you'll ride up to the house with me we'll talk cotton. My intention when you first stated your business was to get rid of you as quickly as possible. I'm not quite ready for buyers yet; they're a temptation to the small planters. Another week or ten days and it will be altogether different. A half-cent further rise is all I am waiting for now, and if we can hold out it is sure to come. I would be very glad to see you then, though there will be no lack of buyers. However, after that little episode of the rut, I feel I must know more of you. I believe I shall like you, Kennedy. Couldn't you arrange to be my guest for ten days, and not mention cotton? After that I would be at your service, and would do all I could to make our interests mutual."

Burke shook his head.

"It is very kind of you, Colonel Bruce," he said, "but my employers want cotton, and it is my business to furnish it to them. As to holding out ten days longer, that will be impossible. Many planters need money, and that need is already forcing them into the market. You must be aware of the fact. Indeed, some of your own neighbors to whom I have talked cotton within the past day or two, and who knew of my intention to come here, gave me letters to you. Here they are."

"'Then she isn't the one,' gruffly. 'Our Miss Collinton was the handsomest girl in the neighborhood'"

He drew the letters from his pocket and gave them to the colonel, who read them over carefully, one by one. His face became grave.

"Yes," he admitted, "I knew something of this. In fact, I have several such letters in my pocket. But I have been hoping to put them off from day to day. Perhaps, though, you are right, that much longer holding will be impossible."

"You ought to be a better judge of that than I am," said Burke. "Of course I am a buyer, and it is for my interest that the combination should break. But it seems to me that in this case we can make our interests identical. Of course you realize what a general break means to those who hold on too long?"

"Of course," laconically. "I have been raising cotton a good many years, and sometimes I have held on too long. I admit the prices now are exceedingly fair; but some years there has been loss, and I have been hoping to recoup myself in part for them. But there is risk; and I do not wish to influence my neighbors to lose, nor to lose myself. What is the best you can offer?"

"To duplicate the best bona-fide time offer quoted, and make it cash."

Colonel Bruce walked on for some paces in silence.

"That is fair enough," he said presently. "I will think it over to-night and give you my decision in the morning. Of course you will stay with us. Now suppose we ride on to the house and amuse ourselves for an hour in the billiard room."

But all this time an eager question had been burning in Burke's eyes and was trembling on his lips, only waiting for the business to be settled or laid aside. His hand rose in a quick, impulsive gesture to stay the tightening of his companion's reins.

"Just another moment," he insisted. "You mentioned a name—a Miss Collinton—a short time back. Will you tell me who she is? I had an acquaintance of that name who disappeared several years ago. I have been trying to find her."

Colonel Bruce's manner had been genial, his face smiling, his eyes twinkling. They suddenly hardened. He tightened his reins quickly, irritably. The horse started and threw up its head.

"What sort of person was your Miss Collinton?" he asked shortly.

Burke hesitated. He hardly knew how to answer.

"Well, I haven't seen her in four or five years," he replied doubtfully. "She was then about fourteen or fifteen, rather tall and ungainly, and—and not particularly pretty."

"Then she isn't the one," gruffly. "Our Miss Collinton was the handsomest girl in the neighborhood—the most beautiful creature I ever saw. The only point your description fits is the age. She was nineteen or twenty."

He struck his horse sharply and the animal, not used to such treatment, bounded forward.

The carriage was a dozen yards ahead, moving slowly. Miss Carter's head suddenly bobbed out, looking back. Apparently she had sharp ears, for the expression of her face showed that she had been listening and heard the whole conversation.

"Don't mind the colonel's grumpiness, Mr. Kennedy," she called, with a snap of venom in her voice. "He's been making a fool of himself, and feels sore. I didn't have a bit of use for that Marguerite Collinton when she first came; but the colonel did. He fell in love with her and ordered her to marry him, and she laughed; then he fell in deeper and asked her to, and she laughed again; right soon he was heels over head and he got down on his knees and begged her with tears in his eyes, and then Marguerite Collinton felt sorry and told him gently that she could not. But she refused to stay in the house any longer. I liked her for that, and an hour ago I drove her to the station."

The sharp face whirled around and the head bobbed back into the carriage. But by that time Burke was at her side.

"Where did she go?" he asked breathlessly. "Marguerite was her name."

"Oh, I don't know," indifferently, from inside. "She did not have time to buy a ticket. But the train was a local that stops thirty times in forty miles, and does not go out of the state. So it could not be far. It isn't any matter, though, for she is not the right one. This Marguerite is pretty." Then, the venom again in her voice, "The old fool! Fifty-two years old, with four half-grown children, and wanting to marry a girl of nineteen!"

CHAPTER VI.

THE next morning all the irritability was gone from the colonel's manner. He was again the courteous, friendly host.

"Complications—or no, I should rather say annoyances—sometimes arise from having an independent maiden aunt in one's household," he observed to Burke after their morning greeting. "But Miss Carter means well. Should a real calamity occur—physical, er, rather than mental, I might say—she would be the stanchest friend a man could have."

Then he dismissed the remembrance with a wide sweep of his hand.

"Now about the cotton," he went on more briskly. "I found several letters in my mail this morning, all asking for immediate sale, and hinting at doubtful market. Perhaps they are right. I think they are. How much will you take, for cash?"

"All you have, or can procure for me; and money will be paid within twenty-four hours of sale."

"Very well. I have two thousand or so bales, and can influence five or six times as much. We will have a look at it after breakfast and make out the papers. It is best not to take too much risk. Then I will order our horses and we will ride about the country and visit the others."

"Thank you; that will be pleasant and a lot of help," said Burke, "but I'm afraid it will be putting you to a good deal of trouble."

"Not at all. I wish to have a talk with them; and besides, I like you and shall enjoy your companionship. It will be pleasant to take a little trip just now. I —er, need the diversion. Are you easy in the saddle?"

"Fairly."

"It might be a little hard if you were not. We will have to ride thirty or forty miles in each direction to visit all the planters I have in mind. It will be three or four weeks of almost constant riding, very delightful, but hard if one is unaccustomed to the saddle. I will send notices to the planters, asking them to hold their cotton for us, and promising them cash payments," looking at Burke inquiringly.

"Yes, if they will hold the cotton we will give them to-day's quoted price, cash. Write them that. But there is another thing I feel it my duty to tell you. With general selling the price will go down some. That is inevitable. But it will not continue to decline, or stay down, as I believed and intimated yesterday. I had a letter of private information from my house this morning, which I feel at liberty to disclose only so far as may correct any wrong impression I made yesterday. In brief, there are indications of a tremendous upheaval in European markets, which may affect the world. It is my impression that if cotton should be held two months longer, the present price will not only be restored, but probably advanced."

Colonel Bruce looked at him curiously.

"Isn't that making disclosures to your own detriment?" he asked.

"I don't think so. I have a good deal of faith in frankness, even in business matters. And I don't wish to leave an impression of withheld or perverted facts. It is due you in this case."

"Perhaps, but hardly to be expected. You want the cotton, I and my friends are ready to sell. I have been growing it a good many years, and am willing to depend on my experience. We will make the deal immediately after breakfast. I am satisfied."

Burke was satisfied, too; for the letter had authorized him to offer a cent more than the previous figures, which themselves were a half cent above the locally quoted price. That made a cent and a half profit—a tremendous margin.

Two hours later they were at the nearest telegraph office, with a message flashing North for the money, which in twenty minutes was flashing back.

"Do you think there will be any chance of our finding a clue to Miss Collinton?" Burke asked hesitatingly, as they rode across country toward the house of the next planter. "You must pardon me for —for bringing her name up, but it is very important I should find her. There is an inheritance waiting for her in the North. I was searching after her when I took this position to come South. Indeed, were it not that I felt this cotton buying an imperative duty just now, I would drop it all for the search. Unfortunately my time isn't my own."

"You think this is the right girl?"

"I don't know. Your description says she is not; but this is the first clue I have found, and the names are the same—or no," recollecting himself, "Collinton isn't her real name, but that of the people who took her in. She is Marguerite Bannerman—the girl I mean—though she doesn't know it yet herself."

[TO BE CONTINUED NEXT ISSUE]

Calgary Irrigation Project

By Ernest Cawcroft

It is within the past year that the people of this country, and the progressive farmers in particular, have arrived at an appreciation of the magnitude of the irrigation project under construction in the Province of Alberta. That province of the Dominion, stretching from the International Line to the regions of the Northern Frontier, is seven hundred miles in length and four hundred miles in width. Situated between Saskatchewan and British Columbia, the Province of Alberta has a greater area than the British Isles with several of the smaller European principalities combined; and it is in the center of this fertile wheat-raising and grazing province that an irrigation project is undergoing construction, which involves more acres of land than comprise the state of Connecticut. The three million acres of watered lands included in the Calgary project will constitute an agricultural empire. To-day one or more sections of this vast project is completed, and colonists are arriving from all parts of the world to till a soil whose fertility only needs an assurance of irrigation to make it the finest on earth; and it is of interest to remember that the completion of this entire project within five years will make it the greatest irrigation system in the world. Between the International Boundary and Mexico it is estimated that two million acres are to be provided with irrigation as a result of the federal appropriations already made; but a comparison will show that not only is the Calgary project greater than any of the plans of the United States government, but that it exceeds in area any contiguous tract of land watered by the modern dams of the Nile in Egypt.

There is an increasing interest in the Calgary project from a news standpoint because last year thousands of Americans settled in southern Alberta; and it is known that a larger number from Iowa, the Dakotas and other Western states are moving across the border this spring to take advantage of the fertile agricultural lands with an assured, though artificial, rainfall.

The development of this vast project is inseparably connected with the completion of the Canadian Pacific Railroad. During the succeeding ten years the railroad officials, as well as farming experts, were convinced of the availability of Alberta as the future seat of an agricultural empire. Matured plans were under way for the development of the region when the dry seasons of 1892 and 1893 occurred. Now, as a matter of fact, the climate of southern Alberta combines moderate winters, long summer days, with an equable amount of moisture. But these two summers of deficient rainfall convinced the officials and governmental experts that it was worth while to construct such an irrigation works as would be sufficient to forever remove that vexing question from the calculating minds of the settlers.

This decision led the railroad officials to select three million acres of land, which pivot on the city of Calgary. The strip extends one hundred and fifty miles along the Canadian Pacific road in a westerly direction from Calgary, and it has an average width of forty miles. A glance at the map will present a strip of land bounded on the north by the Red River, flanked on the south by the Bow River, and that is the region which is the center of the largest irrigation project of this present generation.

DEEP CUT IN MAIN CANAL

CATTLE GRAZING ALONG SECONDARY CANAL

Three million acres of land have been equally divided in eastern, central and western sections. The greater portion of the completed work has been done on the western section. Thousands of colonists are now settling in that district; and the attention of the officials is being directed to the work on the other sections, which will absorb goodly portions of the five million dollars allowed for this enterprise.

Water is now being taken from the Bow River to irrigate this western section of one million acres. The engineers having this enterprise in charge realized at the outset that an irrigation project would be futile which did not find a basis in an inexhaustible supply of water. The Bow River takes its rise near the Great Divide, high in the Rockies, amid the ever-freezing and continually melting glaciers; two miles below Calgary this never-failing supply has been tapped and from that point on the Bow the main canal, seventeen miles in length, has been extended through the western section. One hundred and twenty feet wide at the water line, and tapering to sixty feet at the bottom of the irrigation canal, this waterway is a marvel of construction. Ten feet in depth, and the sides protected by approved engineering devices, this main canal will absorb two thousand cubic feet of water a second, leaving a margin of one thousand cubic feet in the Bow at its lowest point on the governmental records. Running from this main canal are secondary canals one hundred miles in length, and in turn eight hundred of smaller ditches connect with the secondary system. It was the aim of the engineers—and they have succeeded, unlike similar enterprises—to take the water for irrigation purposes to the gateway of every prospective farm in the three million tract. The construction of small, inexpensive and personally located sluices by each settler will assure him a regulated rainfall capable of sustaining from two to three crops a year.

In view of the fact that the American Congress of Irrigation has urged the United States government to adopt similar legislation, and because of the efforts of President Roosevelt to conserve the national resources, it is interestingly important to remember that Canada has reserved title to the water, timber and mineral rights in the Dominion. Under the terms of the Canadian statute, the Calgary company was compelled to take out patents covering the water and land rights involved in the irrigation project; these water rights "run with the land," as the lawyers say, and when patents have been filed covering the available supply in any particular stream, additional privileges are not allowed which might interfere with existing interests. The practical effect of this provision is that the farmer who buys land, and contracts to pay fifty cents a year for the irrigation afforded from the Bow River, cannot be deprived of those privileges in perpetuity, either through conflicting interests or as a result of a certain increase in the yearly value of the water privileges which have been extended.

Having conquered engineering difficulties exceeded only by those of the Isthmus of Canada, and having converted a great river to the uses of an agricultural empire, the world will view with interest the wheat, alfalfa and timothy, the horses and the cattle, produced on the three million acres of southern Alberta.

An Unexpected Rescue

By L. Pendleton

Two young sportsmen from a city far to the south, returning from an extended canoeing trip in the wild Canadian north, had halted to rest and eat just where the White River joins its waters with those of Lake Temiscamingue, and were about to push on, when an extraordinary event detained them. On the portage path which led presumably to some inland lake a young woman suddenly appeared. As she ran down to the river's edge, calling to them frantically, they had time to observe that she was slim, graceful, neatly dressed and unusually pretty for a woman of the wilds.

"Oh, Messieurs! Wait—wait!" she implored. "Will you"—halting within three feet of the motionless canoe—"will you permit that I go wis you? They have take my canoe! You go to Baie des Pères? I go to Pointe Marie. It is by you' road. You will not lose."

"Of course, if it will oblige—" began Gordon.

"Certainly," said Merriwether; and both young men gazed into her appealing black eyes.

"Messieurs, it is so good," she said, all gratitude. "Toussaint will give you thanks." Then, after a nervous little laugh, she spoke apologetically, "You think I would scare' to go by you' canoe; but oh, Messieurs, it is necessity! *Mon Dieu!* I *mus'* go, me! You have mother—sister—" Tears were seen in her eyes.

"Don't be afraid," they begged of her. "We'll take you anywhere you want to go."

Voices and heavy steps were now heard among the trees whence she had come. The girl turned her pretty head like a startled squirrel at the sounds, then laid hold of the gunwale of the canoe, stepped cautiously in, and crouched down.

"Quick, Messieurs!" she whispered. "They come for me! *Paddle!*"

She caught up a rubber blanket, spread it out, and, resting her head against a roll of tent-cloth, covered herself completely. Merriwether pushed off, the two paddles were dipped deep, and the canoe glided rapidly away. But it was still within easy hail when two men appeared on the shore—one thin, dark and middle-aged, the other young, stout and ill-favored.

"*Holà,* Messieurs!"

"Well, what is it?" called out Gordon in answer. The paddles were lifted out of the water and the canoe drifted.

"Have-a you see a young letty come by ze portage?" shouted the man.

"Yes; but she has disappeared," Merriwether promptly answered.

The two French Canadians looked at each other, at the canoe out on the water, and into the woods behind them, hesitating, puzzled.

"If we see her again we'll tell her you are looking for her," proposed Gordon; and then, waiting to hear no more, the paddles were dipped again and the canoe skimmed over the water, the two men on shore following it with half-suspicious eyes, but not venturing to object to its departure.

"The man who call he is *mon père,*" explained the girl, partly uncovering her face. "You see that other of the bull-neck, he is Prosper Lavilette. He thinks he will marry me—that *cochon!*"

"And you think he won't, eh?" laughed Merriwether.

"It's quite plain that he'll have no such good luck," remarked Gordon.

Father and lover had now disappeared in the forest, and presently the girl sat up boldly in the canoe and frankly told her story. The trouble began, she said, after she went home from the convent school in Baie des Pères to her father's farm near the Rivière Blanche. For her mother was dead, and her father had taken another wife, and the new madame Mérimée had a brother who came too often in his canoe from the village of North Temiscamingue. This was Prosper Lavilette, of the bull-neck, the odious *cochon.* He and his sister agreed that he should marry Mademoiselle Mérimée, but the young lady had other views. The father was ready enough to be persuaded, for Prosper had done well as the keeper of a half-way house where meals and liquor were furnished the lumbermen passing back and forth from the Quinze Lake district.

So Toussaint was told to come to the White River farm no more. Who was Toussaint? He was the only man Colinette Mérimée would ever consent to marry. She had seen him first at Baie des Pères, one day when all the girls walked out under guard of Sister Seraphine. She caught his eye and looked away, but knew that he followed on the other side of the street and looked and looked again. And she was glad, for there was none like him in all Baie des Pères. It was true. Some men have as good looks and no more, but Toussaint proved to be as good and wise as he was handsome; and the Messieurs need not laugh, for it was indeed true! He got to speak to her twice that year, besides smuggling letters into her hands, and as soon as she went home he followed her.

But Mérimée *père* declared that no man without money should be fiancé to a daughter of his, and so there was delay, for Toussaint had lost his clerkship in the Hudson Bay Company's store, a young Englishman having been sent out by some one in authority to take the place. Then came the *cochon* and pressed his suit, and Colinette's heart was broken many times. Indeed, it was quite true. Failing in Baie des Pères, Toussaint took the place of book-keeper in Clark's lumber camp at Pointe Marie; but the pay was only thirty dollars by the month, and Papa Mérimée declared it was not enough—Prosper could show earnings twice as large. What matter that he had a bull-neck and was a *cochon*—with earnings twice as large!

"But thirty dollar is plenty," insisted the girl. "Is it not so, Messieurs? Here it is not city like Mon'real, and we live grand wis thirty dollar, Toussaint and me."

The "Messieurs" seeming to be dubious she passed the point and continued, "So Toussaint stayed away, and Prosper came every week. Toussaint did not yield, but only waited. But at last, in spite of all, they fixed the day; for so it may happen among the French—the father must have his will."

And this was the day. That *cochon,* Prosper, had come yesterday, such was his indecent haste. The priest was to reach the White River in the afternoon and all would be over. But in the morning the unwilling maid put on her Sunday gown and slipped away, eager to trust herself alone on the big lake in order to escape to Pointe Marie. Alas! her canoe had been

[CONCLUDED ON PAGE 21]

Men Worth While in History

Washington Irving

"Little minds are tamed and subdued by misfortune, but great minds rise above it."

THE most popular of American prose writers, living in what is known as the national age, was Washington Irving. Irving has often been called "The American Goldsmith," on account of the similarity of his style to that of Goldsmith. Not the least of Irving's many merits was his absolute purity of every word and thought. In this respect as well as others, the image of the man is reflected in his work. Irving was born in New York in 1783. He studied law, but did not practise it, and engaged in mercantile pursuits, but without success. He passed twenty-three years of his life in Europe, four of them as Minister to Spain; the remaining years of his life he spent at Sunnyside, on the Hudson, where he died in 1859. Mr. Irving's great success in a literary way came with the publication of "The History of New York," by Diedrich Knickerbocker (a humorous history).

It had immediate and remarkable success and at once placed him in rank with the best writers of his day. In 1820 "The Sketch Book" was completed and published in London, also "Bracebridge Hall," and "The Tales of the Traveler," which appeared a few years later. "The Sketch Book" was ever popular in America, containing such masterpieces as "Rip Van Winkle," "The Broken Heart," "Legend of Sleepy Hollow," and many other popular sketches. While in Spain he began his "Life of Columbus," which grew out of some studies he made at that time of the works of Spanish writers on the subject. Other results of his stay in Spain were his "Conquest of Grenada," and his delightful "Tales of the Alhambra."

Having taken up his abode at Sunnyside in 1864, Irving during the next two or three years engaged in preparing a uniform edition of all his works. He then issued his "Life of the Mahomet and His Successors," and his "Life of Goldsmith," the last being in all respects one of the most delightful biographies ever published. Irving's "Life of Washington" was written after he had passed the allotted period of life, threescore and ten. The work dragged from the beginning and did not do credit to Irving's power and judgment as a historian, nor to his skill and elegance as a writer. Irving's death, on November 28, 1859, was an occasion for universal sorrow. His country loved and honored him, and the civilized world mourned the demise of the then greatest prose writer.

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Robert Fulton

ROBERT FULTON, genius, artist, engineer, prophet, statesman and inventor, is at last to receive the recognition due him by his countrymen and the people of the world generally. It will be a hundred years next August since Fulton successfully demonstrated the practicability of water navigation by steam, and the centennial is to be fittingly celebrated. An international exposition will be held in Paris, and a monument will be unveiled that shall be a memorial to Robert Fulton, Denis Papin and Jouffrey D'Abbons, the three men who were simultaneously successful in the demonstration of navigation by steam. There is now in course of erection on the banks of the Hudson a $600,000 mausoleum to which will be removed the body of Fulton. For ninety years the grave of the great inventor has been unmarked and neglected, more or less, in Trinity churchyard, New York.

Fulton was born in Little Britain, Pennsylvania, in 1765. His father dying when he was three years of age, young Fulton was obliged in his early years to depend upon his own exertions for subsistence. He early cultivated the art of drawing in the hope of qualifying himself for the profession of a painter. He went to Philadelphia at the age of seventeen years, and for some time managed to support himself and his widowed mother by the practise of painting portraits and landscapes. When his twenty-first year arrived he had saved sufficient funds with which to purchase a small farm.

Fulton went to England to meet a Mr. West. He copied pictures of the nobility, and he spent two years in the vicinity of Exeter, where, among the aquaintances, he met the Duke of Bridgewater, the father of the vast system of inland navigation. At his suggestion Fulton abandoned the profession of painting and entered upon that of a civil engineer. Fulton had also become acquainted with Earl Stanhope, who had entertained the hope of being able to apply the steam engine to navigation, his plan involving the use of a peculiar apparatus modeled after the foot of an aquatic fowl. Fulton suggested to the earl, in writing certain objections to this, and indicated the very ideas which were afterward successfully worked out upon the Hudson River in New York.

In 1801 Robert R. Livingston became U. S. ambassador to France, where he met Fulton. Fulton forthwith communicated to him the plan which he had laid before Earl Stanhope in 1793, and Livingston offered to provide the funds necessary for new experiments, and to enter into a contract for Fulton's aid in introducing the new method of travel into the United States, provided his experiments were successful. In the two succeeding years Fulton experimented very successfully, and when measures were taken to construct a steamboat on a large scale in the United States, an order for an engine was lodged with Watt & Boulton, of England, without specifying the object to which it was to be applied. Livingston in 1803 again secured from the New York state legislature an exclusive privilege of navigating the waters of that state by steam. The engine from England reached New York in 1806, and the vessel to receive it was finished and fitted with her machinery in August, 1807. On August 11, 1807, the "Clermont" for so she was ultimately named, made her first passage from New York City to Albany. The distance of less than 150 miles was made in 32 hours. Up to that time, sloops between the two cities, had taken an average of about four days to make the trip. Public interest in the new enterprise was great, and regular trips were made at stated times until the end of the season. The "Clermont" was remodeled and rebuilt in the winter of 1807-8, with accommodation for passengers, and she began regular trips for her second season in April, 1808. In the spring of 1808 Fulton was married to Harriet, daughter of Walter Livingston. In the further prosecution of the navigation of the Hudson River, Livingston and Fulton were opposed by parties who sought to deprive the latter of the honor of his great invention, in favor of John Fitch, of New York, but without success. The closing years of his life were devoted to devising a system of ferriages between New York and Brooklyn. Five steamers were flying between New York and Albany when Fulton died, February 24, 1815.

The successful introduction of steam navigation was only one of Fulton's many achievements. In 1778 the citizens of Lancaster, having been forbidden by the town council to illuminate in honor of Independence Day because of the scarcity of candles, Robert Fulton, then thirteen years old, invented the sky rocket, as he said, "to illuminate the heavens instead of the streets." It was also said of him that when he was ten years old he made his own lead pencils by a process that was patented twenty years later by Conte, a German. At the age of fourteen an air gun was another of his inventions. In 1801 he invented a submarine boat which was the forerunner of those now in use.

His invention of the marine torpedo developed the fundamental principles upon which most of the many inventions now in use are based. His first experiments were conducted in France under the auspices of Admiral Villaret of the French navy, and he was successful in blowing several anchored vessels to atoms. Napoleon the Great took a deep interest in his experiments, and the "Nautilus," his "diving boat," as the submarine was called, kept the British fleet in a state of apprehension. He promised Napoleon that he would "deliver France and the whole world from British oppression," but, for some reason or other, his negotiations with the French government fell through, and in December, 1806, he returned to the United States and submitted his plans to our government.

Mr. Fulton carried out a series of experimental demonstrations of torpedo and submarine warfare in the harbor of New York. Mr. Fulton designed the first steam man-of-war that was ever floated. It was authorized by Congress March 12, 1814, her keel was laid June 20th, and she was launched October 29th of the same year. She was called "Fulton the First." The boat was 156 feet long, 56 feet beam, 20 feet deep, a draught of 11 feet and a displacement of 2,475 tons.

An Unexpected Rescue

[CONTINUED FROM PAGE 20]

secreted, her flight was observed, and she was followed. But, thanks to the good Messieurs, she had escaped in spite of all.

It was midday when the canoe rounded Pointe Marie and entered a narrow bay. The log buildings of a lumber camp were now seen on a rising slope above the shore. Throughout the journey of nearly four hours the runaway had kept up her spirits, laughing and chatting with her rescuers in her quaint way, but at sight of the camp her courage failed.

"Oh, Messieurs"—tearfully—"for why have I come? It is so long that I have not seen Toussaint, and if he should not —*Mon Dieu!* if he have forget me for some girl in Baie des Pères?"

"I might leave the two of you here and go and speak to him," suggested Gordon, as he ran the canoe into a little cove, out of view from the camp.

"No; let me go," said Merriwether. "I want to see this thing through right. If he's not ready to do the proper thing I'll make it hot for him."

The camp was found practically deserted, the choppers having already eaten and returned to their labors. The blacksmith hammered in his shop, the cook washed tin dishes in the great log eating room, but the sleeping camp was as quiet as at midnight. In the office one belated chopper was found buying tobacco from a bright-eyed, slender and not ill-looking young man, who was Toussaint.

"You are Mr. Toussaint Bonâme?" asked Merriwether as soon as the chopper had gone.

"So I am call', Monsieur."

"My friend and I have just come down from the White River. We heard of you there."

"Of me, Monsieur?"

"Yes; Miss Mérimée spoke of you."

"Colinette!"

"That is her name, I believe. She is to be married soon. You know Prosper Lavilette, no doubt."

In a moment Merriwether learned all he wished to know, for the young man turned white and was overwhelmed.

"But I really think she would prefer to marry some one else."

"Me—me, Monsieur?"

"Surely you don't intend to let that pig of a Prosper cut you out?"

"But what would you? French daughter obey her familee."

"Unless her lover has spunk enough to run away with her and let her 'familee' take the consequences."

"Impossible! Colinette would not listen to such propose—no, never!"

"What an ass!"

Merriwether was now thoroughly disgusted and Toussaint was altogether bewildered.

"But suppose she did agree to run away with you, where would you take her and find some one to marry you?"

"Baie des Pères."

"What would you do with her then—bring her here?"

"A lumber camp! No, no. I put her with my aunt at Baie des Pères, and me, I go to see her three time the week."

"Are you able to keep her in comfort?"

"Yes, Monsieur. This is not a city like Mon'real—money go far."

"Well, I guess it's all right," the young American mused. "Get ready," he added after a moment. "She's waiting for you down there. Now, don't go mad! Listen! you'll want your canoe—and bring some lunch, will you? We're all hungry."

There were some troublesome preliminaries, but with the help of Merriwether and Gordon they were successfully disposed of, and there was a marriage in Baie des Pères that night which neither Mérimée *père* nor the bull-necked *cochon* could ever hope to annul. The priest was placated, to begin with, by a present of ten dollars, and later the two Americans made up a purse for the bride, instructing her to purchase such wedding gifts as might please her fancy.

Although the little south-bound steamer left at five o'clock the second morning after, Monsieur and Madame Mérimée stood on the rickety wharf in the gray dawn to see the two sportsmen depart. Madame repeatedly declared that they had "dropped out of heaven" in answer to her prayers, and at the last moment she impulsively kissed both of her not unwilling angels in the presence of her smiling husband.

"'Quick, Messieurs,' she whispered. 'They come for me! Paddle!'"

Entertainment for the Younger Readers

THE DOG IN THE MANGER

Photo by Underwood & Underwood

Old-Time Riddles

WHY all things dark and mysterious should have such a hold upon the human imagination is one of those riddles of life which we shall solve when man has possessed himself of absolute wisdom. But until then we shall, I suppose, keep on trying to guess life's mysteries, and thereby enlarging our capacities for understanding.

Parables, dream significations, riddles and puzzles of all descriptions have ever been popular with mankind. Even the cave man of superior wisdom, I dare say, had his dark sayings wherewith to mystify his duller brethren.

It is not so very many generations ago that the riddle held full sway in the social or family gatherings about the big fireplace; and of late there has been a tendency to revive this form of puzzle to share popular favor with the more prevalent enigmas, charades, geometrical forms and other familiar occupants of the "Puzzle Department."

All, of course, are familiar with the riddle of the Sphinx, as related in Grecian mythology. According to the story, Thebes was ravaged by a monster, called the Sphinx, which propounded to all travelers who came that way a riddle, with the condition that those who could solve it should pass safely, but those who failed should be killed. "What animal," asked the Sphinx, "is that which in the morning goes on four feet, at noon on two, and in the evening upon three?" It was solved by Edipus, who answered: "Man, who in childhood creeps on hands and knees, in manhood walks erect, and in old age walks with the aid of a staff."

Among the popular riddles of a few generations back is the "Egg" puzzle, which is too pretty to be lost in oblivion:

"In marble walls as white as milk,
Lined with a skin as soft as silk;
Within a fountain, crystal clear,
A golden apple doth appear.
No doors there are to this stronghold—
Yet thieves break in and steal the gold."

Another easily guessed one was:

"Flour of Virginia, fruit of Spain,
Met together in a shower of rain;
Put in a bag tied 'round with a string,
If you tell me this riddle, I'll give you a pin."

Of course it is easy to guess "A Plum Pudding."

"What shoemaker makes shoes without leather
With all the four elements put together—
Fire and water, earth and air?
Every customer has two pair."

Such a strange shoemaker must be none other than "A Horseshoer."

"Round as an apple, deep as a cup,
All the King's horses can't pull it up."

was answered by "A Well."

"Long legs, crooked thighs,
Little head, and no eyes."

would be a greater puzzle to modern guessers than to old-time folks who sat around the great fireplace and often saw the "Tongs" in use.

"There was a man who had no eyes,
He went abroad to view the skies;
He saw a tree with apples on it,
He took no apples off, yet left no apples on it."

The man had but one eye, and the tree had two apples on it.

Of a rather different species of riddle that, on its face, appeared to be a mere matter of addition, but which of course contained a hidden "catch," we have the following:

"Thomas A'Tattamus took two Ts
To tie two tops to two tall trees,
To frighten the terrible Thomas A'Tatt!
Tell me how many Ts there are in all that."

Of course there are but two Ts in "that."

"As I was going to St. Ives,
I met a man with seven wives,
Every wife had seven sacks,
Every sack had seven cats,
Every cat had seven kits;
Kits, cats, sacks and wives,
How many were there going to St. Ives?"

"There was once," grandfather would say, "a man who owned a fine large orchard, around which was built a high stone wall. This orchard was upon a very steep hillside, so steep that when an apple dropped from a tree it would roll down the hill. But the singular thing about it was that all the apples, by the time they had reached the stone wall at the foot of the hill, were stones."

This was a strange thing indeed, for the children of course had perfect confidence in grandfather's veracity, and wondered over the story until grandfather explained that as the owner of the orchard was named Stone, of course all the apples were Stone's.

Another story in grandfather's repertory was equally mystifying to his youthful audience. "I once knew a man," he would say, "one half of whose whole body was as black as a negro's, while the other half was the natural color." This, too, was marvelous until grandfather, after enjoying their mystification, would clear it up by explaining that as the man *was* a negro, his *natural* color was also black.

ELMA IONA LOCKE.

Polly Putoff

HER real name was Polly Putnam, but everybody called her Polly Putoff. Of course you can guess how she came to have such a name. It was because she put off everything as long as she possibly could.

"Oh, you can depend on Polly for one thing," Uncle Will would say. "You can depend on her putting off everything, but that is all you can depend on." And I am sorry to say he spoke the truth.

"Polly, Polly," mother would say in despair, "how shall I ever break you of this dreadful habit?"

It was just three days to Polly's birthday, and she had been wondering very much what her mother and father intended to give her. She thought a music box would be the best thing, but she was almost afraid to hope for that.

"Polly," mother said that morning, "here is a letter that I want you to post before school."

"Yes, mother," answered Polly, putting the letter in her pocket.

As she reached the schoolhouse she saw the girls playing, and she stopped "just a moment." Then the bell rang, so she could not post the letter then. She looked at the address. It was directed to a man in the next town. "Oh, is hasn't got very far to go. I will post it after school."

After school she forgot all about it.

"Did you post my letter, Polly?" asked mother, when Polly was studying her lessons that evening.

Polly's face grew very red and she put her hand in her pocket. "I will post it in the morning," she said faintly.

"It is too late," answered mother. "The man to whom the letter is directed went away this evening, and I haven't got his address. It really only matters to yourself, for it was an order for a music box for your birthday."

"Oh, mother!" exclaimed Polly, "is it really too late?"

"I don't know where he is now," said her mother. "If you had not put off posting the letter he would have received it before he started, and sent the music box. It is too late now."

Wasn't that a hard lesson? It cured Polly, though; and she has nearly lost her old name.—Christian Uplook.

A Few Conundrums

WHAT games do the waves play? Pitch and toss.

How do bees dispose of their honey? They cell it.

What soup would cannibals prefer? A broth of a boy.

What is the oldest lunatic on record? Time out of mind.

When is a clock on the stairs dangerous? When it runs down and strikes one.

Why is a pig in the kitchen like a house on fire? The sooner it's out the better.

Why are troublesome visitors like trees in winter? Because it is a long time before they leave.—Evangelical.

Rainy-Day Diversions

IT WAS the mother of quite a large family who declared, "I can bring up a whole family with a pair of scissors and a mucilage bottle." And she was not very far from right. Bright days, as a rule, take care of themselves, for there are so many pleasant sports to be enjoyed out of doors. But the tug of war comes with the rainy weather. Then something new and interesting must be planned to occupy the children's time and attention, and for boys and girls of varying ages there are many varieties of pleasant and instructive occupations to be enjoyed with scissors and paste.

Little girls from eight to twelve may give a "Reception to Royalty," by collecting pictures of kings and queens, emperors and empresses, princes and princesses of various royal courts. While cutting them out carefully, and preparing them so that they may stand alone, mama may tell them the story of their royal lives and something about the country and people where they live. The "standers" are made by pasting a strip of moderately thick paper or pasteboard an inch wide, perhaps, full length at the back of the picture. Let the pasteboard broaden at the heel; cut it an inch beyond the toe. When partly dry bend at the heel to form a right angle. The figures can then stand quite firmly, and be moved from place to place.

When a sufficient number of people are made ready for the reception, then the Blue Room furniture at the White House (stationers sell these pictures at a penny or two a sheet) may be cut out in the same way, and, with the necessary formalities of presentation, the reception may go on. Little girls who have a taste for millinery, dressmaking or doll dressing may cut all sorts of hats, bonnets and garments, and arrange for a spring or fall opening.

Boys of the same age may purchase an endless variety of soldiers. Army and navy officers, artillery companies, army wagons, ambulances, etc., also pictures of famous war generals and their staff officers; in fact, a complete set of classified pictures may be secured for representing an entire army. These cut out carefully and strengthened with "standers," as described above, furnish material for many a well-fought battle. The instruments of slaughter a couple of bean blowers manipulated by two small boys; brigadier generals both valorous and famous; fallen heroes carried off the field in ambulances; horses and men falling on every side; the quick return to life of entire companies, and the rapid "setting up" preparatory to a new encounter, are all very interesting to small boys. Fences, trees, rocks, hills, horses, tents and the pleasant bivouac scene may all be played by preparing the required pictures. Boys who have a taste for animals and birds may prepare extensive "Zoos;" also fish, for aquariums.

FRANK H. SWEET.

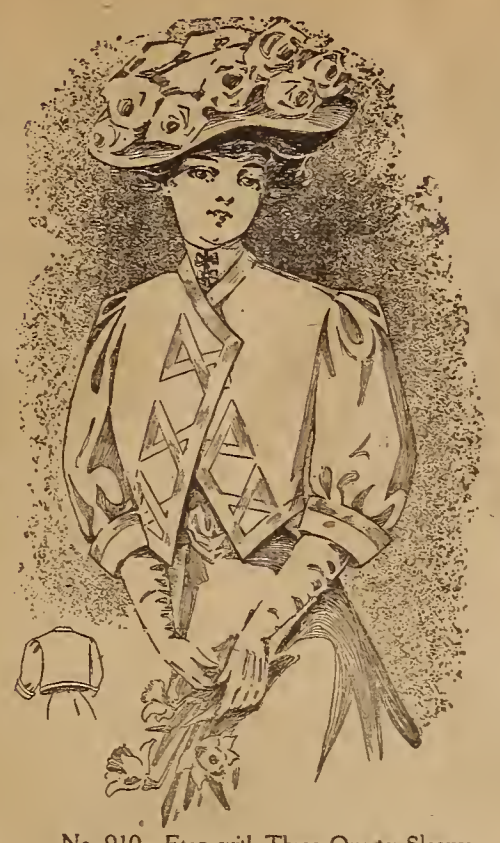
More Than Promised

THE other day we had a letter from the father of the boy who won second prize in FARM AND FIRESIDE's last year's Pony Contest. He said: "FARM AND FIRESIDE did more than they agreed to by my son. Instead of sending him a fifty dollar talking machine, they sent one that cost seventy-five dollars and instead of six records they sent ten." This is characteristic of many of the letters we receive. FARM AND FIRESIDE always gives its family a "square deal" whether in prize contests or in editorial or advertising matter. Nothing else "goes" with FARM AND FIRESIDE.

Miss Gould's Practical Fashions

THE striped gown is to be decidedly the fashion this summer, whether it happens to be made of gingham, costing a few cents a yard, or sheer and exquisite Pekin striped marquisette. Stripes are all the vogue, but it is the way they are manipulated that gives the gown its new feature. The very latest idea in making up a costume of any striped fabric is to combine in one gown both straight and bias lines.

The striped costume here illustrated is a most adaptable design, because it may be used for either a silk or cotton fabric. The shirt waist has clusters of tucks on the shoulder, and the fancy pointed yoke, which is applied, may be used or not, just as one prefers.



No. 908—Tucked Shirt Waist with Applied Yoke

Pattern cut for 34, 36, 38 and 40 inch bust measures. Quantity of material required for medium size, or 36 inch bust, four yards of twenty-seven-inch material, or two and three fourths yards of thirty-six-inch material

No. 909—Thirteen-Gored Skirt

Pattern cut for 24, 26, 28 and 30 inch waist measures. Length of skirt in front, 40 inches. Quantity of material required for medium size, or 26 inch waist, nine yards of twenty-seven-inch material, or seven yards of thirty-six-inch material

CLUSTERS of tucks will be seen on many of the prettiest of the summer dresses. They will be used in both vertical groups and arranged en bayadere. Many of the lovely silk mull and tissue gowns which will be worn this summer will have no other trimming save groups of tucks, with perhaps the introduction of a lace yoke for the waist. The fact is that the new sheer summer fabrics are so lovely in themselves that they need but little trimming. Many of the printed silk mulls show not only stripes, but exquisite floral designs. And then there are the lovely ombre striped silk mulls, as well as the plaid tissues and the wonderfully beautiful marquisettes.

No. 911—Tucked Waist with Square Yoke

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medium size, or 36 inch bust, three and three fourths yards of twenty-two-inch material, or two and one fourth yards of thirty-six-inch material, with one half yard of all-over lace for collar and yoke

No. 912—Gored Skirt Tucked in Clusters

Pattern cut for 22, 24, 26 and 28 inch waist measures. Length of skirt, 42 inches. Quantity of material required for medium size, or 26 inch waist, eleven and one half yards of twenty-two-inch material, or nine yards of thirty-six-inch material

No. 908—Tucked Shirt Waist with Applied Yoke

No. 909—Thirteen-Gored Skirt

No. 910—Eton with Three-Quarter Sleeves

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medium size, or 36 inch bust, three and one fourth yards of twenty-two-inch material, or two and one fourth yards of thirty-six-inch material

THE girl who is planning her summer wardrobe, if she is a very wise young person, as of course she is, will be sure to add to it just as many separate little jackets as she can afford. They are going to be so very fashionable this year, and then the best part of it is they're so convenient. The one illustrated on this page is a rather simple Eton, but one which is extremely good style and can be made up in a great variety of materials and look well in any of them. It is a loose, collarless Eton fastening in slightly double-breasted style. The fronts are pointed, and it has three-quarter sleeves. It would look well in silk trimmed with braid the same shade, or it would be smart made up in white or any delicate shade of linen trimmed with the old-fashioned rickrack, which is back in fashion again. A jacket in this design of white linen, with a ready-made white linen skirt, would make a most economical costume.

No. 911—Tucked Waist with Square Yoke

No. 912—Gored Skirt Tucked in Clusters

How to Order Patterns

FOR every design on this page we will furnish a pattern. The working directions of each pattern are carefully explained on the pattern envelope. In ordering, be sure to mention the number of the pattern desired and the size required. The price of each pattern is ten cents. Send money to the Pattern Department, The Crowell Publishing Company, 11 E. 24th Street, New York City.

No. 913—Baby's First Short Clothes Outfit, including six patterns. Price 20 cents. Patterns cut in three sizes—6 months, 1 year and 2 years

Our spring and summer catalogue of fashionable patterns is now ready and will be sent FREE to any one upon request

The Housewife

The Country Hostess

IF YOU go about it rightly a city guest is easily entertained. Simply do not try to entertain, but turn him or her outdoors. Allow your guests to lie under the trees or loll in the hammock. Don't keep them in the house by talking and trying to be agreeable.

Should there come a rainy day, making it impossible for them to stay outdoors, do not think your guests "queer" if they choose to climb about the barn and lie on the new-mown hay.

Above all, do not tire yourself out by trying to get up entertainments. They are not appreciated. I say this with all respect for those concerned, but I know it to be true. In the first place "home talent" can be appreciated by home people only.

City folks are used to the best talent that can be hired, and they do not know the participants, for, after all, that is the chief reason why home talent entertains and interests.

For instance: A little boy speaks a "piece." He does well, but your city guest, who has seen Little Lord Fontleroy, Buster Brown and other childish stars, is not particularly impressed, and wonders why this little chap will twist and wriggle so; but you enjoy every word, because he is "Nette's" boy. Besides, yesterday you caught him playing "hookey" down at the bridge, just below the corners, and you know that he squirms because you are sitting next to his mother and he is in an agony lest you should tell her.

Next: The young lady who rises to sing is applauded again and again. She is the village music teacher, and the visitor from the city, who has heard her indifferently, wonders at the enthusiasm—for how can he know that only a few years ago she was the tawny-haired, brown-fisted little girl who picked fruit "on shares" to pay for her music lessons, and take a "course" in the city. And now that she has come home successful, the whole neighborhood welcomes her with sympathy and pride. No, he cannot know, and therefore cannot appreciate.

Informal singing on a moonlight night, when all are gathered on the porch after a warm day, is something which is invariably enjoyed by guests and host.

A word as to food. Do not weary yourself with cooking. Summer time, when city guests love to visit the country, is a busy time for farmer folk. Give your guests fresh fruits in plenty, and do not bother about puddings and desserts. They can have those edibles at home. Farmers consider beef a luxury, but don't trouble—for it is a trouble—to get it. For meats have ham, chicken and bacon, which are luxuries indeed.

When wash day comes, don't worry about dinner. Let your guests put up a lunch and go to the woods for the day—fishing, if they choose. They will be glad to be out of the way, and it will be easier for you.

In these days of many factories the farmer's wife knows that it is almost impossible to get efficient "help." When your guests offer their services, accept as a matter of course. It will change the burden of company to a pleasure, and your guests will feel more comfortable.

MRS. DENIS E. COOPER.

A Rich Crochet Piece

THIS is one of the handsomest pieces of crochet I have ever come across. It was made to cover a chair head rest, but is equally appropriate for the end of a lounge or to ornament an oblong pillow. It is made of three shades of red worsted of fine quality.

To begin, use the lightest shade, chain forty, join.

First row—44 d c in the chain—not over it—this will be putting two d c in every tenth stitch of chain, join.

Second row—52 d c through chain edge of the d c in last row, distributing the extra ones evenly around the circle, join. This is second shade.

Third row—In the darkest shade of the yarn, 60 d c in the last row, same as before, join.

Now chain 40, run through the finished circle, join, and finish same as the other, turning the work as you go.

Chain 40, run through the second circle, and proceed as with the others. Make a fourth circle through the third, then pin the places where the rings lap so they will lay flat while you do the outer edge.

Now take the darkest shade of yarn and make 1 d c through the place where the first and second rings join, taking the stitch through the first stitches in both pieces, ch 1, 1 d c in same place, ch 1, 1 d c in second d c from this, on first circle, ch 1, 1 d c in fourth d c, ch 1, 1 d c in sixth d c, ch 1, 1 d c in eighth d c, ch 1, 1 d c in ninth d c, ch 1, 1 d c in eleventh d c, ch 1, 1 d c in thirteenth d c, ch 1, 1 d c in fourteenth d c, ch 1, 1 d c in sixteenth d c, ch 1, 1 d c in eighteenth d c, ch 1, 1 d c in nineteenth d c, ch 1, 1 d c in twenty-first d c, ch 1, 1 d c in twenty-third d c, ch 1, 1 d c in twenty-fourth d c, ch 1, 1 d c in twenty-sixth d c, ch 1, 1 d c in twenty-eighth d c, ch 1, 1 d c in twenty-ninth d c, ch 1, 1 d c in thirty-first d c, ch 1, 1 d c in thirty-third d c, ch 1, 1 d c in thirty-fifth d c, ch 1, 1 d c in and through the joining at this side of same circle, ch 1, 1 d c in same place, ch 1, 1 d c in second d c of second circle, repeat last three times, ch 1 and join the second and third circles same as first and second. Go clear around the four rings to the starting point in the same way and join.

Second row—Same shade of yarn—2 d c in first ch 1, ch 2, 2 d c in same place, 2 d c in the second ch, ch 2, 2 d c in same place, repeat all around and join.

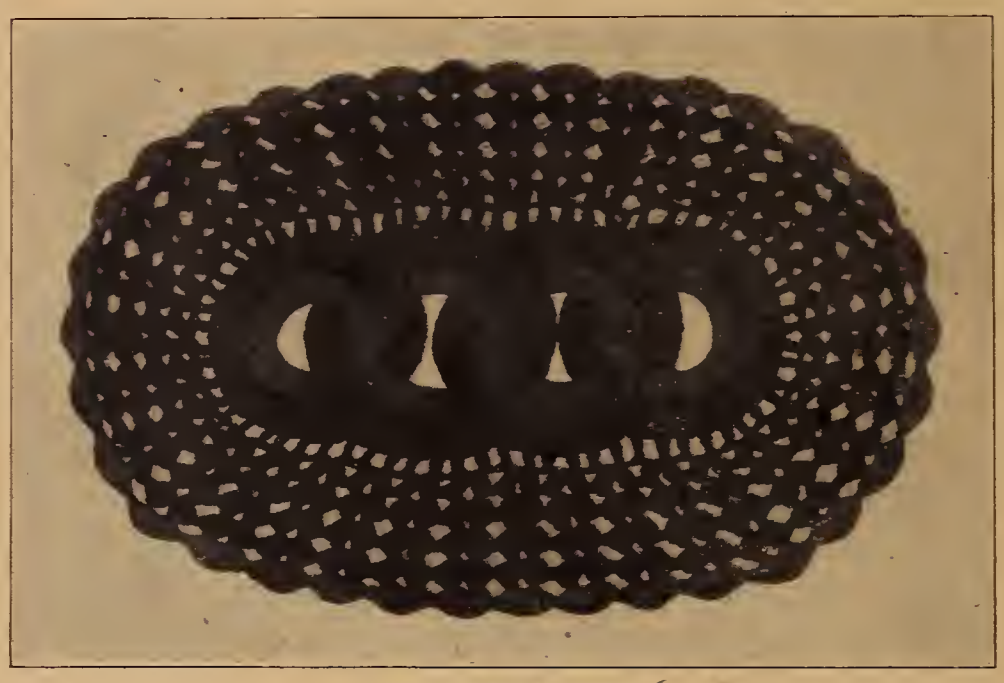
Third row—3 d c in first shell, ch 2, 3 d c in same, repeat all around, join. Same shade yarn.

Fourth row—Same as third, with same shade of yarn.

Fifth row—Same as third, with next lighter yarn, join.

Sixth row—In the lightest shade of yarn—7 d c in each shell, join. I have another of these in shades of green that is very pretty, but not so rich looking as this. One can use her taste in the color and shading.

HALE COOK.



A RICH CROCHET PIECE

The Baby

I THINK it the greatest cruelty to keep a young child sitting for any great length of time fastened in a high chair. We have only to think how hard it would be for us to sit on such a hard, flat surface, unable to ease our position, to realize how often they are caused to suffer by the thoughtlessness of the mother who will keep them sitting thus for as many hours as they can be kept from crying, thinking not how they would like similar treatment. It is not only the discomfort of the time that is to be thought of, either, for physicians say that permanent injury is often done to the spinal column in this way, and that it is largely responsible for constipation in infants.

The baby carriage is a much better place to put them when they must be confined for a while, for its cushioned seat is softer and more comfortable to their tender little bones, and they enjoy jumping, and the spring of the carriage gives exercise and enough change of position to be a rest if not kept there too long.

But there is always the difficulty of their being unable to reach their playthings when they let go of them, and to keep them from falling while reaching for them, and to add to their comfort generally, I devised for my baby a table made of thin boards, just the size to fit snugly between the raised arms of the buggy seat and the front end of the buggy, and to extend over each side about six inches. I used two of the wide, thin boards taken from the side of a cracker box. They were fastened together by nailing a narrow strip along each side and letting it extend up an inch above the table, to keep the playthings from slipping off. A similar strip was put across the front end, and the end toward baby's body was curved out slightly, like a lapboard for sewing. I then sandpapered it and gave it a coat of white enamel, so it was easily kept clean. A screw eye was put in at each side near the back, a tape tied in each, by which it was tied to the carriage at each side, to prevent his lifting and throwing it off. Here his playthings are always within reach, every movement sets him jumping, and he will play contentedly for as long a time as I feel it is right to allow him to sit there.

E. E. S.

Dainties Made with Rhubarb

THE craving for a greater proportion of certain salts and acids in the diet as winter disappears is thoughtfully provided for by Mother Nature herself, and rhubarb, spinach, and the other tender green foods spring coaxes from the earth, supply this need abundantly and delightfully. The agreeable subacid juice of rhubarb is liked by almost every one, and it is as well valuable as a spring tonic and a diuretic. Surprisingly dainty and delicate dishes may be evolved with this homely plant as a foundation, and although the average chef treats it with a certain amount of contempt, if more of it were canned and reserved for the making of desserts occasionally throughout the winter the appreciation it would receive (when out of season) should make it take quite a leap in popular estimation.

Some very pleasing ways of serving it are the following:

RHUBARB AND FIG JAM—Weigh the rhubarb after it is peeled and cut up for cooking, and to every six pounds allow one fourth of a pound of candied lemon peel cut in thin chips, and one pound of figs that have been well washed, dried, and cut in halves. Place the figs and lemon peel over the rhubarb, cover with six pounds of good moist sugar, and let stand until the next day. Then boil slowly together, with frequent stirrings, for one hour. This is very nice sealed in marmalade pots.

RHUBARB MOLD—Wash the rhubarb well in cold water; if young do not peel it, but if old remove the skin. Cut small enough to fill a quart measure. Mix with it one pound of moist sugar, the grated yellow rind and the juice of one lemon, and nine drops of essence of lemon. Add a very little water—only just sufficient to keep it from burning—and let it boil rapidly, stirring frequently, until it becomes a rich marmalade. Have ready one ounce of gelatin dissolved in one cupful of cold water; add this to the hot rhubarb as soon as it is removed from the fire, and stir without ceasing until the gelatin is thoroughly melted. Pour into an ice-cold mold that has been standing filled with cold water, and set in a cold place until quite firm. When time to serve, turn out of the mold on a shallow silver or crystal dish, garnish with a few blanched almonds cut in strips, and surround with a wreath of whipped sweetened cream.

RHUBARB JAM—Cut the rhubarb into nice sized pieces, and to every quart add one pound of good moist sugar. Put the sugar over the rhubarb, and let it stand over night to extract the juice. The next day boil the sugar and juice together (the sugar will not be dissolved) for twenty minutes, then put in the rhubarb, and boil twenty minutes longer. Stir as little as possible, in order not to break the rhubarb.

RHUBARB MERINGUE TART—Stew some rhubarb in a very little water until soft, add sugar to make quite sweet, and lemon juice to flavor. Turn it into a pie dish lined with good short paste, and lay narrow twisted strips of the paste across the top to form diamond-shaped openings. Bake in a hot oven until done. Make a stiff meringue with the whites of two eggs and four tablespoonfuls of powdered sugar, place a spoonful to form a tiny pyramid on each diamond-shaped opening, and set in a very slow oven until lightly browned.

RHUBARB FOOL—This is an old-fashioned and very simple sweet dish, and a great favorite with our English cousins. Cut one quart of tender rhubarb in small pieces, and bake it with one cupful of water and two cupfuls of sugar until soft enough to rub through a coarse sieve. Then set aside until cold. Just before serving stir in one pint of very rich sweet cream, well flavored with lemon or strawberry, and slightly sweetened.

RHUBARB IN JELLY—Soak one half box of pink gelatin in one half cupful of cold water for thirty minutes; add one pint of boiling water, the juice of one and one half lemons and three fourths of a cupful of granulated sugar. Stir until dissolved, then pour a little of the jelly into the bottom of a wetted mold and set on ice to harden. When firm, set a bowl, about two sizes smaller than the mold on top of the jelly, and fill the bowl with ice. Pour jelly in the mold around this almost to the top of the bowl and set aside until firm. When the jelly is hard remove the ice from the bowl, fill it with warm water for just a moment, then lift out the bowl carefully, not to break the jelly. Fill the space left with thick stewed rhubarb made very sweet and whisked with the whites of two eggs that have been whipped to a stiff snow. Spread the remainder of the jelly over the top after it has hardened a little, and set in the refrigerator until time to serve. Turn it out carefully on a flat silver or glass dish, and surround it with a wreath of sweetened whipped cream flavored with lemon and mixed with one half cupful of finely chopped blanched almonds.

MARY FOSTER SNIDER.

HYDRANGEAS

EW

The Housewife

Our Water Supply

WHEN we built our new house we wanted some of the modern conveniences, so we planned for them all, and secured as many as we could.

We placed a tank, made of galvanized iron four feet square and three feet deep, on the second floor over the bath room. The water runs into it from the eave trough. There is a pipe from the tank, leading down through the floor. This has a faucet and is over the kitchen sink, which has a waste pipe. Two extra joists were put under the tank, but a plank on top of the floor would have answered the purpose.

The tank cost $7.00; pipe, fittings and faucet $1.50; sink $1.50; the waste pipe $1.50. Total $11.00. It is worth its cost each year. If you have no such handy device, just keep track of the pails of water you carry and see for yourself.

MRS. JOHN UPTON.

Potato Fritters

INGREDIENTS: Two pounds of large potatoes, two eggs, two tablespoonfuls of fresh bread crumbs, one tablespoonful of grated ham, one teaspoonful of parsley, salt, pepper and frying fat. Peel, and cut the potatoes in thin slices. Put them in boiling salted water, and boil for five minutes. Drain off the water, and gently dry the slices in a soft cloth. Beat up the two eggs, mix with them the grated ham, the parsley, finely chopped, crumbs, and a careful seasoning. Have the frying fat thoroughly hot. Dip each slice of potato through the egg mixture, then put gently in the fat, and fry a golden brown. Drain on paper, and serve quickly.

Rice Fritters

TO ONE and one half cupfuls of cold cooked rice add one tablespoonful of sugar, the yolks of two eggs, one cupful of milk and sufficient flour to make a thick drop batter. Add one teaspoonful of baking powder with the last portion of flour, and lastly fold in the stiffly beaten whites of the eggs. Fry as usual, and serve with maple sirup.

"Stitches"

A LITTLE CONTEST FOR A SEWING PARTY

WHAT stitch is:
Hard to live with? (Cross stitch.)
A part of a cough? (Hem stitch.)
A part of a window? (Blind stitch.)
Found on a fowl? (Feather stitch.)
A fish and something every one has? (Herring-bone stitch.)
Made of many links? (Chain stitch.)
Not forward? (Back stitch.)
Useless without a key? (Lock stitch.)
Repeats itself? (Over-and-over stitch.)

For a prize for the best answers give a little leather sewing case fitted with needles and thread.—What-to-Eat.

Baked Cabbage

INGREDIENTS: One firm white cabbage, two eggs, one tablespoonful of butter, three tablespoonfuls of milk, two tablespoonfuls of chopped cooked bacon, and salt and pepper. Boil the cabbage in the ordinary way. When tender press out all moisture, chop it fine, then press again. Next add the butter, beaten eggs, milk and bacon. Season and mix all carefully. Turn the mixture into a pie dish, and bake well until browned on the top. Scraps of butter dotted about on the surface are an improvement, and hasten the browning operation.

Rhode Island Johnny Cakes

IN COMPLIANCE with a request from an old subscriber, we are pleased to give the following recipe for Rhode Island johnny cakes: First be careful to have white, soft ground meal, not the usual granulated variety. For each cupful add one fourth of a teaspoonful of salt. Dampen with boiling water, using only enough to barely moisten. Cover, and let stand for ten or fifteen minutes, then gradually add cold milk, enough to make a thick batter which will hold its shape when dropped. Drop by spoonfuls on a hot griddle which has been greased with salt pork fat. When brown put a bit of butter on the top of each and turn over. When the second side is nicely browned transfer to a pan, and stand in the oven for about five minutes.

Peanut Taffy

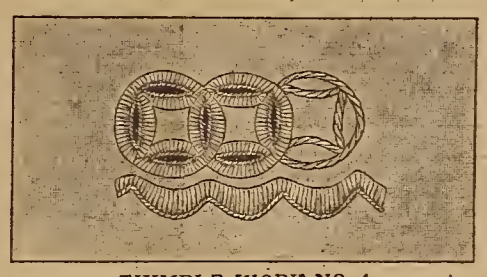
BOIL together two cupfuls of granulated sugar, one tablespoonful of vinegar, one tablespoonful of butter and one cupful of boiling water without stirring. Have ready your kernels on a buttered plate or tin pan, and when the candy hardens in cool water, pour over the peanuts. It will be clear and brittle—easy to break with a knife or small hammer when cold. Any other kind of nuts may be used.

Edgings of Thimble Work

CUT work of every description is highly favored as an embellishment to articles upon which fancy needlework may be lavished. One of its many variations is the old-time thimble work of our great-grandmothers' days. It was also known as compass work, or spool embroidery, taking its name from whatever the form utilized to mark out the circles comprising the design.

These circles may be of any desired size, but are usually all of the same size throughout one pattern. They interlace or lap over in such a manner that ovals are formed on the four sides making up the circle. They may be arranged in numerous ways, forming insertions, edgings or all-over effects, and are easily managed by any one who can work the buttonhole stitch.

The design of circles being marked out around thimble, glass or other object, or outlined with a compass, each is stitched



THIMBLE WORK NO. 1

around on the stamped line, as appears in the unfinished portion of illustration No. 1. The ovals are then slit down with sharp scissors, and buttonholed around. Only one should be cut at a time, so that the holes will not become stretched. The buttonholing may be very close, or if the background material is of such a nature that there is no danger of raveling, the stitches may be some distance apart, as in the blanket stitch.

When all the ovals are worked they may be left plain, as in No. 1, or filled in with some lace stitch. In the sample shown in illustration No. 2 the herring-bone stitch was used for this purpose. Here, too, only the inner ovals are worked, the remainder of the circles being outlined. The blank spaces are then thickly scattered with seed stitches, and a solid disk worked where the ovals unite.

Sometimes a cross or star stitch is used in the center of circles entirely surrounded by ovals. If the ovals are sufficiently large, more elaborate forms may be used for this purpose, or some fancy darning or lace stitch utilized to relieve the plainness. Mountmellick embroiderers will be able to supply many handsome stitches for this work.

Insertions may be made to match either of the edgings shown. This work is suitable for underwear, baby garments, children's dresses, shirt waists, collars and cuffs, and such household linen as sheets, pillow slips, towels, scarfs, covers, and the like.

The work may be done on fine or coarse material, whether linen, cotton, silk or cloth, and is carried out in floss to correspond. It is usually seen in all white, but is by no means confined to this, for colors are very beautiful either on white or another shade which harmonizes well.

One will be surprised at the possibilities of thimble work when they first attempt to mark out designs of this character. A little thought results in numerous and varied patterns, and with carefully planned stitch work the effects are certainly pleasing. The work wears so well that even now there are to be found in many households samples of that done generations ago, so that no one need hesitate to undertake embroidery of this nature for fear their efforts will be wasted.

MAE Y. MAHAFFY.

To Remove Grease Spots

SPOTS on the most delicate fabric may be removed by using equal parts of ammonia and turpentine. Rub the mixture on the spot quickly but thoroughly, using a piece of the same material to apply the mixture, or a fresh white cloth. Afterward hang the article in the air to dry quickly. Almost invariably the spot will have disappeared, leaving no stain or ring. When blue material is to be cleaned it will be well to experiment with a piece of the material first, as blue sometimes changes color after the use of ammonia.

MARIE WILKERSON.

Household Hints

BOIL corks in order to make them sound and air tight.

To keep off flies, clean windows with flannel moistened with paraffin, and polish with a clean duster.

To clean leather, use equal parts of boiled linseed oil and vinegar, well shaken together. Apply sparingly on a flannel, rub well into the leather, and polish with a soft cloth.

Salt should be sprinkled on any substance that has boiled over on the stove. This prevents the nasty smoke and smell which otherwise would soon pervade the region of the kitchen.

A damp cupboard or storeroom may be made dry and sweet by keeping a vessel containing quicklime in it. As the lime gradually loses its power, it is necessary to renew it occasionally.

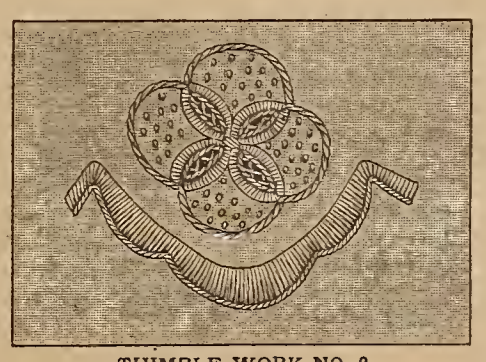
To remove old wall paper stir one quart of flour paste into a pail of hot water, and then apply this mixture to the walls. Being thick, it will not dry quickly, but will saturate the paper, which may then be easily scraped or peeled off.

Cocoanut Candy

BOIL two cupfuls of granulated sugar with one cupful of boiling water until it threads. Have ready the stiffly whipped white of an egg, and proceed exactly as if you were making icing for cake, beating the hot sirup into the beaten egg. Just before it cools and hardens add enough shredded cocoanut to hold together in firm balls. Drop by spoonfuls on buttered paper, and dust lightly with powdered sugar.

Salad Days

THERE is no more agreeable or refreshing addition to a cold-meat collation, especially in the fine warm days of summer, than a well-made salad. It is the experience of a good many persons that the appetite becomes lessened by the sight of food, and more particularly of animal food, on a hot day, and that this is not so much the case when it is accompanied by a fresh green salad, which not only renders the outlook of a meal attractive, so far as regards the palate, but encouraging also to the digestive organs. When there is no inclination to eat, or when, as it is commonly said, a person does not "fancy" his food, there is, as a rule, torpidity of digestive function. With the sight of tempting food the work of the digestive organs is begun. "The mouth waters and even the gastric juice flows"



THIMBLE WORK NO. 2

in response to a pleasant impression. The salad, therefore, may fill a special and important gap in the dietary, and when it is prepared with oil, as every good salad should be, it becomes an excellent and agreeable vehicle for conveying fat into the body.—The Lancet.

Neapolitan Cake

MAKE a sponge-cake mixture in the usual way. Divide it into four parts. Leave one part plain and color the others—one yellow, one pink, one chocolate. Bake them in sheets to be something under an inch in thickness when baked. They may all be baked in one pan by spreading them so that they will just run together in the baking. After they are baked, put them together, with jelly between, and press them together; then ice them with a pink icing, and with a bag and tube run into it alternate lines of white and chocolate icing about one and one half inches apart. Then with a fork, giving it a rotary motion, work the colored lines into the pink icing; then with a sharp knife cut it into what size pieces you choose, and dry them off.—From Everyday Housekeeping.

Brentford Rolls

MAKE a sponge with one pint of milk, and let it rise over night. In the morning take three pints of flour, two tablespoonfuls of white sugar, two tablespoonfuls of butter and two of lard; sift one teaspoonful of salt with the flour. Beat two eggs very light, mix them in the flour, then work in the sponge. Knead it for twenty minutes, then make into rolls. Let them rise for two hours, and bake in a quick oven.

Graham Pudding

INTO one quart of boiling water (to which one teaspoonful of salt has been added) stir enough Graham flour to make a mush. Add one cupful of seeded raisins. Cook slowly until thoroughly done, stirring occasionally. Set aside in individual molds to cool. Serve with sugar and whipped cream.

Rhubarb for Winter

FOR preserving for winter the following recipes will be found exceedingly useful and pleasing:

PRESERVED RHUBARB—Peel the rhubarb if at all tough, and cut into small pieces. Boil it with a very little water until perfectly soft. Weigh, and for each pound of the rhubarb allow one pound of granulated sugar, one ounce of sweet almonds (blanched and chopped fine), and half a lemon cut into tiny dice. Boil slowly for an hour, stirring very frequently, as it will scorch easily, then put the preserves into jars.

RHUBARB MARMALADE—To each quart of finely chopped rhubarb add six oranges that have been peeled, the white pith and pips removed, and the peel and pulp sliced thin, and one and one half pounds of granulated sugar. Boil slowly until done.

RHUBARB CUSTARD—Make a custard with one pint of milk, the beaten yolks of three eggs, two tablespoonfuls of granulated sugar, a pinch of salt and one half teaspoonful of lemon extract. Line a deep pudding dish with thin puff paste, cover with a layer of finely chopped rhubarb mixed with sugar to make sufficiently sweet, and pour over the custard mixture. Bake in a moderate oven until the custard is firm in the center. Spread over the top of the custard a meringue made with the whites of the eggs and three tablespoonfuls of powdered sugar. Let it color very delicately in a slow oven. Serve very cold.

CREAM RHUBARB PIE—To one cupful of finely chopped rhubarb add one cupful of sugar and the grated yellow rind of one lemon. Mix smoothly together in a cup one tablespoonful each of corn starch and cold water, and pour in enough boiling water to fill the cup. Stir this into the rhubarb. Add to the mixture the yolks of three eggs beaten very light, and pour into a rather deep pie plate lined with puff paste. Bake without a top crust in a quick oven. When done let get cold, then cover with a meringue made with the whipped whites of the eggs and three tablespoonfuls of powdered sugar. Let it color delicately in a slow oven, and serve very cold.

M. F. S.

Growing Old

The stress and toil of life are past,
And I may take mine ease at last;
Quiet and Peace my friends shall be,
To share my hearthstone reverie;
My latter days shall be my best,
Ample the guerdon of my quest.
The rosy breaking of the dawn,
The noontide shadows on the lawn,
The summer's march, the autumn's glow—
Sweet home, where love's dear blossoms grow—
Ah, what may be more fair than these
The hungry heart of man to please?
Here now shall end ambition's flight,
The toil of youth, strong manhood's fight;
Long years the fruit of these I sought;
The world hath now its tribute brought,
Come, joy of life, with me abide,
My soul's desire is satisfied.

My son, my son, it may not be,
Thine is a larger destiny;
More vast than all this world can give
Thy lot, when thou shalt fully live.
Within thy soul a spark of fire
I hid, which shall, with new desire,
Flame forth when I thine eyes unseal.
Heaven's undreamed questings to reveal.
Thou art not old! Thou hast outworn
The apparel which thy soul hath borne;
It hampers thee; when I shall give
New raiment, thou more free shalt live;
New fledged thy spirit shall aspire
To larger flights, nor ever tire.
Too high born then to sit at ease
Where fading earthly treasures please;
Couldst thou but know toward what they tend—
Ah, no, my child, there is no end!

—Henry Nehemiah Dodge in New York Christian Advocate.

Of Curious Interest

Illustrated Contributions to this Department Are Invited, and Those Accepted Will be Paid For.

The Longest Necks in the World

THE women of Padang, Sumatra, have longer necks than any people in the world. They wear high collars in the form of metal rings from early childhood, and as they grow up, ring after ring is added, until the effect shown in the illustration herewith is gained. In Padang it may be said that the wearing of this collar is a sign of smartness, as those women who wear them are unable to work. The curious topknot, suggestive of a nest of eggs, should be noted.

LONG-NECKED WOMEN OF PADANG

The Indian's Painted Face

IN EXPLANATION as to why Indians paint their faces, the "Scrap Book" recalls a tradition concerning a chief who, while hunting deer, was chased by a lion and fell exhausted, calling upon the "Big Bear," which Indians believe was the grandfather of man, to save him. The "Big Bear" heard and went to the man's assistance, scratching his foot and sprinkling the blood over him. No animal will eat bear or taste his blood, and when the lion smelled it he turned away. But in doing so he scratched some of the blood off the Indian's face with his claw, by accident. When he found himself unhurt, the Indian was so thankful that he let the blood dry on his face. With the marks of the lion's claws, this gave the effect of stripes, and ever afterward, when going on hunting expeditions for man or beast, the Indian painted his face in stripes as a charm against danger.

A Pitcher Well

ONE of the most curious wells in existence is that at the home of Captain Nathaniel R. Cole, of Newburyport, Massachusetts, and near the famous chain bridge on the road to Amesbury. The well is made to represent an immense pitcher, with spout and handle. It is constructed of wood, and held together by iron bands. A bucket fastened to an old-fashioned well sweep drops through the pitcher into the well and brings up the cool and sparkling water. This well has been one of Captain Cole's treasures for many years, and is viewed with curiosity by hundreds of passers-by.

FAMOUS PITCHER WELL AT NEWBURYPORT MASSACHUSETTS

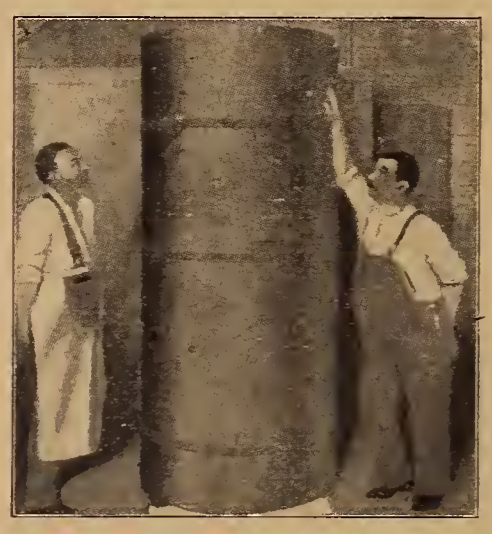
Trees That Are Queer

AMONG the most singular specimens of vegetable life are the bottle trees of Australia. As the name implies, they are bottle shaped, increasing in girth for several feet from the ground, and then tapering toward the top, where they are divided into two or more huge branches bearing foliage composed of narrow, lance-shaped leaves from four to seven inches long. The bark is rugged, and the foliage is the same in the old and young trees. The bottle tree sometimes grows to a height of sixty feet, and measures thirty-five feet around the trunk. Many of these trees are supposed to be thousands of years old.

The angry tree is also a native of Australia. It reaches the height of eighty feet after a rapid growth, and in outward appearance somewhat resembles a gigantic century plant. If the shoots are handled, the leaves rustle and move uneasily for a time. If this queer plant is moved from one spot to another it seems angry, and the leaves stand out in all directions, like the quills on a porcupine. A most pungent and sickening odor, said to resemble that given off by rattlesnakes when annoyed, fills the air, and it is only after an hour or so that the leaves fold in the natural way.

Largest Leather Belt in the World

WHAT is said to be the largest leather belt in the world is part of the equipment of the Dempsey Lumber Company's sawmill at Tacoma, Washington.



GIANT LEATHER BELT

The belt is made from pure oak-bark-tanned leather, is 84 inches in width, threeply in thickness, and weighs 2,300 pounds. The length is 114 feet. It required the centers of the hides of 225 steers.

Postal Service of Our Grandfathers

POSTAGE stamps and envelopes are articles of comparatively modern invention. They were unknown to our forefathers, and it was not till 1837, after Rowland Hill had introduced them into England, that they came into use in America. A century ago letters were written, folded and addressed all on the same sheet, and stuck with a wafer or with sealing wax. Our early statesmen could hardly have dreamed of the millions upon millions of portraits of themselves that would some day be distributed broadcast by a great postal system.

Early in the century the mail routes included a few cities in Maine, Georgia, New Hampshire, New York, Pennsylvania, Maryland, Kentucky and Virginia, making triweekly deliveries in summer and biweekly in winter. There was no postmaster general in the cabinet until 1829, says "Success." Letters were charged twenty-five cents postage for anything over four hundred and fifty miles; half a century later, ten cents, prepaid, carried a letter three thousand miles, and under that distance five and three cents. The popular pen was the good gray-goose quill.

HONOR ROLL

OF

Farm and Fireside's Great Four-Pony Contest

The following contestants are already prize winners. They have each won **two** prizes by getting on the FARM AND FIRESIDE Honor Roll, and their names will be seen and read by nearly three million people. This Honor Roll is complete up to date of going to press April 15, 1907.

Scotty Auk, Pa.
Bernice D. Andrews, Mass.
Paul H. Aepple, Ohio
Fern Atkins, Pa.
Josie Anderson, Ohio
Glynn Anderson, Okla.
Ruth Anthony, Va.
Holland B. Alexander, Tenn.
Arthur Adcock, Ohio
Arthur Beard, Kan.
Clarence Bailey, Pa.
Leonard H. Bruhaker, Ohio
Gwendolyn Bowles, Mo.
Loree Burwell, Ohio
Violet Brown, Wis.
Louis Branchet, Mont.
Paul F. Beam, Ohio
Junius C. Ballard, Tex.
Ormond Blunt, Mo.
Charlotte Blankenbeker, Ky.
McKim Buckley, Pa.
Leonard M. Beachley, Md.
Ellis W. Burrows, Ohio
Roht. Bremer, Pa.
Harrison Burkett, Pa.
Florence M. Boyer, Pa.
E. W. Burruss, Ark.
Helen M. Beal, Ohio
Alice Brown, Pa.
Henry Blake, Mass.
Lucien W. Bingham, Vt.
Mary A. Buchanan, Va.
Rozella Bughtler, Ohio
Mary Bockes, Iowa
Mrs. F. C. Bradley, Wis.
Harvey J. Brackin, Del.
Wilmer Beck, Pa.
Albert Brant, N. Y.
Everette Biset, Mich.
Myra Cassidy, Ohio
Johnson Cannon, Ohio
Mrs. E. Churchill, Ala.
Roy E. Cowgill, Ohio
Frank Calkins, Ore.
John Clark, N. Y.
Fay M. Conley, Ohio
Fern Childress, Mo.
Harold Caldwell, Ohio
Ethel Carpenter, Ill.
G. Woodford Connell, Canada.
Wesley Colby, Iowa
Irene Campbell, Ohio
Herbert A. Camphell, N. Y.
Leonard Coutts, Canada
Paul Clay, Okla.
Thomas Crickman, Ill.
Marie Carothers, Ohio
Lottie L. Crawford, Neb.
Ahbie Chambers, Ohio
Mildred Comins, Mass.
Margaret Carter, Mass.
Henry Clausen, Ind.
Archie R. Cook, N. Y.
Mrs. Laura Courter, Ill.
Foster Colgrove, Pa.
Mary E. Cahill, Ill.
Matilda Colston, Va.
Chas. Claus, N. H.
Zita M. Carroll, Mich.
Fay Keneth Cotauch, N. Y.
Earl Denison, Canada
Mary Douthit, Okla.
Floyd Disterdick, Ohio
Irene Duff, Ala.
Lucy Dudgeon, Neb.
Lucinda Dillavan, Ill.
Bessie Dohson, Wash.
Essie Dillard, Ky.
H. T. Duncan, Pa.
Edna Davis, Obio
Lou M. Duke, Tenn.
Lester M. Donaldson, Iowa.
Mrs. C. W. Downar, Ohio
Mrs. Snell Davis, Ohio
Thomas V. Downin, Md.
A. S. Dewitt, Pa.
Grace Evans, Ohio
Ruhy L. Emlet, Ohio
Carl H. Egge, N. Y.
Geo. Ericsson, Iowa
Lorena Ernst, Neb.
Mildred Eckenrode, S. Dak.
Donnie D. Euliss, N. Car.
Oscar Fairey, Ala.
G. W. Fox, Wis.
Glade Fuller, Pa.
Roy Frankenherry, Pa.
Gladys Ferlen, Wis.
Leonard Foreman, Pa.
Grover C. Freeze, Ohio
Marie Finzel, Md.
Weir Goodwin, Jr., Va.
Wm. Gilson, Pa.
Carl Gregg, Ore.
Isabel Graham, Ohio
John S. Gibbs, Ohio
Arthur B. Gill, Va.
Bernice Gilliland, Ohio
Grace Gindice, Mont.
Anna Gilbert, Cal.
J. E. R. Goodman, S. Car.
Rosa E. Gray, Neb.
Rhoda R. Green, Pa.
Arthur Gardner, Iowa
Mrs. I. T. Good, Va.
J. E. Hoffman, Ohio
Lucy M. Heckard, Ore.
Reginald G. Hawley, Vt.
Mabel M. Hannum, Ohio
E. E. Harrison, Ky.
Williard Hipsher, Obio
Chas. Holden, Ohio
Jesse Hecke, Ill.
Margaret Heavner, W. Va.
Hubert Hull, W. Va.
E. Page Harris, Ala.
Genevieve Haun, Wash.
Marjorie Hiberling, Pa.
Margaret Husted, Ind.
Jessie Hoover, Ohio
Geo. Harris, Mo.
Master Lewis P. Hassel, Pa.
Glenn Hoffman, Mich.
Mrs. W. S. Hart, Ala.
Laura E. Holt, N. Car.
Willie A. Hoogbruin, Mont.
Ethel A. Hathaway, Ohio.
Marie Hugues, Va.
Clifford Irving, Canada
Beryl Johns, Ark.
Dott Jay, Ill.
Gladys Johnson, Ill.
Bernice Johnson, Ohio
Irene Johnson, Ohio
Johnny L. Johnson, Mo.
Lonetta Jones, La.
Glynn Jordan, Colo.
Angie Johnson, Ohio
Howard Jones, Ohio
Mrs. B. E. Jefferies, Utab.
Florence James, Ill.
Milnor Kauffman, Pa.
Leland Kreig, Ohio
Beulah Klein, Okla.
Marguerite King, Ohio
Mrs. N. A. Keene, Mass.
Mahel Kintner, Pa.
Charles W. Kingsley, Mass.
Mrs. Rosa Kannel, Ohio
Russel Kreiter, Ohio
Artie Klingensmith, Pa.
Levi Ray Kellar, Vt.
Leonard Knox, Tex.
Ruhy Leopold, Neh.
Carey Lackey, Tex.
James W. Lott, S. Car.
Clarence Lee, Pa.
Louise H. Lowe, Conn.
Herman H. Light, Mass.
W. A. Ludwig, Pa.
Harry A. Leeman, Ind.
Frank W. Lynn, Ohio
Julia M. Lyons, Mass.
Muriel J. Leonard, Wis.
Margaret Lawson, Ky.
Renel Lavanway, Mich.
Faunt S. Le Roy, Ind.
Georgie Leonard, Mich.
Glenn H. Long, Pa.
Francis M. McCartney, Pa.
Chester M. McNeil, Ill.
Anna Mendenball, Ind.
Henry Miller, Pa.
Russell Maxwell, Pa.
Joseph Moses, Mo.
Floyd M. McCartney, Mo.
Erwin Mayer, Wis.
Ruth Katie Mills, Mich.
D. L. Madray, S. Car.
Ruth Morgan, Ky.
Lettie Martin, Mo.
Edna McQuillen, Iowa
Viola Miller, W. Va.
Mercedes Martindell, Ohio
Merle Mayfield, W. Va.
Ida A. Munson, Wis.
Stanford Miller, N. Y.
Ella Matthews, Mont.
Lourine Moore, Tenn.
Pearl McFarland, Iowa
Eddie Michaels, Obio
Randolph Metzler, Pa.
E. A. McNight, Ind.
Jay A. Melious, N. Y.
F. Ray McKenzie, Pa.
J. E. Murphy, R. I.
Wiley Martin, Ky.
Earl Martin, Iowa
Mary Martin, Mo.
Susie Meyer, Canada
Elizaheth Meacham, N. Mex.
Jno. B. Masloff, Wis.
Ruhy Moose, N. Car.
Ruth Niles, Pa.
Worthy Nash, Mass.
Allen Neal, Colo.
Williard L. Neese, Ohio
Agnes Neuscheter, Ohio
J. B. O'Bryan, Ind.
F. V. Ogden, Va.
Mark Oshorne, N. Y.
Leonard Owen, Mo.
Jesse W. Oren, Va.
Leonard Owings, S. Car.
James B. Parks, Pa.
Ara C. Potter, N. Y.
Lawrence D. Pelton, Wis.
Gladys Payton, Kan.
Virginia C. Patterson, N. Car.
Samuel H. Page, N. J.
Crissie Powers, Conn.
Helen Pressly, Pa.
Wm. T. Pearson, Va.
Edward F. Poss, Ohio
Waldo E. Pletcher, Obio
Archie Parmely, Iowa
Maytie Rowe, Pa.
Fay W. Rohrer, Ohio
E. K. Renck, Cal.
DeMerville Robords, N. Y.
Henry Reinke, N. Y.
Daisy Reed, Wash.
Christine Reaves, I. T.
Mrs. Jeanette Reehling, Ohio
Eugene G. Ryan, Ky.
Myrtle Rogers, Tex.
Harold Roes, Maine
Hazel Ridlen, Mo.
Minnie M. Reehling, Ohio
Hazel Rea, Obio
Stanley Roberts, Pa.
Mabel Rowland, Mass.
Raymond P. Ream, Pa.
Margaret Reehling, Ohio
C. L. Rowland, Va.
Charlotte Rogers, Pa.
Mrs. S. R. Smith, Va.
Mrs. H. B. Sizer, Va.
John Sims, Ark.
Floyd Sheley, Mo.
Maud Stewart, Ohio
Neil Scoles, Iowa
Hester Sexton, Ill.
Ed Stoker, Tex.
Elizaheth Shumate, Va.
Alta Simpson, Neb.
Harold R. Savage, R. I.
Laura B. Snyder, Pa.
Oliver L. Smith, Ohio
Henry Schladenski, Wis.
Freddie Scherbacher, Neb.
Helen Siegfried, Ohio
Ralph Smith, Tex.
Howard Shout, Ohio
Mrs. P. V. Savage, Obio
Ray Sherrill, Neh.
Joy Smock, Iowa
Mabel Spangler, Ill.
Will L. Snedeker, W. Va.
Omar G. Shaffer, Pa.
Paul Spencer, Iowa
Edgar Sanders, W. Va.
Julia Spautin, Ky.
Ruth Sarver, Pa.
Hannah Scott, Ohio
Martin Sander, Ohio
Frank Streipert, N. Y.
Lela Shambaugh, Ga.
Lola Thacker, Ohio
Rudolph Thesen, Ill.
Lowell Troyer, Ohio
S. S. Turner, Ill.
Marie Temple, S. Car.
Olney Thompson, Ohio
Harold B. Thompson, N. Y.
Roy W. Utz, Mo.
Helen Van Lehu, Ohio
Julia Violet, Ohio
Ernest R. Wintermute, Ohio
Milton Walpole, Ohio
Robert S. Withrow, Pa.
Grace Wellman, Wis.
Edna M. Wilson, Pa.
Lilly Waldeck, Neb.
Amy Wehher, S. Dak.
Bernice Walhridge, Neb.
Mrs. J. E. Weaver, Ohio
Pauline W. Walker, Ohio
Chas. E. Wilhee, Mich.
Donald E. Weaver, Ohio
Maud Ward, Wis.
Ida Wegener, Pa.
Fred White, Pa.
Ralph Bonnell Walker, Ind.
Mrs. W. L. Wise, Pa.
Ethel Wood, N. Y.
Ethel Woods, N. Car.
Edna Walker, Ohio
Loree Winslow, Va.
Pearl Wickwire, Iowa
Phebe Woodson, Va.
Neath Wilson, Ohio
Wm. Arthur Woods, Neb.
Lucile Welch, Kan.
Ralph Boswell Walters, Ind.
Dora Young, Ind.
Mabel Youpg, Cal.

We Will Put Your Name on This Honor Roll

if you will take our advice. Just send ten subscriptions to FARM AND FIRESIDE to count in the Great Four-Pony Contest, and in addition to giving you a prize we will tell you all about the Honor Roll—what it means and how to get your name on it. It means a great deal, for the Honor Roll puts you right on the road to the ponies.

Get One Subscription a Day

and before you know it you will he on the Honor Roll. If you can get more than one subscription a day it will he so much better. And then when you get on the Honor Roll it is clear sailing for the pony team. Now make up your mind to-day that you will he on the Honor Roll before May 15th if you are not already on. Just think what it means to win **two** prizes and have your name seen and honored by 3,000,000 people! That's what the Honor Roll will do for you.

"GET IN THE SADDLE!"

Sunday Reading

Making the Best of Life

An old painter of Vienna, after standing for quite a long time in silent meditation before his canvas, with hands crossed meekly on his breast, and head bent reverently low, turned away, saying, "May God forgive me that I did not do it better!" Many people, as they come to the close of their life and look back at what they have done with their opportunities and privileges, and at what they are leaving as their finished work to be their memorial, can only pray with like sadness, "May God forgive me that I did not do it better!" If there were some art of getting the benefit of our own afterthoughts about life as we go along, perhaps most of us would live more wisely and more beautifully. It is often said, "If I had my life to live over again, I would live it differently. I would avoid the mistakes which I now see I have made. I would not commit the follies and sins which have so marred my work. I would devote my life with earnestness and intensity to the achievement and attainment of the best things." No man can get his life back to live it a second time, but the young have it in their power to live so that they shall have no occasion to utter such an unavailing wish when they reach the end of their career.—Rev. J. R. Miller.

◈

The True Freedom

A ship sailing from the Orient brought a large number of caged birds. When they were about in mid-ocean, one restless bird escaped from his cage. In an ecstasy of delight he swept through the air, away and away from his prison. He fairly bounded with outstretched wings! Freedom! How sweet he thought it! Across the pathless waste he disappeared. But after hours had passed, to the amazement of crew and passengers, he appeared again, struggling toward the ship with heavy wings. Panting and breathless, he settled upon the deck. Far, far over the boundless deep, how eagerly, how painfully, had he sought the ship again, now no longer a prison, but his dear home. One of the passengers, who had been greatly interested in the incident, afterward wrote: "As I watched him nestle down on the deck, I thought of the restless human heart that breaks away from the restraints of religion. With buoyant wing he bounds away from church the 'prison' and God the 'prison.' But if not lost on the remorseless deep, he comes back again with panting, eager heart to church the 'home,' and God the 'home.' The church is not a prison to any man. It gives the most perfect freedom in all that is good and all that is safe."—S. S. Times.

◈

Four Rules of Life

First: If possible, be well and have a good appetite. If these conditions are yours, the battle is already half won. Many soul and heart troubles arise really in the stomach, though it may seem strange to you.

Second: Be busy. Fill the hours so full of useful and interesting work that there shall be no time for dwelling on your trouble, that the day shall dawn full of expectation, the night fall full of repose.

Third: Forget yourself; you never will be happy if your thoughts constantly dwell upon yourself, your own perfection, your shortcomings, what people think of you, and so on.

Four: Trust in God. Believe that God is, that he really knows what is best for you; believe this truly, and the bitterness is gone from life.—The Arrow.

◈

Bread on the Waters

A lady in Scotland, whose husband had left her a competence, had two profligate sons who wasted her substance with riotous living. When she saw that her property was being squandered, she determined to make an offering to the Lord. She took twenty pounds and gave it to the London Missionary Society. Her sons were very angry at this, and told her she might as well cast the money into the sea. "I will cast it into the sea," she replied, "and it shall be my bread upon the waters."

The sons, having spent all they could obtain, enlisted in a regiment and were sent to India. Their positions were far apart, but God so ordered in his providence that both were stationed near good missionaries. The elder one was led to repent of his sins, and embrace Christ. He died shortly afterward.

Meanwhile the widowed mother was praying for her boys. One evening as she was taking down the family Bible to read, the door softly opened and the younger son appeared, to greet the aged mother. He told her he had turned to God, and Christ had blotted out all his sins.

Then he narrated his past history in connection with the influence the missionaries of the cross had had on his own mind, while his mother with tears of overflowing gratitude, exclaimed, "Oh, my twenty pounds! I have cast my bread upon the waters, and now I have found it after many days."—Gospel in All Lands.

◈

The Engineer Cried

"Yes, indeed, we have queer little incidents happen to us," said the engineer. "A queer thing happened to me about a year ago. You'd think it queer for a rough man like me to cry for ten minutes, and nobody hurt, either, wouldn't you? Well, I did, and I almost cry every time I think of it.

"I was running along one afternoon pretty lively, when I approached a little village where the track cuts through the street. I slacked up a little, but was still making good speed, when suddenly, about twenty rods ahead of me, a little girl not more than three years old toddled on to the track. You can't even imagine my feelings. There was no way to save her. It was impossible to stop or even slack much, at that distance, as the train was heavy and the grade descending. In ten seconds it would have been all over, and, after reversing and applying the brake, I shut my eyes. I did not want to see any more.

"As we slowed down my fireman stuck his head out of the cab window to see what I had stopped for, when he laughed and shouted to me, 'Jim, look here!' I looked, and there was a big black Newfoundland dog holding the little girl in his mouth, leisurely walking toward the house where she evidently belonged. She was kicking and crying, so that I knew she wasn't hurt, and the dog had saved her. My fireman thought it funny and kept laughing, but I cried like a woman. I just couldn't help it. I had a little girl of my own at home."—Michigan Christian Advocate.

◈

Room for One More

A visiting bishop in Washington was arguing with a friend of his on the desirability of attending church. At last he put the question squarely: "What is your personal reason for not attending?"

The gentleman smiled in non-offense-intending way as he replied, "The fact is, one finds so many hypocrites there."

Returning the smile, the bishop said, "Don't let that keep you away; there is always room for one more."

◈

Consolation

There are times often, perhaps every day, when a person must needs turn to something or some person for some sort of consolation. Along this line the "Evangelical Message" suggests the following:

If you have the blues, read the twenty-seventh psalm.

If your pocketbook is empty, read the thirty-seventh psalm.

If you are losing confidence in men, read the thirteenth chapter of I. Corinthians.

If people seem unkind, read the fifteenth chapter of John.

If you are discouraged about your work, read the one hundred and twenty-sixth psalm.

If you find the world growing small and yourself great, read the nineteenth psalm.

If you cannot have your own way in everything, keep silent and read the third chapter of James.

If you are all out of sorts, read the twelfth chapter of Hebrews.

◈

The figures of the United States War Department show thirteen million men available for military service. It is well said, "May we never need to call them out."

◈

We accept only paid-in-advance subscriptions to Farm and Fireside. The more of them we get, the better we are going to make the paper. Will you help?

Wit and Humor

To Suit His Taste

THE second day drew to its close with the twelfth juryman still unconvinced.

"Well, gentlemen," said the court officer, entering quietly, "shall I, as usual, order twelve dinners?"

"Make it," said the foreman, "eleven dinners and a bale of hay."—New York Press.

◈

Engine and Boiler

Noody made up his mind that he was not going to be bossed any longer by his wife, so he went home at noon and called out imperiously:

"Mrs. Noody! Mrs. Noody!"

Mrs. N. came out of the kitchen with a drop of sweat on the end of her nose, a dish rag tied around her head, and a rolling pin in her hand.

"Well, sir," she said, "what'll you have?"

Noody staggered, but braced up.

"Mrs Noody, I want you to understand, madam"—and he tapped his breast dramatically—"I am the engineer of this establishment."

"Oh, you are, are you? Well, Noody, I want you to understand that I"—and she looked dangerous—"am the boiler that will blow up and sling the engineer over into the next county. Do you hear the steam escaping, Noody?"

Noody heard it, and he meekly inquired if there was any assistance he could render in the housework.—Pacific Monthly.

JOHNNIE'S BROTHER—"I hear that you're at the foot of your class at school. How is that?"

JOHNNIE—"Well, 'taint my fault. Gussie Thickhead is sick and can't come to school."

Ephreham's Direction for Cooking an Opossum

Just before Christmas Sambo and Ephreham were cutting firewood at the woodpile at home.

SAMBO—"Ephreham, do you lub possum?"

EPHREHAM—"I recon I does. When you ketch a great big fat possum, an' clean him right nice an' clean, put him on an' parboil him 'til he is right good an' tender, then put him in de uben wid some good sweeten taters, an' bake him 'til he is rite good an' brown."

SAMBO—"Hush you mowf, nigger, or I'll fall rite offen dis log." J. W. G.

◈

A Land Interest

"And so you are going to marry old Colonel Cashley? I hear you love the very ground he walks on."

"Yes, it belongs to him."

◈

Marrying for Money

HE—"I am marrying her for her money."

SHE—"But money does not always lead to happiness."

HE—"No, but I thought it might facilitate the search."

◈

A Jubilant Jubilee

Some years ago, before Queen Victoria's death and about the time that the Queen's jubilee was to be celebrated, the following conversation between two old Scotchwomen was overheard one day on a street corner in London.

"Can ye tell me, wumman, what is it they call a jubilee?"

"Well, it's this," said her neighbor. "When folk has been married twenty-five years, that's a silver wuddin'; and when they have been married fifty years that's a golden wuddin'. But if the mon's dead then it's a jubilee."—Sacred Heart Review.

◈

His Opportunity

ELDERLY SUITOR (in despair)—"What can I do to induce you to love me?"

THE GIRLIE—"You can consent to my marriage with your son Jack!"

◈

An Alarming Condition

Brother Rastus Arnold met one of the colored sisters on the street corner some time since, and the following conversation took place:

BROTHER RASTUS ARNOLD—"Good ebenin', Sistah 'Merica. How is all de chillen prepostulatin'? Skuse me, youse is de one whose larmin aditions Ise orter been 'quirin' 'bout fust."

SISTER 'MERICA—"Oh, I'se able to preambulate, but de chillun dey all bin had a bad cole but Fomus, an' nothin' ain't goin' to hab no 'fect on him but de debil, sho." J. W. G.

Unholy Cities

A Berkeley bookseller, anxious to fill an order for a liberal patron, wired to Chicago for a copy of "Seekers after God," by Canon Farrar, and to his surprise and dismay received this reply:

"No seekers after God in Chicago or New York. Try Philadelphia."—Argonaut.

◈

Conflicting Emotions

"What are you crying about, my dear?"

"I have just been reading the old love letters you sent me before we were married."

"That's funny. I was reading them the other day, and they made me laugh!"

◆

A Surprise

MRS. T.—"What are you making these grimaces in the glass for, my dear?"

MR. T.—"I'm trying to practise a look of astonishment. Some of my friends are going to make me a present to-night, and I am supposed to know nothing about it."

◈

Open to Offers

MR. OOFTISH—"What, you are fifteen thousand dollars in debt, and you want to marry my daughter?"

CHOLLY—"Certainly. Unless, perhaps, you can suggest some other way out of the difficulty?"

◈

Has It Ever Occurred to You?

JOKELEY—"My wife's sense of smell is so keen that once when I just happened to mention the word 'whisky' during the day she noticed it on my breath when I got home."

POKELEY—"Oh, come, now!"

JOKELEY—"Fact. I—er—mentioned it to a barmaid in a restaurant."

◈

Hereditary

"It's strange," said the piano teacher, "that you can't learn to run the scales correctly."

"That is probably one of the traits I inherited from father," replied the young lady pupil. "He made money in the grocery business, you know."

◈

Still the Baker's Dozen

BAKER'S ASSISTANT (to master)—"The carpenter has made the bread boards much too small—we can't get the usual number of rolls on them. Shall I order larger boards?"

MASTER—"Nonsense; simply make the rolls smaller."

◈

Meant What He Said

SHE—"When I accepted Jack he said he felt as if he was in the seventh heaven!"

HE—"I can well believe it. He has been engaged six times before."—Fliegende Blaetter.

◈

SHE—"Why do men go bald sooner than women, major?"

MAJOR—"Oh, because they don't wear their hair so long, I suppose."

◈

An Obvious Conclusion

THE WIDOWER—"I've always said that if I married again I should choose a girl who is as good as she is beautiful."

MISS WILLING—"Really, this is very sudden, George. But I accept you, of course."

Not Up to Date in Geography

Andy Junius was splitting kindling wood for Mrs. Crutcher. Andy was a real Southern darky, not as black as the ace of spades, but nearly so.

MRS. CRUTCHER—"Andy, you split kindling like you were raised up to it."

ANDY JUNIUS — "Yessum. Missey Crusher, whar I come fum dey done burn nothin' but wood, an' we niggers hab to cut it all."

MRS. CRUTCHER—"Where did you come from when you came to Kentucky?"

ANDY JUNIUS—"Down in Ole Vagina, Missey Crusher, whare dey hab lots ob possums an' sweeten taters. 'Deed dey do, Missey Crusher."

MRS. CRUTCHER—"What part of Old Virginia was that, Andy?"

Raising himself up to his fullest height, and pushing his old cap back on his head, Andy Junius said in a deep solemn tone:

"Boston Massachewsuts, Missey Crusher." J. W. G.

◈

Meeting Temptation

Little Tommy had been forbidden to swim in the river, owing to the danger. One day he came home with unmistakable signs of having been in the water. His mother scolded him severely.

"But I was tempted so badly, mother," said Tommy.

"That's all very well, but how'd you come to have your bathing suit with you?"

Tommy paused, and then said, "Well, mother, I took my bathing suit along thinking I might be tempted."—Dundee Advertiser.

◈

The Remedy

TRAMP—"Madam, I am suffering from indigestion."

LADY—"Why, I'm sorry. What can I do to help you?"

TRAMP—"Madam, you can cure me instantly by giving me something to digest."—Harpers Weekly.

◈

An Obstacle

JACK (rapturously) — "Now, darling, will you please name the happy day?"

MINNIE—"Three weeks from Thursday, Jack."

NORAH (the kitchen maid, through the keyhole)—"If you please, miss, that's my regular day out. Ye'll have to get married in the early part of the week."

◈

Under Advisement

A newly elected squire in Wisconsin was much elated by his honors, but was not sure that he could carry them gracefully, says a writer in the New York "Sun." So he haunted the courthouse to gather stray crumbs of wisdom from higher courts which sat there.

One day he sat in judgment on his first case, and when the testimony was all in and the arguments made, he said:

"The court takes this case under advisement until next Wednesday morning, when it will render a verdict in favor of the defendant."

◈

Good Business

SHE—"Pa says he will never consent to our marriage."

HE—"Then we shall have to elope."

SHE—"There! I knew pa was wrong. He said you had no business ability, and yet the first thing you propose to do is to save him the expense of a stylish wedding."

—Mayer in New York Times

THE MILITARY WAY

The Confidence Dog

"You don't believe in the intelligence of dogs?" said the owner of a meat market in Brooklyn. "Well, I'll tell you a story that's true as Gospel, and then maybe you'll change your views.

"A customer of mine had a collie that came to me one morning with a slip of paper in his mouth.

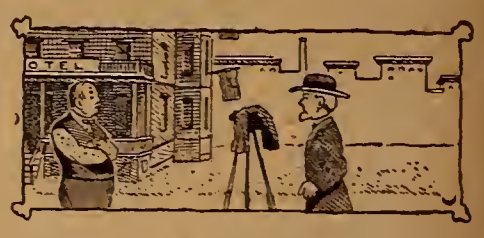
"'Hello, doggy!' said I; and the collie wagged his tail and dropped the paper on the floor at my feet. I opened it. It was a signed order from his master for a piece of sausage. I gave him the sausage. He ate it and went home.

"Time after time the collie came with these orders to me, and finally I stopped reading them. Each, I presumed, was for a sausage, and each procured a sausage. I suppose, all told, the dog got as many as twenty pounds of sausages from me in two months.

"But the master, when I presented my bill, kicked. He said he had only given the dog about a dozen orders, whereas I must have honored nearly a hundred.

"Well, the upshot was that the two of us got together and did a little detective work. We watched the dog. And do you know what we found? Why, we found that this cunning dog, whenever a sausage hunger seized him, would grab up a piece of white paper—any piece he could find—and bring it to me.

"I had been careless, you see, never looking at the paper, and through my carelessness the collie had fooled me for two months."



PROPRIETOR—"Ah, I see you're taking a photograph of my hotel. You want it as a souvenir, I suppose."

FARMER—"No, sir, by gum! Taking a photo of it, so as not to get in there again by mistake."

Definitions

Cake Walk—The two-o'clock A. M. stroll you take trying to forget that you have eaten two pieces of delicious fruit cake.

Horse Laugh—What the horse does when you take the hurdle and he doesn't.

Elections—National indigestion.

Gambling—When you lose.

Legitimate Speculation—When you win.

Economy—What your wife should practise.

Latch Key—A reminiscence of bachelor days.

Angel—Your child.

Imp—Your neighbor's child.—Pacific Monthly.

◈

Double

"What kind of tart will you have, Willie—plum or apple?"

"I'll take two pieces of each, please."

"Two pieces!"

"Yes'm. Mama told me not to ask twice."

◈

The Overruled Objection

The judge had his patience sorely tried by lawyers who wished to talk and by men who tried to evade jury service. So when the puzzled little German who had been accepted by both sides jumped up, his honor was exasperated.

"Shudge!" cried the German.

"What is it?" demanded the judge.

"I don't think I make a good shuror."

"You're the best in the box," said the judge. "Sit down."

"But, shudge," persisted the little German, "I don't speak good English."

"You don't have to speak any at all," said the judge. "Sit down."

The little German pointed at the lawyers to make his last desperate plea.

"Shudge," he said, "I can't make noddings of what these fellers say."

It was the judge's chance to get even for many annoyances.

"Neither can any one else," he said. "Sit down."

With a sigh the little German sat down.—Popular Magazine.

◈

EDITH—"I am surprised to hear you speak harshly of Bob."

ETHEL—"Well, I can't help it. Just as I was sitting down to enjoy a good cry, he drops in, tells a lot of funny stories, and sets me laughing."

◈

Like a Book

He talks like a book, his
Admirers all say.
What a pity he doesn't
Shut up the same way.
—World To-day.

ALFALFA IN SOUTHERN INDIANA

A few years ago we thought alfalfa could not be grown successfully on our clay soil. We thought it was for farmers who were lucky enough to have black loam soil. Now we have learned better by a few of the most venturesome farmers trying it.

It will grow on any soil that will grow a good crop of red clover; in fact, red clover prepares the soil for alfalfa. If you get a fair stand you are all right, as it will grow fast, and you can cut it three or four times each season.

The best way to get a good stand is to plow the ground in the fall or late winter. Let it get packed together, then disk it in the spring or harrow it well both ways and sow oats and alfalfa. I don't know that the oats are a necessity, but you get a grain crop that way, and the alfalfa does well, also.

Sow twenty to twenty-five pounds of seed to the acre. Be sure to get the alfalfa that has the purple bloom, as that with the yellow is of little food value.

If you sow the alfalfa seed alone, do not let the weeds get over six or seven inches high. Clip them off, or they may crowd out the alfalfa.

If the plants turn yellowish, cut them, but do not cut when wet. Alfalfa is slower to cure than clover hay, and it should be cut when the weather bids to be fair for several days. If a rain comes before it is taken in, turn the hay and let it thoroughly dry before mowing it away.

If you have never sown alfalfa, try a few acres at first. Get fresh new seed, and sow the land both ways, using half the seed each way. Sow on well-drained land. Put all the well-rotted manure you can spare on the alfalfa track. Sow over if you don't get a good stand. This can best be done by disking the alfalfa plot. Disking does not kill what plants are there, but only aids them to grow, it seems.

Any bottom land that water does not stand on is fine for alfalfa. But beware of plowing it in the spring and sowing the seed at once. Alfalfa does well if sown the latter part of August. It may be sown with rye in the fall, as the rye protects it from the freezes.

All kinds of stock relish the alfalfa hay, and it is the best rough feed for dairy cows the farmer can raise. The cows give a larger flow of milk, and it is richer in butter fat, than when they are fed fodder or clover hay.

The cattle have short, sleek coats of hair when fed on alfalfa, and as a green pasture it cannot be excelled. But don't turn starved cattle on a fine pasture of it, or they will eat more than is good for them. Let them go in the pasture a short time each day, until they are used to eating it.

F. KING.

SHALLOW PLOWING FOR GRASS SEEDING

A West Virginia subscriber asks a number of questions, some of which he will find answered in recent issues of FARM AND FIRESIDE. It is best to plow land shallow before seeding to grass in spring. Plowing makes a better seed bed, and early growth is better. He should sow a considerable mixture of redtop on his land that is rather wet. Only thorough cultivation will kill out grasses or weeds that have taken possession of a field. I would summer fallow to make a clean job. It is not advisable to use a roller on land that is rather wet. Plenty of manure to open it up and add humus is better.

This gentleman, and several others who have written us, must get the idea out of their heads that a crop of grain and one of grass can be grown on the same land in one year. If the land is short on fertility, the tract should be divided and half seeded to clover or cow peas. Correspondents should always give their name and address to the editor of FARM AND FIRESIDE. Sometimes it is found advisable to answer their questions by mail, and this cannot be done unless name and address are given.

FRED GRUNDY.

AGRICULTURAL NEWS-NOTES

In Fresno County, California, over 51,500 acres are devoted to growing grapes for raisins. This is more than 320 one-hundred-and-sixty-acre farms.

In the number of cases of canned goods produced, California and Maryland lead in peaches, Maryland and New York in vegetables and Iowa and Illinois in sweet corn.

Luther Burbank says that if each farmer would add but one potato to each hill the production of these tubers would be increased 21,000,000 bushels.

The amount of sugar consumed by each person in the United States has increased from thirty pounds in 1860 to fifty-three in 1900 and seventy-six in 1906.

A SUBSIDY PROBLEM AT HOME

SOME people think the Grange has not been consistent in its opposition to subsidizing of ocean steamship companies. At any rate, the Grange has been persistent in its fight against the subsidizers. For myself, I am not entirely sure that the whole logic of the advocates of subsidies has been well understood by those who believe that the steamship corporations ought to be allowed to get along without support from the public treasury. In any event they ought to be allowed to run their business without government help until certain of our "at home" problems are more satisfactorily solved.

Just now the business of the whole country is partially paralyzed because the railroads cannot carry the wheat and corn, the hay and potatoes, the coal and iron that are waiting for shipment. Our most valuable products are going to waste, and the earnings and savings of thousands are being destroyed, because we lack transportation facilities at home. The great captains of the railroad industry are confessing their incompetence themselves. They have grown rich and great—and yet they are not doing their job, that of carrying to market the products of field and forest, of mine and manufactory. And all the while the great waterway of our country is permitted to desolate large areas of our richest territory.

It is humiliating to reflect on the national stupidity which has permitted one of the greatest water systems of the world to rob us of our wealth instead of being utilized for the enrichment of the nation and its people. Time was when the commerce of the Mississippi and its branches was of relatively great importance to the United States. But the Father of Waters has been robbed of his primacy. The railroads have driven the commerce from the rivers; and the proud cities of other days—Cincinnati, St. Louis and New Orleans—have lost the prestige that would still have been theirs had Congress made proper provision for harnessing the floods of the Ohio and Mississippi. The neglect of the great river and its branches has meant much more than the relative decline of the cities named. It has had much to do with making possible the stupendous railroad monopoly of to-day. Now we are paying the price of neglect. The monopoly which we have encouraged has destroyed the means by which we might regulate it, and has broken down in its ill-managed efforts to do the business that ought to be done in large part on the great public waterways.

A few years ago, while some of us of the West were advocating the reclamation of portions of our vast arid areas under government management and by the temporary use of the proceeds of the sales of Western lands, it was seriously argued by our opponents that the government might just as well drain the lands of the East and the South as to water the lands of the West; and the argument was perfectly sound, supposing that the government owned the swamp lands. Some there were who were bold enough to declare that the regulation of Western streams would benefit the whole nation by regulating the flow of the Mississippi. Now, however, the time has come to consider in all seriousness the problem of controlling the Mississippi and other large rivers for the protection of the public against the extortions of the railroads, and for the purpose of giving our own internal commerce a chance to develop along normal lines.

The thing can be done. Even now the upper Mississippi is regulated by the government, ostensibly to benefit the commerce of that stream, although the chief benefit is enjoyed by the owners of the great mills at Minneapolis, which use the conserved water to turn their water wheels. But this is excusable, even if it is not entirely justifiable. Long ago the Egyptians were able to store a large part of the floods of the Nile to make the abundant crops that made the lower Nile Valley the granary of the world. Surely, in this age of steam and steel, of electricity and copper, we can do more than the ancient Egyptians did. We can store a portion of the flood waters of the great Mississippi Valley in a thousand of the tributaries of our central stream—flood waters that now cause destruction for a thousand miles, and that might be so controlled as to carry the commerce of a nation and be a sure promise of prosperity rather than a constant threat of disaster and death.

It is true that millions have been wasted in short-sighted efforts to prevent the ravages of the floods of the Mississippi. But many other millions have been spent on ships of war that have served no useful purpose but to train men in the art of destruction—otherwise called national defense. Now is the time to plan wisely and to spend judiciously. Now is the time to begin to regulate where the floods begin, not where they have acquired an incalculable destructive power. Now is the time to study how to make our rivers begin anew the work of carrying our inland commerce—a commerce almost infinitely greater than it was fifty years ago, when our rivers were thronged with steamboats. By a wise system of storage, of regulation and of river improvement the United States can promote the establishment of a river commerce within its borders that will soon rival or exceed the commerce of the Great Lakes. The rivers are ours. By the wise use of their waters we can save untold millions in land values; and we can add untold millions to our values by making these rivers fit to carry at reasonable rates a commerce even greater than that which we are asked to encourage on the wide, free waters of the great Atlantic.

Now is an opportune time to postpone indefinitely, if not for all time, the schemes of those who would have the United States endow ships to enter into a false competition with the merchant fleets of other nations. But strategy is better than direct opposition. Let the Grange demand money for the development of internal commerce—not for the endowment of transportation companies, but for the regulation of the waters of our great and lesser rivers, so that those who would be glad to build steamboats if they could be assured of navigable water at all seasons may have the fullest assurance of every opportunity to run their boats for thousands of miles on rivers amply deep and properly controlled.

D. W. WORKING.

The Grange

BY MRS. MARY E. LEE

MRS. LOUISE M. WESTGATE

Mrs. Westgate has endeared herself to all who know her by her sweet, gentle and sympathetic manners, and her sincerity in all things. Hers is not a narrow, but a broad outlook. She is a native of England, but came to America with her sister several years ago. She taught school in Kansas for a number of years and was

MRS. LOUISE M. WESTGATE

always a leading spirit in the splendid organizations in that state. Two years ago she married to E. W. Westgate, Master of Kansas State Grange.

Mrs. Westgate is greatly interested in educational work, and believes that the Granges of the country must soon come to a plan for systematic work. The Grange is the farmer's school and clubhouse. She also sees in the Grange a marvelous opportunity for young men and women to gain that training which will make them "speakers of words and doers of deeds."

THE GRANGE COMMERCIAL EXCHANGE

The Patrons of Husbandry, represented by 105 Granges in New Jersey, have recently formed an organization for cooperative purposes, called "The Grange Commercial Exchange of New Jersey."

Its object is to enable the patrons to purchase all commodities which they use directly from the manufacturer or grower, thus enabling them to secure them at prices within the farmer's reach.

The exchange has been legally incorporated with the following directors: J. W. Warrick, president, Moorestown; H. C. Hulsart, vice-president, Matawan; L. H. Burge, secretary, Vineland; W. H. Borden, treasurer; E. M. Strong, Ringoes. The Granges in the state, to a large extent, as well as individual members, have and are subscribing for stock, and already the success of this worthy enterprise seems well assured.

THE OBSERVATORY

All states having rival telephone lines suffer from the same trouble that New York suffers. Do you like their proposition for securing better service? Have you a better way to propose? What is it?

Are you interested in the Grange? Do you want to know more about it? No matter whether you expect to organize or not, write for information. One cannot afford to be ignorant of the work of one of the foremost organizations in the country for securing good for farmers.

The Grange that contents itself with being a mutual admiration society or takes up the time of each meeting in discussing how to get a large attendance or in telling what great things the state and national Grange has done is not likely to enlarge its hall or greatly arouse the concern of those who are benefiting by public lethargy. The way to get a good attendance is to have interesting discussions as well as opportunities for social enjoyment. People will go where it is to their interest to go.

Secretary Giles of New York State Grange reports 624 Granges, with a membership of 71,347, a gain of 6,057 for the past year. The Grange is represented in 52 counties. There are 43 Pomona Granges in the state and 5 juvenile Granges. The total receipts for the year were $22,053.47. Disbursements. $21,344.04. There is in the state treasury, for work in advancing the cause of humanity, $19,990.21. Secretary Giles' report is elegant in every detail, showing experience, precision and ability.

New York State Grange is seeking better telephone service. It contends that, inasmuch as the telephone companies are occupying the highways free or at very nominal rates, but that, actuated by local jealousies and rivalry, refuse to interchange business, thus curtailing much of the benefits that might be derived, that the laws of the state be so amended that all telephone companies shall be obliged to make connections with each other, that there may be a prompt and efficient interchange of business at a moderate expense over each other's lines.

Geo. P. Hampton, who vigorously and effectively aided the Grange in securing the denatured alcohol law and its subsequent amendments looking toward regulations that would make it possible for farmers to manufacture alcohol for industrial purposes in small stills, is in Germany investigating manufacturing establishments, and all kinds of house and farm implements which can be profitably operated by use of alcohol. He will have an interesting story to tell our readers when he returns.

Pennsylvania has established another Grange bank, The Grange National Bank of Chester, with a capital of $100,000 and a surplus of $10,000. There are 244 shareholders. The Grange banks will conduct a general banking business, just as other national banks do. It will be interesting to see Grange National Bank money. This bank bought a $5,000 property, and will proceed at once to erect a suitable building. It has bought $50,000 in government bonds, and will issue that amount of money thereon. Success to these new enterprises. Potter County has money subscribed for a bank, while Clarion and Susquehanna counties are working up banks.

A number of state Granges are placing organizers in the field with liberty to work in any section that promises results. In those states where the Grange is active a good organizer can place Granges because farmers are eager to belong to that which is doing something. Organizing is a business in itself, and those who have shown ability in that line should be given the largest opportunity to push the work. This is in accord with all rules of business and the desire of the membership. There is enough for all to do if each will work in the line best suited to his or her activities. Let each lend a helping hand to all that works together for the interests of the Order.

PITHY POINTS FOR THE FARMER

There was a lazy farmer
Whose name was Sam Felix,
He set his alarm for four,
But he got up at six.

Make friends with your stock.

A hen is a bundle of cackles with eggs between cackles.

In this day of hustling some men haven't time to be honest.

The pedigree is but the guinea's stamp, a hog's a hog for a' that.

It is wrong to be what you are if you are not what you ought to be.

To be popular with your friends, dress as well as they do, but not better than they do.

Some people know better than to make mistakes—but not in time to apply their knowledge.

You need better accommodations than you have if you can afford them without going in debt.

Every man's place is on the farm until he finds out that the world actually needs him in some other place.

The value of the little things shows itself in the hen as in nothing else. She lays only one egg at a time.

Speak a kind word or do a kind act to one of your sheep and all the other sheep will find it out. Try it.

The time to do your level best is to-day, and the time to slack up is to-morrow. To-morrow never comes.

The stock which you call yours might prefer to belong to some one else. It all depends on the kind of treatment you give it.

A man in Kentucky kicked one of his cows the other day. In a few days the cow died. It pays to be kind to dumb animals.

No man will come to you for advice on how to run his farm if your way of running your own farm does not offer an invitation.

Some men would be glad to get into the other fellow's shoes, even if it would result in the other fellow having to go barefooted.

The world is expecting greater things of the farmer to-day than she did yesterday—and the farmer is better prepared to do things.

What would you do in the event of an unexpected fire? Think it over, so that if the time should come you will lose no time in doing the right thing first.

To the extent that a man is interested in good roads and other improvements in his neighborhood, to that extent is he interested in other people than himself.

The old proverb, "Don't put all your eggs in one basket," is carried out every day on those farms where the hens lay more eggs than any one basket would hold.

Do not clip the wings of your chickens to keep them out of the garden. Build the fence high and give them plenty to eat and plenty to do on their side of the fence.

Never look a gift horse in the mouth—until you get him in the barn where nobody can see you. Of course, you have a right to satisfy yourself as to the value of the gift.

There was a hustling farmer,
Whose name was William Moore,
He had no alarm at all,
But he got up at four.

W. J. B.

◈

THE BOOK OF ALFALFA

History, Cultivation and Merits. Its Uses as a Forage and Fertilizer. By F. D. Coburn, Secretary Kansas Department of Agriculture.

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◈

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These books are for sale by FARM AND FIRESIDE, Springfield, Ohio.

To Our Subscribers

This Is Our Last Call

During the spring we have been making these great Last Chance offers, and almost all our readers have taken advantage of them, but the subscription season is now over and we must withdraw them. However, in order to give another chance to those who have not before had an opportunity to accept one of these great offers, we have decided to hold them open until May 15th. **Remember, these great offers will absolutely be withdrawn May 15th. Under no circumstances can we accept subscriptions for these offers if they are mailed after that date.**

This is a great chance.

You will be busy when your subscription expires, and you will forget to renew. You know how that is. Then we will have to bother you during the busy season, and by that time these great low-priced offers will have expired.

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We haven't raised the price—

Not yet.

But the time is coming.

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This is your **very last chance**—Don't delay!

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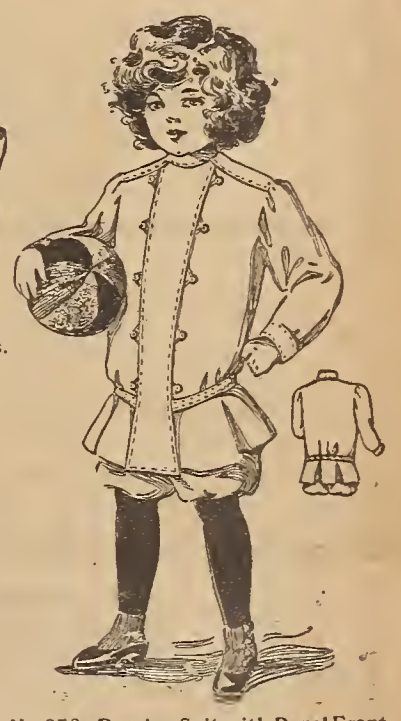

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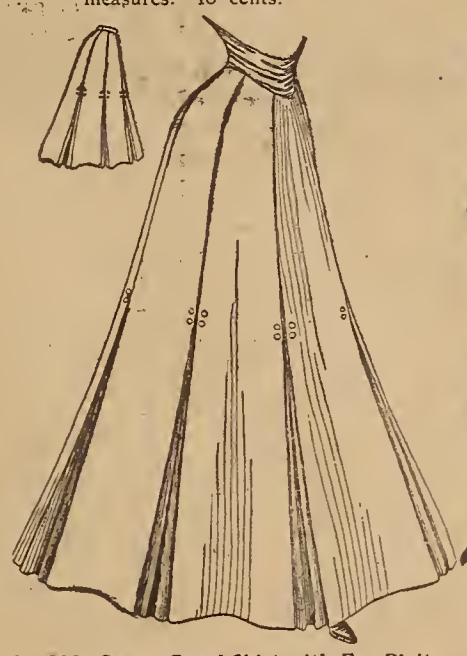

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Anyone who knows anything at all about TOKAY GRAPES will tell you that *absolutely* the safest, surest way to secure a large and permanent income is to get hold of a few acres of Tokay Vineyards. But matured Tokay Vineyards are selling at $1,000.00 an acre—and very few for sale even at that price—and there is only one place in the United States where they can be grown, and that is in the Sacramento Valley. The Tokay Grape was formerly grown only in Tokay, Hungary, but it was found that a limited section of the Sacramento Valley contained exactly the peculiar combination of soil and climate to produce this wonderful grape. It can be grown nowhere else, consequently the supply has never equaled the demand, and never will Buy you say, I cannot afford to go to California to live, neither can I afford to pay $1,000.00 an acre for vineyards, no matter how profitable they may be. We will help you out. We will buy the land, have it cultivated for you by our experts, and turn it over to you a full-grown, perfect vineyard, bringing you a regular permanent annual income of at least $200.00 an acre, and the best of all is that we undertake to do all this, and charge you

Only $5 Per Acre Per Month.

We guarantee you against any possible loss, by securing and insuring the title to your vineyard in one of the strongest Trust Companies of California. We also pay all the taxes and expenses of every kind connected with the improvement and development of the vineyard. We also guarantee to harvest and market the crops for you if you wish, charging you only a small percentage of the net profits, or you can go there and live on your Vineyard and attend to it yourself, in one of the grandest and most beautiful valleys of America, and probably in the world.

Here is certainly an opportunity different from anything ever before offered to you, better than anything you have ever even heard of before. You cannot lose; you have earth for your security, and the Best Security on Earth is Earth. The Vineyards are located at Galt, on the Southern Pacific Railroad, where all lands are rapidly rising in value. If you want to go out and see the Vineyards you can go with the next party we send out, or get up a little party and go as their representative. It is a trip that you will never forget.

Will you become one of the few who will have the courage and foresight to become the owner of a California Vineyard, and thus assure yourself of an income which will at least make you independent. If so, write for our little booklet, which tells you many things we cannot say in an advertisement, and when you write ask us to reserve at least two acres, and remember that in case anything should not appear perfectly plain to you, we are prepared to make it so, to show you absolutely and conclusively the proof of every statement we make. The only mistake which you can possibly make is NOT to cut out this Coupon and mail it to us today. That would certainly be a very serious mistake.

CUT THIS OUT.

SACRAMENTO VALLEY IMPROVEMENT COMPANY,
427 Victoria Bldg., 8th and Locust, St. Louis, Mo.

Please send me your little booklet showing how I may become owner of one of the celebrated Tokay Vineyards of California, and secure an income which will make me independent for life.

Name.....

Street..... *City*.....

County..... *State*.....

READ THE PROOF,

See what TOKAY VINEYARDS are really doing for their fortunate owners. We have space for only a few items here, but could show you many more.

THE WEEKLY WITNESS,
Galt, California, Aug. 30, 1906.
"Grapes Sell High."

C. C. Franklin, who lives a short distance west of Woodbridge sold his crop of Tokays for $1,200, this price was paid for a five-acre vineyard, or $240 per acre, and the purchaser pays all expense of harvesting, marketing, etc. This is eight per cent on $3,000 per acre; rather a good price for land, but there are hundreds of acres in the Tokay belt of land just as good as this.

THE WEEKLY WITNESS,
Galt, Cal., July 19, 1906.
"Prosperous California."

Tokay grapes are now moving East in large shipments, and not a few are netting from $250 to $400 an acre from their vineyards.

THE LODI SENTINEL,
Lodi, Cal., November 1, 1906.
"Well Satisfied With Returns"

From his five year old vineyard this year. George Langford shipped 27,369 crates of grapes East besides the average amount of culls to the winery. Mr. Langford early in the season estimated his yield from his 160 acres, at 25,000 crates. He says he is well pleased with his returns.

THE LODI SENTINEL, Oct. 2, 1906.
"Tokays of Color Are in Demand."

The returns from the shipment of Tokays from the Norton & Angier vineyard affords a study to the grower of table grapes. Thus far this season there have been about 3,000 crates shipped from this vineyard, and of that number Mr. Angiers has returns from the first 900 crates. The lowest any of his grapes sold for in the Eastern markets has been $1.75, and the highest at $2.30, except clusters that brought $3.75.

NOTE—Deduct shipment charges, about 45c. per crate, and take the general average of 300 crates per acre. This shows the exceptionally high profit per acre.

THE LODI SENTINEL, Oct. 2, 1906.
"Good Grapes at Galt."

Some of the choicest Muscat grapes that have been raised in California were shipped to the Eastern markets by Galt vineyardists this week. The grape crop in the Galt district this season has been supremely good. Table grapes on the vines have been sold in the Galt district this year at the rate of $150 an acre, and the purchasers are coining money on the deal.

Hammond, N. Y., Dec. 14. 1906.
"Will Help Grape Prices."

A local newspaper says: There is a prospect that the coming season will witness a boom in grape culture throughout this community surpassing anything in the last decade. Because of the pure food law, effective on January 1, grapes promise better prices. According to this law, no wine, unless it is made from pure grape juice, can be placed on the market, unless the label upon each bottle and cask bears a printed formula of each and every adulterant entering into the wine. This will of course place a premium on pure wine, the demand for grapes will be greater, and better prices will prevail. From $10 to $15 more a ton is promised for all varieties of grapes next year than has been paid in the last decade.

THE LODI SENTINEL, Sept. 29, 1906.
"Another Sale of Tokays."

Producers Company.

Following are the prices on a splendid car sold by the above company: Henry Pope, $1.35 and $1.30; Lone Oak Vineyard, $1.25; W. G. Mickie, $1.45; E. H. Leffler, $1.95; Burge & Leffler, $2.10; Sanguinetti Bros., $1.65; Mrs. G. McKenzie, $1.55; R. Couper, $1.50; C. H. Buck, $1.50; Guggolz & Brauer, $1.25.

NOTE—There are 925 crates to the car. This is an average of $1.53 per crate, which means a yield of $324 an acre.

THE LODI SENTINEL, Oct. 2, 1906.
"Supply Does Not Equal the Demand."

WANTED—100 tons Tokay grapes (run of vine), for winery. Will pay highest price, f. o. b. Lodi. E. E. Deaver.

NOTE—Even at local points the demand is far in excess of the supply; the wineries cannot nearly get the required amount of grapes for their existing plants.

SACRAMENTO VALLEY IMPROVEMENT CO.
427 Victoria Building, St. Louis, Mo.

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in each town to ride and exhibit sample 1907 model. *Write for Special Offer.* Finest Guaranteed **1907 Models $10 to $27**
with Coaster-Brakes and Puncture-Proof tires.
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Great Factory Clearing Sale.
We Ship on Approval *without a cent deposit*, pay the freight and allow TEN DAYS' FREE TRIAL.
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If so, write and tell me to what state, country or locality you want to go, or are interested in, and you will receive FREE maps, books, etc. Also reliable information about soil, climate, crops, price of land, etc., of the state you are interested in. We can help you, and our services are free to all. Write to

FREDERIC C. TRAUB
International Immigration Agent, St. Paul, Minn.

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If you will get two of your neighbors who don't take Farm and Fireside regularly to subscribe at twenty-five cents a year, and you send us the fifty cents, we will send Farm and Fireside to each a full year and give you a full year free. Three yearly subscriptions in all. That's a good fair offer. Let us hear from you.

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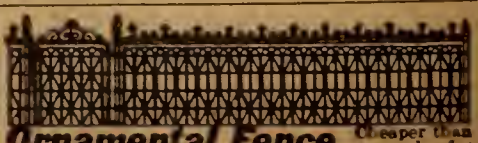

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FARM AND FIRESIDE

AN ILLUSTRATED FARM AND FAMILY JOURNAL

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Scouring the Earth for Beneficial Insects

CALIFORNIA is a firm believer in practise of using one insect for the destruction of another, or the bug versus bug theory.

California is probably the greatest fruit-producing country in the world, and has been from time to time seriously affected by insect fruit pests.

In the beginning the old methods of exterminating fruit pests, such as spraying, fumigation, and destruction of affected trees, were resorted to.

GEORGE COMPERE

But these methods cost immensely in money and labor, and at the same time did not appear to have any beneficial effect.

Then the parasitic idea was adopted and has thus far proved an unqualified success.

The first victory won for this method was the destruction of the white, or cottony, cushion scale, which in the early eighties threatened to wipe out the citrus fruit industry of southern California.

The insect through which this victory was achieved was Koebele's ladybird, or hovins Koebelei. It was discovered by Prof. Albert Koebele in Australia, and it was California that sent out the Professor to find, if possible, an insect that would destroy the white scale.

Ever since that time the state has kept men in the field searching for beneficial insects for the preservation of its fruit industry.

For the past seven years George Compere has been the field entomologist employed by California in this important work, and Mr. Compere has just recently returned from his seventh tour of the world in the prosecution of his entomological duties.

Now he is just starting on his eighth tour.

Mr. Compere serves in this capacity jointly for the state of California and the government of West Australia. And he can do this to the mutual satisfaction of the two countries, for the reason that the fruit pests of California and West Australia are very nearly identical.

The two principal exceptions to this rule are the fruit fly and the codling moth. The latter is prevalent in California, but is unknown in West Australia, while the fruit fly is very prevalent in West Australia, but is entirely unknown in California.

It was only a short time ago that I met Mr. Compere in the office of the deputy horticultural commissioner in San Francisco. Mr. Compere was only a few days from on board one of the great oriental liners from Hong Kong.

He was in excellent health and bronze from his explorations in the Far East, and from the winds of a long sea voyage, and he was just as deeply immersed in bugology as he ever was; but, as is his custom, was ready to talk to the newspaper men.

This affability springs from good nature alone, for great as is George Compere's work, he never courts publicity.

And I think the world has but a slight realization of the importance and value of Compere's work. Even here in California, where inestimable benefits are being received from this work, there is a lack of due appreciation.

The fruit growers of the state know that if at any time they find their trees or vines affected by an insect pest, all they have to do is to notify the state horticultural authorities either in San Francisco or Sacramento, and by return mail they will receive a little wooden case containing a colony of little live, crawling insects, with directions how to liberate them among their affected orchards or vineyards.

It may be the white, the black, yellow, purple or San Jose scale, mealy bugs, red spider, the various aphids, brown apricot scale or almost any other insect pest that is known in the Golden State; but no matter, the right bug will be forthcoming to devour these enemies of the husbandman.

But none of these parasites were originally found in California; not a bit of it. It required great research and study in the entomological lore of the world in the first place to know just what insect was the natural enemy of the pest insect; the next thing was to discover in what part of the world the parasite might be found.

After that there were long sea voyages, continental and transcontinental tours, and diligent search of localities, in order to make an absolute capture of the bug.

And the bug once caught, what then? Why, the difficult and delicate task of transporting him across continents and oceans to California or West Australia, or both!

Where were these little mites that have been, and are to-day, preying upon the insect pests of the Golden State discovered?

In Australia, South America, Europe and Asia.

The ladybird was discovered in Australia, as has already been stated; the parasite for the fruit fly was found in Brazil; the codling-moth parasite was picked up on the west coast of Spain, and the natural insect enemy of the red and purple scales was dug up in the wilds of the Celestial Empire.

For examples of this world-wide touring in search of beneficial insects let us take Compere's first and his latest journeys.

His first was made in 1899. He went to Australia in search of a parasite for the red, or Chinese, scale. He landed in Sidney; went to New Zealand, New Caledonia and the Fiji Islands.

Then he went to China, Cochin China and Java, and finally found the insect that he was looking for in the northern part of China proper. He secured a collection of the insects and shipped them to San Francisco, where they arrived alive and in good condition.

Mr. Compere had other parasites in view which he thought existed in China, but he ran up against the Boxer riots, and was compelled to defer his search.

He returned to Australia, where he made a collection of beneficial insects, and shipped them home. It was at this time that his work came to the notice of the government entomologists of West Australia, and an arrangement was made whereby he was to labor for that country conjointly with California, and ever since he has been under pay of the state of California and King Edward.

The first work which he did for the Australian government was to go on a long search for a parasite for the fruit fly which was at that time devastating the fruit sections of that country.

The search for this insect was the occasion of three tours around the world.

But of course this would not imply that Compere was doing nothing else in the meantime. There were long intervening sea voyages, and during these Compere was buried in his books. He studied geography, entomology and horticulture from the books.

Then there was not a landing, even though it might be nothing more than a few hours call at some lonely island of the Pacific, but what Compere, armed with sheet, net and microscope, rushed ashore and put in all spare time in beating the bushes for bugs.

Then Compere is not a man of single ideas. He has, no matter where he goes, a program of action all made out. When he lands in a port, no matter in what part of the world he may be, he knows positively whether or not he can spend time profitably in the neighborhood hunting insects, and he knows, in cases where there are desirable bugs, just what bug or bugs he may profitably look for.

So in these long main tours there are numerous side excursions and by-searches in the interest of the two countries which pay him his salary. There is always a main object in view, but there are subsidiary ones that are pursued at the same time.

Now let us take his latest tour, or the itinerary of 1906!

In January and February of that year he visited California to confer with Hon. Ellwood Cooper, state horticultural commissioner, and other members of the department. In February he went to New York and sailed then to France. From France he journeyed to Spain, and Algiers, and then back to France again.

Then he went to Naples and struck that town in the very midst of the Vesuvian terror. He walked about at daytime under darkened skies, and when he ventured out of doors a shower of ashes and cinders fell over him.

Here he received orders to return to West Australia, and he set sail immediately, and the deck of the steamer upon which he sailed out of the Bay of Naples was several inches deep from debris vomited forth by the volcano.

Finishing his business in West Australia, he embarked for China via Sidney and Queensland ports. From Hong Kong he went to Ceylon and India.

Then he doubled upon his trail and went back to Ceylon; then back to China he went, reaching Hong Kong a few days after the typhoon of September 18th had visited that place.

In this port he witnessed all the wreck and ruin and human suffering caused by that disturbance, and he had not been in port many days before the great river steamer Han Kow burned at her wharf with hundreds on board.

But his greatest risks were taken in the Poona districts of India, where the Asiatic plague was raging, and in the west river districts of China, where a horde of Chinese pirates were committing depredations.

In the one place the natives were dying off at the rate of one to two thousand a day of the plague, and all who could were leaving the towns and camping in the open. Compere in this instance decided that discretion was the better part of valor, and left the spot as soon as he consistently could.

But in the west river districts of China he pushed his research into the country regardless of the presence of the dangerous pirates.

He took passage upon a house boat and pushed up one of the rivers, going ashore at every opportunity to scrutinize the country for parasites. But it was not considered safe to go beyond hailing distance of the house-boat guard; but at night it certainly did become a question with Compere whether it were the wiser plan to chance an attack by pirates on shore or go on board the house boat and contend with the swarm of vermin that infested the interior of that craft.

So in traversing the globe and peaking into every out-of-the-way place in creation this indefatigable bug hunter meets with all kinds of adventures on land and sea; but he allows no ordinary hardship or danger to deter him from pursuing his unique avocation.

And it not only requires courage and enterprise in the field, but patience and perseverance in consummating the objects of his search.

It is no easy undertaking, even after an insect has been discovered, to capture, imprison and transport it to the ends of the earth and have it survive the journey and thrive in its new surroundings.

BEATING THE BUSHES FOR BENEFICIAL INSECTS

Let us take Compere's experience with the parasite for the fruit fly for example.

In the first place, it was a long, hard chase to find it. It was wanted for West Australia, as I have already explained; but Compere first traced it to Washington, D. C., and going to our capital, he found that the insect had been sent there to be identified by the experts of the

[CONCLUDED ON PAGE 2]

To Young Men Thinking About Leaving the Farm

If some of our Farm and Fireside family would read their paper a little more carefully they would not ask questions that have been fully answered in recent numbers. Learn to read your papers systematically. Begin with the first page, and look over the headings of the different articles and mark those you are most interested in, then read them as you get time, and read them closely. When I find an article I may wish to refer to again I mark the number of the page on the front cover of the paper, then file the papers away, if the other members of the family have read them.

* * *

This is the time of year when hundreds of young men and nearly grown boys are thinking very much about leaving the home nest and striking out for themselves, and the many letters that come to me from them show plainly that most of them are very desirous of making a safe beginning. Some want to earn the largest wages they can possibly get. Others want to get into positions where the chances are good for a strong, hard-working young man to rise rapidly to good, well-paid positions. They first want to begin gathering funds at once to form the nucleus of what shall become a modest fortune. As one of them puts it: "I want to get the highest wages I can, to get together a fund that will earn me more than I can sell my services for." The others are not caring much about beginning with good wages, but they want to see a good prospect for high wages in the near future. They want to begin at the bottom and merit a rapid rise to the position and salary they covet.

* * *

These young fellows write me for advice. If I could sit down and talk to each of them for half an hour I could tell them which class they would better get into. But I cannot do that. The young man who is naturally bright and quick would most likely do best to seek the situation where diligence and merit assure a rise. The naturally slow thinker who is generally inclined to be a little clumsy, a little slow in action, would succeed best by beginning with the best wages he can obtain, saving every penny he can, and working his way up to independence by sheer steadiness, economy and careful management. He will not reach the heights the other boy does, but he can make sure of independent comfort for old age, besides being able to take life, after he has passed his prime, very much easier than the man who depends upon his muscles for his daily bread. One should be able to retire himself on the pension his savings will bring him when he is fifty years old. Every young man should work with that end in view.

* * *

In the district school I attended a few months when I was a small chap was a boy who almost grew up in the primary and second classes. He was a good-hearted, truthful, trusty boy, but naturally so slow in comprehending things in books that he made almost no progress in his studies. He quit school at about sixteen, his chief reason being that he had so outgrown his class that he was ashamed to be seen in it. At eighteen he obtained permission of his father to hire himself to a neighboring farmer. This man kept him five years, increasing his wages a little each year. He paid him his wages at the end of each three months, and the boy took every penny of it that he did not need for clothing to his mother. She loaned it out for him, showing him how it was done, and how to avoid the traps always set for the unwary. That man is now living in a pretty little house in a Western town. He owns a large farm, which he leases for a neat little yearly sum, and he has money loaned out. His income is about one thousand dollars a year. He cultivates his little garden, is a great lover of flowers and has lots of them, and, strange as it may appear, has become a great reader. He takes two magazines, an agricultural and a floral paper. On his farm he has had the same two tenants nine years. I wish the boys, and grown people, too, who used to play mean tricks on him when he was a boy could see him and his home now.

* * *

To the boys who are just starting out for themselves my advice is to get money, and to save it. Don't mind what dreamers and theorists say about there being better things in this world than money. Put one of them in a locality where no one knows him, or in a strange city, some night without a penny, then ask him how he liked the situation. I think he will be quite ready to admit that a dollar is about as good a friend as one can have. So my advice to the boys who are beginning life is to go after the cash. And when you get it, hold every penny of it you can. I well remember the time I went out into the world to make my way. It looked like a great blank to me. I soon found that there are lots of people who are ready to help the fellow who helps himself, but there is mighty little practical sympathy for the dead broke. I remember well how one bleak night in March I curled up on the lee side of a pig pen and slept until I nearly froze to death. I did this because I had no money to buy lodging, and could find no one who would take me in. Possibly this was unnecessary; but I was a timid boy in a strange country and easily rebuffed. Never since that time have I been without cash, though sometimes it ran a little low. I have seen men standing about Salvation Army headquarters shivering and waiting for a cup of coffee and a roll. I have seen others crowding about police headquarters begging for the privilege of lying on the floor all night. Any one of these men were more than twice as strong as I ever was, but they had wasted their earnings. I had saved mine, and was having some of the good things a nice hotel supplies. It matters not if you haven't a relative in the world; if you have cash you can buy all a relative would give you. You will find that even a relative will treat you vastly better if your pockets are full of dollars than if they are empty. So, boys, don't waste a moment of time waiting for desirable positions; get to earning wages as soon as possible. Take the first job you can get, and keep your eyes open for better ones. Get the dollars to jingling in your pockets. They are good for the general health, and promotive of comfort and peace of mind.

* * *

I have always contended that it is best to keep the boys at home until full grown, if it can be done. If the farm is large enough, rent them some land and let them make some money for themselves. If this cannot be done, give them a chance to earn money working for the neighbors. A friend of mine has three boys, and he allows them to work among the neighbors whenever he can spare them. At the end of each of the past two years he has given a prize of ten dollars to the one who saved most of what he earned. When one of them bought needed clothing the cost was counted as savings. Once get the boys to earning and saving money—get them into the habit, and you have them made, even if they possess only the rudiments of a common education. They will make their way in the world. Of course every intelligent farmer will give his boys the best education he can afford, because the better they are educated, the better they are equipped for the battle of life. Give the boys, and girls, too, the best chance for themselves you possibly can. It pays.

Fred Grundy.

A ROAD MACHINE AT WORK

There is more interest now than ever before in improving the public highways, and with improved road machinery more is being accomplished than ever before

JUST WHAT IS GUARANTEED BY THE PURE-FOOD LABEL

It cannot fail to be of great interest and deep significance to the American food consumer in general—to the entire American people—to read the recent statement of the Secretary of Agriculture regarding the exact force of the number of the label affixed to food products by the national government inspectors. In reply to the many misleading statements in current advertisements, to the effect that the United States government guarantees the purity and honesty of food and drugs labeled under the law, the secretary says:

"The serial number and the statement that the food or drug is 'guaranteed under the food and drugs act, June 30, 1906,' does not mean that the United States government guarantees the purity of the article or guarantees that it is what the label says it is. On the contrary, the statement means that the manufacturer of the article guarantees it to be pure, free from adulteration and that he warrants every fact stated on the label to be true. It is the guarantee of the manufacturer, not the guarantee of the government.

"The department allows manufacturers to file a general guarantee, covering all their food or drug products. It then assigns a number to the guaranty and permits the manufacturer to print the number and the statement that the article is guaranteed on the label of each package. The government assumes no responsibility for this guaranty. On the contrary, as a glance at the law will show, the serial number is assigned to fix the responsibility where it belongs—upon the manufacturer—and to protect innocent dealers who have a right under the law to rely upon the guaranty.

"The law says in effect that no dealer shall be prosecuted for shipping adulterated or misbranded foods or drugs in interstate commerce, or for selling the same in the territories or in the District of Columbia, when he can establish a guarantee to the effect that the food or drug is not adulterated or misbranded. This guarantee must be signed by the person from whom the dealer purchases the article. The intention of the law is to put the burden upon the man who knows what is in the product, who is, of course, the man who makes it.

"Such advertising as 'After January 1, 1907, the United States government will protect you by an official serial number that you may easily recognize;' statements that a food product is 'approved by the pure food commissioners,' that another food product 'carries the government approval under the food and drugs act of June 30, 1906,' 'the United States government new pure-food law guarantees our product,' 'every bottle is guaranteed by the United States government,' 'the United States government guarantee serial number —— is your protection in using ——,' and other statements of a similar character must be stopped, and be stopped at once, or I will do a little advertising myself in behalf of the people.

"I am growing tired of seeing these untruthful statements on the advertising pages of the magazines, the walls of the New York subway and the advertising space of the street cars of the principal cities. I am thinking if this outrageous misrepresentation does not cease that the department will publish a list bearing the names of the manufacturers who are indulging in this campaign of deception. In this list the department will state that it has not analyzed the products represented by the advertisements, and hence has no actual knowledge of their purity or impurity, but that it advises the consuming public to judge the purity or impurity of the products according to the false representations made concerning the guaranty. In other words, manufacturers who will deceive the public about the guaranty will lie about the quality of their product.

"I want everybody to know that this pure-food law is going to be administered fairly. The primary purpose of the law is of course to protect the consumer; but no honest manufacturer need fear that the department will take snap judgment on him or harass him in any way. Everybody will have an opportunity to put his business within the law. The department is using every means to inform the manufacturers of the country just what the law requires. After this information has been supplied and everybody has had an opportunity to become familiar with the requirements any manufacturer who continues to violate the law must expect vigorous prosecution."

SCOURING THE EARTH FOR BENEFICIAL INSECTS

[continued from page 1]

Smithsonian Institute by Dr. H. Von Ibering, director of the museum at Sao Paulo, Brazil, and that as soon as it had been identified it had been returned to its South American home.

Then Compere took steamer for Brazil, and after diligent search found the insect in its native haunts in the neighborhood of Bahia.

It was in the shape of a large beetle; and by the way, there are two general classes of insect parasites—the internal and the predaceous.

The first lays its eggs within the soft tissue of the grub of the pest insect, and the young as they develop devour the substance of the grub for food, and thus put an end to the embryonic pest.

The predaceous parasite is one that in its grown-up and mature form pounces upon the opposing insect, whether the latter be in its developed stage or not, and devours it to satisfy its hunger.

Now the Brazilian parasite belonged to this last-described class, and was captured by Compere and placed in a tin case having quite a number of compartments, so that the colony could be divided and kept in squads.

Then he took them on board of a steamer bound for London, and with them a supply of grubs for food. But they were ravenous creatures, and Compere had to provide against emergencies.

In a certain quarter of the steamer he established his colony of beetles. In connection he had an ice box, a case containing a colony of blow flies, a case for meat that was to be exposed to the flies, and a fifth case for the keeping of maggots.

When his first supply of maggots was about exhausted he would take a piece of raw meat from his ice box, place it in the open meat case and let some of his blow flies get at it and lay their eggs; and these were fed to the beetles.

In this way he kept the creatures alive on the trip from Bahia to London; but when he arrived in the last-named city he found his supply of grubs getting low, and hiring a cab, he scoured the city for a fresh supply.

The beetles had eaten between one and two hundred grubs a day all the way over, and were just as ravenous as ever. Happily in London Compere ran onto a place making a business of supplying fishermen with bait, and here he bought two gallons of maggots.

This supply with those derived from his own grub hatchery lasted until he reached Port Said, where he found the fruit fly prevalent, and there he obtained an additional supply of the grubs of the insect.

The voyage from Bahia to Fremantle, West Australia, occupied forty-six days, but Compere landed his beetles alive and in good condition.

But here arose another difficulty. It seems that the importation of the beetles had not been rightly timed, and they arrived in the season when the fruit fly lies dormant, and therefore there was no natural food for the parasites.

The latter were put in cold storage with the hope that they could be kept in the dormant state until the fruit-fly season should open again, and they could feed upon their natural dict.

But in this the entomologists were disappointed; the beetles did not survive, and thus Compere was obliged to make a second journey to Brazil for another colony.

He was successful in this second attempt, and the beetles are now being bred in large numbers in their new home.

Compere had already made one tour to the Orient in search of this beetle before getting a trace of it at Washington, so the final accomplishment of his errand required three circuits of the earth.

But that is the kind of man Compere is; he never lets up on his grip.

H. A. Crafts.

BASIC SLAG

I have used basic slag as a fertilizer for fruit trees and bushes on medium heavy soils with good results. It seemed to contain just what was needed to make good growth and healthy foliage. I expect to use several tons of it this season.

Its sales I see have reached tremendous proportions in Europe. A friend recently arrived from England tells me that on tests in which he was interested, to determine its value as a fertilizer for grass, that its effect was remarkable on meadows in medium to heavy soils, the hay crop was very much taller, and thicker in the bottom, the evidence of the increase of the crop was seen at a distance of several hundred yards, and the effect of the fertilizer was especially noticeable on the stooling out of the grass, making far better pasture after mowing.

E. H. Burson.

EW

CYANIDE FOR FLIES

Last year I made the experiment of clearing my little greenhouse of plant lice by means of fumigating with hydrocyanic-acid gas. I could accomplish the object all right, yet I was not anxious to repeat the trial, and this mainly for the deadly poisonous character of the drug. It kills or may kill, if not on sight, at least on touch. If I did not have a better and safer remedy for green fly (or plant lice) in the greenhouse, I would probably continue to use it.

But this hydrocyanic-acid gas is now also suggested as a most effective remedy against various household pests, especially the common house fly. This suggestion comes from the entomologist of the national Department of Agriculture, and seems to be of much practical value. Flies are dangerous. They carry germs of all sorts of diseases, and therefore spread infection, sometimes where we least suspect it. I would rather run the risk connected with handling cyanide of potassium than that from typhoid fever or diphtheria germs carried upon my victuals on the feet of flies. Neither do we care to have a lot of mosquitoes in the house during the night. We usually keep our house closely screened all summer long, but even then some flies and an occasional mosquito will manage to get in. Professor Howard claims that not only the pests already named, but also cockroaches, bedbugs, fleas, clothes moths, white ants and other soft-bodied insects, as well as rats and mice, can be destroyed by such fumigation.

For each one hundred cubic feet of space one ounce of high-grade (ninety-eight per cent) cyanide of potassium and one fluid ounce of commercial sulphuric acid diluted with two fluid ounces of water may be used. There is no room for doubt that by the thorough use of the gas generated from these materials our houses can be rid of all insect life at a reasonable cost.

But every one who proposes to use the remedy should always bear in mind the terribly poisonous character of the drug and of the gas, and nobody should attempt to make use of this device without having obtained a full understanding of every point and detail of making and applying the gas. The simple act of making a dilution of sulphuric acid may involve dangers if it is not carried on properly. For instance, you may pour the sulphuric acid into a jar, and then pour the required quantity of water upon it, when there is sure to be a commotion, and possibly an explosion, and the corrosive mixture may be scattered about and you may get more or less burned. But pour the water in first, and the acid slowly into the water, and everything will be all right.

When you get ready to fumigate a house with hydrocyanic-acid gas, remove from the building every living being that you wish to keep alive, also milk, butter, and any open provisions that are not perfectly dry. After fumigation, don't enter any room again until after it has had a thorough airing. Full directions how to make and use the gas, however, may be had by applying to the Secretary of Agriculture, Washington, D. C., for a copy of the circular on the subject.

◈

THE BEST GENERAL POISON

Beset on all sides with voracious insects which are ready to devour our crops sometimes even before the plants are hardly out of the ground, we, on our part, must be ready to meet and defeat them. The poison or poisons must be procured now, to be on hand when needed. A few days' delay in the application, as in the case of the currant worm, may mean entire loss of foliage, and therefore of crop, or, as in the case of the cucumber beetle, the entire destruction of the plants.

What we want first of all in any of the poisons or contact remedies, and in fungicides as well, is efficiency, and, next to it, safety and convenience of application. The point of cost is of very little importance. I would rather pay two, three or even more times the price for a poison that gives me the full effect than for one that leaves a chance of further loss because it is not doing the work quite so perfectly.

For the currant worm nothing better has yet been found than white hellebore. In my experience it has never failed to give prompt relief on first application. For plant lice nicotine (as we now have learned to apply it) is yet unsurpassed. For general use against orchard, field and garden insects we now have three standard poisons—that is, Paris green, arsenite of soda (Kedzie formula), and arsenate of lead, the latter also known as disparene. Arsenite of soda can be prepared at least expense, and is largely used by many of our large orchardists, always in combination with Bordeaux mixture, as it is otherwise liable to burn the foliage. Paris green is the next in cheapness, and probably more largely used than any other arsenical poison. It is often used alone, either dry or in water, but in some cases or when used indiscreetly, quite liable to do injury to the leaves of tender vegetation. By far the better way is to use it in Bordeaux mixture, or at least in water, with a little lime added to prevent such injury.

Arsenate of lead probably is dearer than either of the other two. Too much importance is often attached to this minor fault. I prefer arsenate of lead to all other arsenical poisons, and am willing to pay the price. Whether the poison that I have to use on an acre of potatoes, or orchard, or melon vines, costs me twenty-five or fifty cents, makes very little difference to me when I know that the larger expenditure accomplishes my purposes with least possible trouble and injury.

There are advantages connected with the use of arsenate of lead which offset the one advantage of cheapness in arsenite of soda or in Paris green ten times over. First we can use arsenate of lead, in water alone or in Bordeaux, in such strength, without endangering the foliage, that we can kill insects, such as the rose chafer, and especially the cucumber beetle, which we find it impracticable or impossible to destroy by means of Paris green or similar arsenical preparations. I have had whole plantings of melon, cucumber and squash vines destroyed or damaged beyond hope of complete recovery, year after year, for many years. Then arsenate of lead appeared on the scene. I have used this freely every year since, and the vines thus protected have been freed from their beetle tormentors in short order. I have given strong doses and obtained prompt and perfect results. If the arsenate would cost ten times what I can get it for, I would use it just the same. I have not got to lie awake nights worrying over the damages from beetle attacks. A further advantage of this poison, and an offset to its higher cost, is found in its greater adhesiveness. It sticks like a brother, through sunshine and rain, and when you have once given a good coat to your plants it will last you for a while, so that fewer applications will be required than of the other standard arsenical poisons.

T. Greiner.

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THE VALUE OF SORGHUM

Few farmers have found out the true value of sorghum. Not only is it of value to the farmer for pure sirup for his family use, in place of buying imitation sirup, but it is profitable to grow for selling the sirup on the market at from forty to sixty cents a gallon, and have the seed to feed to poultry in winter. The seed is one of the best egg producers known and is valuable as a hog feed.

But if you are not situated so as to sell the sirup at a profit, or if you can't make it yourself and there is no molasses factory near you, don't fail to sow at least an acre for forage for the cattle. It is a boon to the dairyman, when the hot summer months come, to have this crop to feed to his cows. The hogs do well on the juicy stalks, also. If there is more than the cattle can eat green, it can be cut with a mowing machine or grain binder, and cured and stored away for winter use. Even the horses relish it in the winter time.

Any land that will produce corn will grow sorghum. It will do well even if the season is a hot, dry one. Break the ground in the spring, pulverize the soil well, and sow with the wheat drill, sowing one bushel of seed to the acre each way. This gives the weeds little room and a poor chance to grow. Sow the fifteenth to the last of May. You have nothing more to do with it until the last of July or in August.

Then you can begin to cut it for the cattle. Feed it to them sparingly at first until they are used to it. It may be fed twice a day in the pasture where they run, or taken to the barn and fed in the mangers at milking time.

The cane should be cut about four inches from the ground. After the first is cut off it often grows high enough for a second cutting or for winter feed. Never turn the cattle on sorghum as a pasture, as they are apt to eat more than is good for them.

If you would rather plant it in rows and cultivate, plow the ground and let it lie until the weed seed are sprouted. Then harrow and drag until the weeds are all destroyed, lay off the ground in shallow rows about three feet apart, and drill the cane seed with a corn drill, using a broom-corn plate, or use the drill as for planting corn, and then when it has made a good growth, cut out the small stalks for the cattle, until it is as thin on ground as wanted.

If the seed is drilled in rows, sorghum may be cultivated as corn until the stalks are three or four feet high.

If it is planted for sirup, it must be planted in rows and may be dropped in hills about eighteen to twenty-four inches apart, with six to eight grains in a hill. Or it may be drilled, so there will be one stalk about every six inches.

If wanted for sirup, strip off the blades and cut the stalks, then get them to the factory before Jack Frost makes his appearance, as they are not fit for molasses after they are frosted. If wanted for feed, the sorghum must be cut and stored, or at least cured well, before frost.

In cutting sorghum for hay, choose some warm, sunny day when the weather seems favorable for a few days. Cut, and let it lie on the ground about two or three days, then rake in windrows and let it finish curing. When it is perfectly dry mow away.

If it is cut with the grain binder, make small bundles, then place them in small shocks and let them stand until well cured before storing away for winter use.

Among the best varieties to grow are Imperial, Early Orange and Amber.

F. King.

◈

GROWING COW PEAS

Last year, about the middle of May, I sowed ten acres of cow peas on land that had previously been an old pasture. I plowed the land about seven inches deep, disked it until I had a good seed bed, then leveled it with a drag, and sowed one bushel of peas broadcast to the acre, harrowed them in thoroughly, and then rolled the ground.

From a part of this piece I sold six tons of hay at eight dollars a ton; from the balance I thrashed forty-six bushels of clean peas, and had about seven tons of straw.

Cattle are very fond of cow peas, and the experience of others as well as my own shows that the milk is much increased in quantity by feeding them. I do not believe any better feed can be had for sheep. Caution must be used not to overfeed where they are fed pods and all.

I find that they prepare the ground for fall seeding with timothy or clover better than any other crop. A neighbor told me that in ten years he had not failed to get a catch following cow peas.

The quantity of seed must be varied according to the quality of the land. On heavy, rich soil, drilled in, one half bushel to the acre is sufficient, while on light soil, sown broadcast, one and one fourth bushels are not too much. An average yield is ten bushels an acre, while as high as twenty bushels are sometimes secured.

They are remarkably free from enemies; the pea weevil is the only one that is worth mentioning. The beetle hatching out of the seed deposits eggs in the pod, where the larvæ burrow into the bean. Where the seed is seen to be affected the sowing had best be delayed until late.

W. H. Underwood.

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Better renew your subscription now, before the busy season comes. One dollar will pay you up seven whole years in advance, and fifty cents will pay for three years. You will be too busy this summer.

THE STONE CRUSHER IS AN EFFICIENT HELP IN THE CAUSE OF GOOD ROADS

THE WORLD'S SUGAR CONSUMPTION

THE Chamber of Commerce of Milan, Italy, has for years made a study of the statistics of sugar throughout the world—production and consumption—and has acquired a reputation for authority in this matter. Recently, according to our American consul at that point (Mr. J. E. Dunning), the chamber gave out these statistics:

"The number of pounds of sugar consumed per capita for the year between August 31, 1905, and September 1, 1906, is stated as follows in the Milan market: United States, 92.46; Great Britain, 77.83; Denmark, 71.21; Switzerland, 53.35; Sweden-Norway, 46.97; Germany, 43.40; Holland, 39.16; France, 36.17; Belgium, 33.04; Austria-Hungary, 23.87; Russia, 19.32; Portugal, 15.69; Spain, 10.27; Greece, 10.07; Turkey, 9.75; Bulgaria, 7.78; Roumania, 7.52; Italy, 7.45, and Servia, 6.75. Italy's low consumption is interesting from the fact that in this country sugar retails for about sixteen cents a pound. Considerable discussion is now on foot with reference to the high taxation on sugar, which 'instead of being, as in other countries, a common ingredient of the food of the people, is looked upon as a luxury to be used only on some grand fête day or in sickness.' Though the Brussels convention of 1903 established $1.20 as the difference which should exist between import duties on sugar and the tax on its manufacture in all sugar-exporting countries, Italy, which is not an exporter, so taxes sugar in both its manufacture and its importation as to create a difference of from $4 to $6, according to the quality of the stock. Every quintal (220 pounds) of sugar manufactured in Italy is taxed $13.40 on its fabrication. Sugar importations are taxed $19.10 per quintal for first-grade stock and $16.98 for second grade, the total tax on sugar amounting in Italy to about 340 per cent of its true value. Sugar imports into Italy from July 1, 1906, to February 28, 1907, amounted to 7,825 tons, an increase over the amount imported during the same period of 1905-6 of 1,261 tons."

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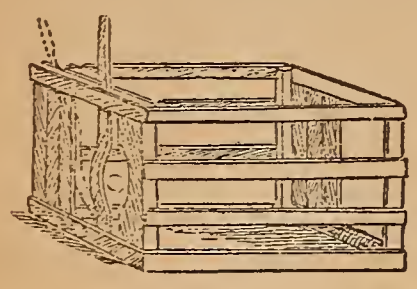
DEVICE FOR HANDLING PIGS

The accompanying sketch illustrates a handy device for catching and holding pigs when wanted for handling. The trap may be placed at the end of a chute or passageway, or by the side of a pen having a small door opening into it. As



the pig attempts to pass out at the opposite end of the trap a lever is brought up and the animal is held fast by the neck. The construction of the pig holder and the working of the lever are made plain in the sketch, and a correspondent states that he has found the contrivance exceedingly useful and convenient in many ways that arise connected with the handling of pigs.—The Leader.

◈

THE FALLING OFF OF MILK AT CREAMERIES

The trade and the creameries both are wondering what is causing the great decline in the amount of milk that is coming to the creameries. There are of course several causes. We will point out two or three. The selling of cows by the farmer for various reasons, among which are loss of farm help. A large force of hired men are quitting at this time of year, and the owner reduces the herd. Then, too, the milk-shipping districts are buying every cow they can get hold of and paying big prices. The high price of grain feed of all kinds; even the high price of butter will not tempt the farmer to feed what grain he should.

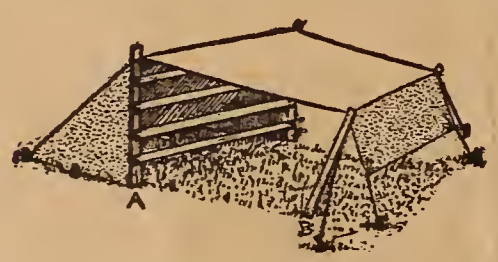
These facts are constantly getting in their work. The tendency to keep smaller herds of cows, just about what the farmer and his family can care for, on account of the high prices of farm labor, is becoming quite noticeable. If the farmer would improve the quality of his cows by introducing better dairy blood, and better feeding and stabling, he could in a few years produce as much milk from ten cows as he does now from four time as many, and one man could easily milk and care for them. Then, again, the higher prices of summer butter the last few years is causing many farmers to produce summer milk and not winter milk. All these causes are at work.—Hoard's Dairyman.

Review of the Farm Press

A PRACTICAL BROOD SHELTER

A simple and inexpensive brood shelter is made from some slats and unbleached muslin. Make a wicket three feet wide and high from lath and two pieces of scantling. Cut points at the bottom of the scantling so they can be easily driven in the ground. The lath should be nailed about four inches apart, and when the wicket is driven in the ground there should be at least four inches between the ground and bottom of lower slat, for the little chicks to run under. Obtain three yards of heavy unbleached muslin, and from one end cut two triangular pieces, to form the sides to the coop.

Drive the ends, A, down into the ground eight or ten inches, and three feet in front of them drive two more stakes, B, at an angle to support the



canopy. Nail a lath across at the top of these stakes, over which the muslin can be drawn. Thirty inches back of the wicket drive three or four stakes in the ground, and tie one end of the sheeting to them; draw it over the top of the wicket and lath at the top of the stakes, B, and down toward the ground, where the ends can be lashed fast with heavy cord and stakes, as shown. The side flaps to the coop can be sewed along the edge and lashed fast at the bottom to small stakes driven in the ground. Properly made shelters of this kind will last several seasons. They are cool and practically waterproof and much more healthful than modern coops. To move them, pull up stakes; redrive the wicket. It is but a matter of a few minutes to reset on new ground.—New England Homestead.

◈

A LAMB CREEP

The creep is simply a small room or portion of the floor penned away from the ewes, with small apertures, through which the lambs can pass, and not large enough to permit the ewes to follow. It may be made of slats like a picket fence, spacing them seven or eight inches apart, according to the size of the ewes. This creep should be placed in the spot most convenient of access in the barn, so it is really easier for the lambs to go in it than to stay outside. The reason for this is that lambs are such foolish things, and have such short memories, that unless their creep and the feed within it are readily accessible they will neglect to eat as often and as much as they should. In fact, the difference in the quality of the lambs coming from a well-placed creep and from one inconvenient of access is very marked, and might easily amount to many dollars in the course of the season. This creep should be so placed that the sun will enter it, for lambs revel in sunlight like young plants. In this creep should be some flat-bottomed troughs, high from the ground, with boards over them placed like an inverted "V," so that the lambs can neither stand upon them nor put their feet in them. This cover may be put up six inches, to enable them readily to thrust in their heads. In these troughs must be put a mixture of ground grain, and the lambs induced at the earliest possible moment to partake thereof. The writer has often practised the catching of the larger lambs when two or three weeks old, and carrying them to the troughs, handling them gently so as to awaken no alarm, and putting them down beside it, placing a little food in their mouths, when presently they will get the taste and begin eating of their own accord. After one or two have found the feed, the others will by imitation soon follow, until all will be eating as greedily as little pigs.—J. E. Wing in Practical Farmer.

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PRESIDENT ROOSEVELT ON THE VALUE OF TREE PLANTING

Although issued on the occasion of Arbor Day, the personal proclamation of the President "to the school children of the United States" (made public on April 14th), contains such a thought-provoking appeal for forest preservation that it is worth the consideration of all American children throughout the year. It follows:

"To the School Children of the United States:

"Arbor Day (which means simply 'tree day') is now observed in every state in our Union and mainly in the schools. At various times from January to December, but chiefly in the month of April, you give a day or part of a day to special exercises, and perhaps to actual tree planting, in recognition of the importance of trees to us as a nation, and of what they yield in adornment, comfort and useful products to the communities in which you live.

"It is well that you should celebrate your Arbor Day thoughtfully, for within your lifetime the nation's need of trees will become serious. We of an older generation can get along with what we have, though with growing hardship; but in your full manhood and womanhood you will want what Nature once so bountifully supplied and man so thoughtlessly destroyed; and because of that want you will reproach us not for what we have used, but for what we have wasted.

"For the nation, as for the man or woman and the boy or girl, the road to success is the right use of what we have and the improvement of present opportunity. If you neglect to prepare yourself now for the duties and responsibilities which will fall upon you later, if you do not learn the things which you will need to know when your school days are over, you will suffer the consequences. So any nation which in its youth lives only for the day, reaps without sowing and consumes without husbanding must expect the penalty of the prodigal whose labor could with difficulty find him the bare means of life.

"A people without children would face a hopeless future; a country without trees is almost as hopeless; forests which are so used that they cannot renew themselves will soon vanish, and with them all their benefits. A true forest is not merely a storehouse full of wood, but, as it were, a factory of wood, and at the same time a reservoir of water. When you help to preserve our forests or to plant new ones you are acting the part of good citizens. The value of forestry deserves therefore to be taught in the schools, which aim to make good citizens of you. If your Arbor Day exercises help you to realize what benefits each one of you receives from the forests and how by your assistance these benefits may continue they will serve a good end.

"Theodore Roosevelt."

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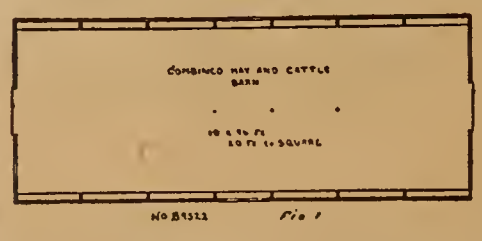
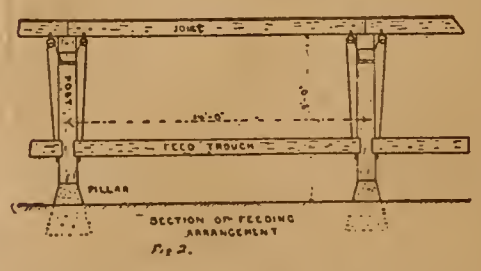
HAY BARN WITH CATTLE SHEDS

Such a barn may consist of a main structure, with sheds extended from the main structure at right angles; but such an arrangement necessitates a great



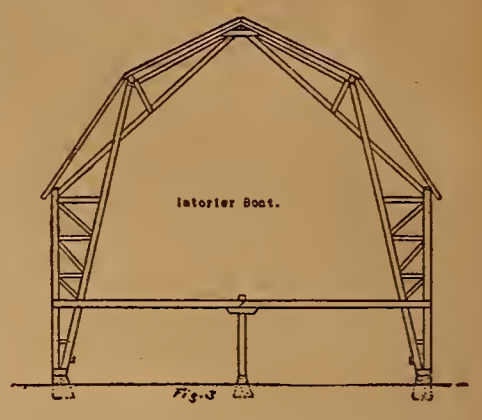
amount of roofing, and roofs are the most expensive features of buildings, not only because of the first cost, but because they must be renewed in the course of time.

We present the plans for a structure that we consider more practical, cheaper when the advantages are considered, and



more pleasing to the eye. Fig. 1 shows the ground plan, forty by ninety-six, with feed racks along each side, into which the hay drops through chutes from the loft above, thus avoiding any carrying of the hay. The loft above is devoted entirely to hay, which may be taken in by means of horse forks or slings through doors in each end near the ridge. A large door at each end of the stable permits of driving through with manure spreader or wagons for the purpose of hauling out the accumulations of manure.

Fig. 2 shows adjustable feed troughs, that may be arranged along the row of posts in the middle of the stable, in which grain may be fed, the troughs be-



ing later raised to the ceiling, out of the way of the cattle. If shock corn is fed, large feed racks for the purpose may be used instead.

Fig. 3 shows the interior construction of the framework, which may thus be

entirely constructed of two-inch plank at a saving of about one third of the timber over the old style of construction.

Figs. 4 and 5 show the end and side elevations of the completed building.

The height of the posts may depend somewhat on the system of feeding to be followed, but for appearance sake should not be less than twenty feet. A gable roof may be used instead of the curb roof if so desired.—Charles Ernest Shawver in the National Stockman and Farmer.

◈

RAPE AS FOOD FOR HOGS

To feed the crop to hogs, the most satisfactory plan is to use hurdles and give the hogs a small piece at a time. There is not much danger in giving the hogs all they will eat, but if allowed too wide a range they damage considerable. As a result of two seasons' trials Prof. John A. Craig found that an acre of rape was worth in hog feeding 2,600 pounds of a grain mixture consisting of two thirds corn and one third shorts. He determined this by having two lots of hogs under experiment each year; one lot running on the rape, and the other lot penned and getting exactly the same grain ration as those on the rape. Professor Craig controlled the feeding so that both lots made the same gain, and putting the extra grain which the pen lot required against the extra rape that the other lot received he found as the average of all of the trials that an acre of rape was equivalent to 2,600 pounds of the grain mixture. These experiments also clearly demonstrated that when hogs are allowed to run on rape they will keep stronger and thrifticr when pen fed later. In one trial twenty-eight hogs were selected, and when taken from the run of rape averaged 210 pounds apiece. At the end of a period of twelve weeks of pen feeding these hogs averaged 340 pounds, which was considered a remarkable gain, and, in addition, the hogs were all strong and active at the end of the feeding. The results of the several trials demonstrated that for pasturing hogs during the summer season, either to fatten them quickly or to prepare them for reaching heavier weights later on, the rape crop serves a good purpose.—The Wisconsin Agriculturist.

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We will be glad if you will get up a small club for Farm and Fireside. Have you many neighbors who do not take it? You will do them a kindness by sending us their subscriptions—and we will appreciate it, too.

Gardening

BY T. GREINER

HORSE RADISH FOR SUMMER

THE best way to treat horse radish for summer use, so that it will not lose its strength, is to grate it and put it up, with vinegar, in sealed cans or bottles. An Oklahoma reader asks the question.

EARLY SPRING ONIONS

The winter just past was a test winter. Certain plants in the garden suffered greatly, as did winter grain and clover, by winter killing. My Welsh onions, grown from home-grown seed, all survived, and now that the frost is out of the ground, begin to make a new and strong growth. But my White Portugal (Silver Skin) onions, for the first time in many years, are badly killed out. It is true, however, that for some reason they did not start well last fall, although sowed very early in August. The crop will practically be a failure. I think it was mostly due to lack of vitality in the seed. For next fall planting I have home-grown seed which I think will do better. Mr. Bishop, the expert gardener of Michigan, writes me that he prefers Vangirard onion—a French variety—to Silver Skin for this purpose. The Silver Skin, however, has always done remarkably well for me except this last season.

WORMLESS RADISHES

A North Benton, Ohio, reader asks me how to grow radishes "so they will not be worm-eaten nor go to seed, as his radishes do every year, while truckmen raise radishes almost the whole year round." I would gladly pay ten dollars myself for an infallible recipe. With good seed we have not much to fear from radish plants going to seed, unless they are prevented from making good healthy roots by worms or unfavorable soil conditions, or left too long. At times we raise a nice clean crop, often in four or five weeks' time from sowing the seed, while another planting will be one half or three quarters worm-eaten. A rich, new, warm sandy loam is especially serviceable for this crop, and if the location of the patch can be changed from time to time, or the radishes planted at some distance from any patch where cabbages, turnips, radishes and similar plants have been grown in previous seasons, the danger from maggot attack is greatly lessened, as the parent fly does not seem to travel great distances. The New Jersey Experiment Station, having made some tests and investigations concerning cabbage and onion maggots (the former being the one which infests the radishes), suggests the use of a quick-acting fertilizer, consisting of seven hundred pounds of nitrate of soda, one thousand pounds of acid phosphate, and three hundred pounds of muriate of potash, to be applied as a top dressing along the rows before they are planted, or just after they are up, at the rate of five hundred pounds to the acre. Similar applications can be made for the onion maggot. The same station recommends the carbolic-acid emulsion as perhaps the most effective of all destructive agents for any of these maggots. It is made as follows: Dissolve one pound of soap in one gallon of boiling water; to this add one pint of crude carbolic acid, and churn thoroughly with a pump until a good, creamy emulsion is obtained. This emulsion properly made will remain stable for several days. For use, dilute one part of the emulsion with thirty parts of water, and apply thoroughly around the plants. The application should be begun as soon as the presence of the maggots is noted, or, better still, as soon as the eggs are observed on the plants. Make the first two applications four or five days apart, and later once a week for a month (especially for cabbages). If the work is thoroughly done and begun early enough it should destroy the young maggots as they emerge and before they get a chance to protect themselves within the plant tissue. Well-grown maggots are quite resistant to the emulsion. For radishes and onions make the applications along the rows.

NEW CELERY CULTURE

I am asked by a Texas reader whether I now practise the "new celery culture." I do not, and this only because I have not now the right conditions for making it a success. Self-blanching varieties of celery, especially the White Plume, *can* be grown under a system of close planting, say six inches by ten in a block, if all the conditions are very favorable. The soil must be very rich and otherwise well suited for the crop, and there must be at no time a lack of all the moisture the crop needs, and diseases must be kept under control.

If you have land that you know will produce a thrifty growth of celery, and facilities for irrigation, you may plant a block of White Plume thus closely together; later on surround it with a board frame, so as to keep the outer plant rows erect, and live in hopes of getting celery that is fairly good, although perhaps not of the very highest quality. Under such circumstances we may be able to grow an immense amount of fairly marketable celery, for use in August and September, at a minimum of cost. But when the conditions are not thus favorable, then I would advise my friends to plant in single or double rows, with about two feet space between the rows (or double rows), and blanch the celery by means of boards in the usual way. Watering may even then be necessary for best results in a dry season.

BEAN WEEVIL

Bisulphide of carbon is still the sovereign remedy for bean and pea weevil, the little black "bug" that is so often found inside of beans and peas. The bean weevil is the more serious pest of the two, but both are easily killed in their early stages by exposure of the beans or peas to the fumes of the bisulphide in a tightly closed vessel. This has been told time and time again. While this is the safest remedy, and neither hurts the beans or peas for seed nor for culinary uses, the inconvenience of procuring and handling the bad-smelling and inflammable drug—and often its cost in small quantities—is something of a hindrance to its use. When only wanted for eating, the beans right after harvest may be exposed to moderate heat, say 150 to 180 degrees Fahrenheit, in an oven for an hour or two. This will also kill the "bugs." Never plant beans or peas with live weevils in them.

LIME FOR KALE AND SPINACH

A Maryland reader proposes to put about forty bushels of lime to the acre on a crop of kale and spinach, and asks whether such application is liable to harm these crops. This lime most likely is air-slaked, and in this, the carbonate form, mild and harmless in its effect, yet an application of a ton or two even of the hydrate (stone lime), at intervals of some years, is often found beneficial to the land. Lime in any form in reasonable quantities is not liable to hurt kale or any of the cabbage tribe which likes calcareous soils. In the case of spinach I would prefer to use nitrate of soda, with or without the lime, as this fertilizer usually has a very marked beneficial effect on the crop. The nitrate may be sown broadcast in early spring at the rate of say two hundred pounds to the acre.

SAWDUST IN THE GARDEN

An Ulster County, New York, reader asks how he could use sawdust for fertilizer in the garden to best advantage. There is not much fertilizing value in sawdust, to begin with, but it is good bedding material and will absorb much urine in the stables. In this way it can be converted into a good and fine garden manure, to be easily and evenly incorporated into the soil.

When I have sawdust (as sometimes happens) that is well rotted and dark colored, I use it freely as a mulch—for instance, over the asparagus rows, in the berry patch, etc. It is a good thing for blanching asparagus where we want "white" stalks. The rotted sawdust (all the better if mixed with horse droppings and thoroughly composted) may be banked up over the rows four or five inches high. The stalks readily push through it, and at the proper time may be easily snapped off or cut, as we can run the finger along the stalk way down to the soil, or to the place where we wish to separate it. Additions of rotted sawdust will also help to make hard and stiff soils loose and friable. We never let any material of this kind go to waste without an effort on our part to put it to some good use in the garden.

SILVER KING HARDY CELERY

What has become of it? Has anybody tried this "smellage?" Or has it been thrown for good upon the heap of discarded rubbish?

LATE CABBAGES

Danish Ballhead, now so generally grown as a late market variety, requires here nearly the whole season to get its full growth, and we sow seed already late in April and along in May. It is a rather coarse cabbage, and I want something finer and of better quality for the table. The old Flat Dutch type, such as the "Sureheads" are very good and reliable, and seed here may be sown as late as middle of June, especially if directly in the hills, with prospects of getting good heads. But if the time is short, and plants have not been started by the end of June, we can still grow late cabbages of good quality for the table by sowing seed of the old reliable Early Winningstadt, a pointed head somewhat resembling Early Jersey Wakefield, but larger and later and remarkably solid. For earliest I yet prefer Eureka, known also as Maule's First Early. Henderson's Summer is a good mid-season cabbage, and of good quality for home use. Seedsmen also offer a number of new sorts of late cabbages, and those who desire may try them on a small scale. I never plant a novelty very largely the first season.

ASPARAGUS AND GREEN ONIONS

Mr. O. G. Bishop, of Michigan, writes me: "I plant asparagus eighteen inches apart in the row, with rows four feet apart. I have hardly any market for white asparagus. I do not find one thousand pounds of bone meal to the acre at planting, and five hundred pounds yearly after that, too much. Sufficient potash is furnished in wood ashes, but I think few soils are lacking in potash. I have used the Welsh onion for seven years, and still use it. It is, however, a second early with me, and my own selection of Egyptian or winter onions are better in quality and sell much better. I also sow onions in the fall, but not White Portugal. I much prefer Vangirard. My bulb onions are bunched three in a bunch, and the long ones four or five. The price received is from twelve and one half to twenty-five cents a dozen in one hundred dozen bunch lots. The work of bunching is done by farmers' wives and daughters."

SMALL WORMS IN MELON SEEDS

A reader in Lebanon, Oregon, claims to have had some trouble with small worms, about one fourth of an inch in length, which enter and destroy melon seeds after they are planted. I have never seen any such worms in melon seeds that I planted, and therefore asked Professor Slingerland, who knows all bugdom, about them. He says: "I do not know of a small maggot working in melon seeds. It may be the work of the common root maggots, or it may be the grubs of the striped beetle. If we could get specimens it would enable us to give you more definite information."

Whenever we find an injurious insect that is new to us, the very best thing we can do is to gather a few specimens, put them in a little box or vial, and send at once to the experiment station of our own state for information or investigation. The stations like to have us do this, and they are only too glad to help us out if they can. That is what the stations are for and why they are supported out of the public treasury.

TOMATO BLIGHT

Blight infection is carried on old vines and in the ground. Planting on land not used for this crop for some years before is a wise precaution, but not always a sure protection. Often the plants are attacked by blight in the seed bed, or the spores may find their way to a new piece of ground by other means. I usually spray my tomato and egg plants already in the greenhouse and cold frames, so as to prevent any possibility of blight attacks. I have a small sprayer for this very purpose. Then in the field, one or more early applications of Bordeaux mixture are made with the knapsack sprayer. We have not yet suffered serious losses from this blight.

EARLY LETTUCES

Holzschuh's Success, one of the leading varieties from Germany, was by far the thriftiest and largest of all the early lettuces I had in my patch last year. It somewhat resembles May King, which is a lettuce of the Tennisball class, and not very much different from perfection Salamander. I start these lettuces under glass early in March, transplant once, one and one fourth to one and one half inches apart, in flats, and set in open ground as soon as the soil conditions will permit. Almost every plant will make a large solid head, and they find ready sale, often at fifty to sixty cents a dozen for the earliest. I have Doctor Galloway's (Department of Agriculture) promise of some seed of the new "sturdy winter lettuce," a cross between Grand Rapids and Golden Queen, which is particularly resistant to disease; but thus far the seed has not been forthcoming. This is intended to be a hothouse lettuce.

Fruit Growing

BY SAMUEL B. GREEN

SOME COMMON INJURIES TO TREES

THROUGHOUT the life of a tree it is exposed to injuries of various kinds. Among the most common of these injuries might be mentioned those referred to here.

SUN SCALD

is a frequent cause of injury to smooth-bark trees. It affects apple, basswood, mountain ash, maple, and under some conditions often the red oaks. It will be found upon the southwest side of the tree, and as a result of the injury the bark peels off and an unsightly wound remains. This is caused by the warm sun shining on the trunk of the tree, and starting the sap into activity, after which it is frozen and ferments. The reason why it is found on the southwest side of the tree is that the sun shines directly on this portion at about half-past one in the afternoon, which is the time when it is warmest. This may be prevented by anything that will produce a shade for the trunk, even a very slight protection being sufficient. Trees that incline to the northeast, so that the sun's rays strike vertically on the trunk, are easily injured in this way. On this account such trees should have their bark protected in winter. For this purpose the trunk of the tree may be wrapped with a piece of burlap, or even with strong express paper; but where only a few trees are grown, the best plan is to put about the trunk a box made of two boards six inches wide and two eight inches wide. This should come up as far as the lowest limbs, and should be filled with earth.

GIRDLING BY MICE

A common source of injury to many kinds of trees is the field mice, which are active during our winters searching for their food under the snow. These little rodents gnaw the bark off trees, and frequently do serious injury. Where injuries of this kind occur, or similar injuries of any kind, the best treatment is to cover the wounded part with earth by banking up the soil about the tree. If the wound is too high to permit of this, then it is a good plan to cover it with grafting wax. If the trunk of the tree is boxed up, as suggested for a remedy for sun scald, it will also serve as a preventive for injuries from mice, and to some extent from injuries from rabbits.

WIRES

Wire labels are frequently left on the trees when they are planted, in which case, if neglected, they frequently girdle the tree. There are a number of insects that eat the leaves of apple trees, but these are seldom very troublesome. Where they are abundant, the best remedy is to spray the foliage with Paris green and water, at the rate of one heaping teaspoonful to an ordinary pailful of water. Where but few of these insects are present, the best remedy is picking by hand.

It frequently happens that the thrifty, rapid-growing tips of the young branches are infested with leaf lice the first year. The best remedy in this case is to dip the ends of the twigs into tobacco water; gather them together in the hand, and hold them in the water long enough to get them thoroughly moistened. Tobacco water is made by pouring scalding water on the tobacco stems and making a decoction about the color of strong tea. This remedy is not liable to injure the trees, even if made very strong, but it should be made fresh every time it is used.

BORERS

The trunks of our fruit trees are subject to the attacks of borers of various kinds. They may be noted by frass protruding out of their holes if they are still working, or by the empty hole if they have left. The best way of getting rid of them is by looking over the trees in the spring and again in August, and digging them out.

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HONEY LOCUST FOR POST TIMBER

C. J. F., White Rock, Minnesota—In regard to honey locust, I do not think it is a tree that you should plant many of, as it is of rather slow growth, but is quite pretty in habit and I like it for a lawn tree. It is durable timber in the soil, but somewhat tender and liable to kill back in exposed situations. It does not sprout from the roots. It is the yellow or black locust that sprouts from the roots. It is also this latter form that is the quickest growing, and on this account most desirable for planting for fence posts. The nursery agent certainly told you an untruth when he said they would make four-inch posts in two years, and I doubt very much if he knew himself what he was talking about. None of these trees should be planted in sod for best results, but only on land that has been cultivated for several years. I really think the yellow locust is one of the most desirable trees for planting in the south half of Minnesota and South Dakota for fence posts. It does sprout from the roots, but this is not a serious objection where the trees are grown in forest plantations.

Tartarian maple is a little shrubby maple that comes to us from Asia. It is of no special value except as a shrub or small tree, for which purpose it is quite desirable.

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SUBSTITUTE FOR CONCORD GRAPE

E. M. D., Woodland, Washington—They have the same trouble with the Concord grapes in Minnesota that you do at Woodland, and they prefer to grow the Moore's Early and Worden, both of which are earlier than the Concord. The former is most in favor. Either of these kinds will sell for the Concord.

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THE MINER PLUM

J. E., Baraboo, Wisconsin—The Miner plum is generally a disappointment in the Northern states. At the Minnesota Experiment Station several Miner plums have been grown for twenty years in a nursery with a large number of other kinds of plums, which flower in their season, yet the Miner has been almost barren of fruit. Occasionally it seems to be fairly productive, but as a rule it is uncertain, and the experience at the Minnesota Experiment Station is no exception. We do not know the reason, but think it cannot be overcome, and would recommend you to either graft the trees you now have with some better kinds or replant them.

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VINEGAR OFF COLOR

E. H. A., Townville, Pennsylvania—I do not know why it is that your vinegar changes to a greenish color on being exposed to the light, but undoubtedly it is due to some oxidation that takes place. There are a large number of ferments that enter into the formation of vinegar, and the chemical processes involved in its manufacture are complicated. On this account I cannot prescribe a remedy, and if the vinegar is a good quality, I would suggest that no effort be made to change its color. It is possible that if exposed to the light a little longer you will find that it again regains its normal color.

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WINDBREAK FOR ARID SECTIONS

D. F. O., Wasco, Oregon—I know something of the difficulties in getting windbreaks started in the semi-arid regions of this country. I think probably the best tree for you to use is your native long-leaf cottonwood or the white willow. In order to grow these successfully the land should be thoroughly prepared and the cuttings should receive careful attention throughout the whole growing season, so that the soil may be kept thoroughly cultivated and the moisture of the ground preserved. After the trees are once thoroughly established it will not be necessary to so carefully attend to this matter. If you are fixed so as to give the windbreak a little water occasionally, it would be of greatest assistance.

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UNKNOWN MOTH

C. B. B., San Antonio, Texas—The peculiar and interesting moth with black wings with yellow lines which you sent, and which you state is so abundant about your plum trees, which are now in flower, is probably attracted to the trees by the nectar to be found there, but it is not injurious to the fruit. Its larvæ live in the roots of grasses. It is known as "veined moth."

The insect that causes your plums to be wormy is what is known as the plum curculio. This is a snout beetle of brownish color and about one fourth of an inch long. It cuts holes in the fruit, in each of which it lays an egg. These eggs develop into a light-colored worm, which works around the pit. Fruit thus infected prematurely ripens and falls to the ground. The best way of preventing injuries from this destructive pest is by destroying the fallen fruit, which is most easily done by pasturing hogs in the orchard and by clean cultivation and the burning of rubbish about the orchards each year, to destroy the beetles that hibernate in such places.

There is no satisfactory method of spraying now known that I regard as sufficiently safe to warrant me in recommending it to you. It has, however, been occasionally recommended to spray the plums with Bordeaux mixture containing a small amount of Paris green for the destruction of this pest, and some experiments seem to show that it may be successfully applied, but it may burn the foliage.

Trees in flower should never be sprayed with poisons, as in this way trees are liable to be killed. Spraying just before or afterward will accomplish as much as can be done by spraying when trees are in flower. For the codling moth it is best to spray soon after the flowers fall and before the apples turn downward.

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GIRDLED APPLE TREES

F. L. L., Cannon Falls, Minnesota—In regard to your girdled apple trees: If there is still some of the inner bark left, so as to make a connection, even if quite small, between the top and the roots, then the best treatment for your trees is to cover the wounds with grafting wax and bank up with earth. If treated in this way the chances are that the healing-over process will go on very rapidly and the trees will recover. If the girdle is so bad that there is no connection, then I would suggest that scions be cut long enough to reach over the girdle, and that they be sprung into the bark on each side. Scions put in in this way are very sure to grow, and they make a connection between the top and roots that is generally sufficient to save the trees. After the scions are put in the wounds should all be covered with grafting wax, and if near the surface of the ground cover with earth.

◈

BEST TREE FOR QUICK-GROWING WINDBREAK

C. C. B., Eckhart, Maryland—I am rather inclined to favor white willow as the best quick-growing windbreak that I know of. I would recommend setting it out about two feet apart, in rows eight feet apart, using cuttings at least ten inches long, and putting them slantingwise in the ground and leaving only about one inch sticking out. I should not want them nearer than fifty feet from the house, and if in a very exposed place, where the snow will drift a good deal, would rather have them seventy-five feet away.

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NEWS NOTES

The American Pomological Society will meet at the Jamestown Exposition, September 26, 1907.

The value of the annual crop of cranberries in the state of Massachusetts ranges from one to one and one half million dollars.

The bee keepers in the vicinity of Battle Creek, Michigan, have petitioned the state legislature to pass a law prohibiting the spraying of fruit trees while in bloom.

Recent investigations in the United States Department of Agriculture show very conclusively that fruits and nuts should not be looked on simply as food accessories, but should be considered a fairly economical source of nutrition. *

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There is no risk in sending money to FARM AND FIRESIDE for paid-in-advance subscriptions. FARM AND FIRESIDE has been prosperous for thirty years, and today its circulation is larger than it has been at any time in the past. Thirty years of honesty, integrity and prosperity is a record that we are proud of and that you may trust.

Poultry Raising

BY P. H. JACOBS

BROILERS IN APRIL AND MAY

In Eastern markets there is a great demand for broilers that weigh about one and one half pounds each, and April and May are the months during which the best prices are paid for such chicks. This is also an excellent period of the year for shipping, as there is less liability of cold and exposure as compared with previous months. Just at the time asparagus is in the market is when prices are highest, and the demand will be large for chicks until June, when ducklings then bring good prices. After that period large chicks will have to compete with adult birds. Some attention must be given to shipments of stock. Chicks that reach the market in good healthy condition sell more readily than those that have been exposed on the trip. A coop made of a board frame, and covered on the sides and top with muslin, will not only be lighter, but will prove more serviceable. Dressed chicks should be packed in boxes, using clean straw. The bodies should not be too closely packed, or they will decompose. The object should be to keep the carcasses as cool as possible, for which purpose ice is used by some. The prices vary daily, and fluctuate frequently. Sometimes, when the supply is limited, the chicks sell for fifty cents a pound. In the Western markets the best prices are in May. During severely cold periods chicks should be killed, as they cannot endure long trips and exposure when shipped alive. Quality is very important. It will not pay to send inferior chicks to market, as they will not bring satisfactory prices. Send only the best, and get the second-quality chicks in better condition by special feeding. Get rid of the young cockerels as soon as they can be marketed, as they will not bring high prices if their combs make growth, buyers fearing that they are of advanced age; but pullets sell readily, and at all ages.

NEXT YEAR'S PULLETS

It is an old saying that next year's pullets are what you make them, which means that the pullets intended for layers should be hatched as early as can be done in the spring, from eggs laid by selected hens, and they should be kept growing from the start. It is probably the best plan not to hatch pullets after May, unless of the small breeds, as the pullets from large breeds are not allowed sufficient time for growth if hatched late; but in many cases the large breeds have produced pullets that began laying when about six months old. Some families of Leghorns have produced pullets that began laying when four months old, but it is undesirable to have them begin so early. The best winter layers are pullets that have had time to complete their growth. When they start in for work they usually keep on until the spring opens, under good management, and then they hatch broods and are ready for another period of laying. Do not overlook the most important matter connected with producing next year's pullets, which is to hatch them from eggs of selected hens noted as being above the average as layers.

AN OBJECT LESSON

Observation will teach that as soon as the weather gets warm the hens commence to lay, and should a few cold days intervene the effect may be noticed, as there will probably be a falling off in the number of eggs, which demonstrates that warmth is a factor in the production of eggs. It is when the hens escape the extreme cold of winter that they start to lay. If the changes of weather make a difference in laying, then a warm poultry house should also have an influence in winter, for when the conditions are favorable the hens lay because they must naturally do so.

EGGS FOR INCUBATORS

The problem with the operators of incubators is to secure eggs early in the season; that is, eggs from good stock, consisting of matured fowls, and which are vigorous and in first-class condition. The loss of time and eggs through poor hatches is a serious drawback, and it is this loss that is severely felt by the operators; but there is compensation for the loss in the prices obtained, for if broilers were as easily produced in winter as in summer it would lead to filling the markets with a large supply, and larger numbers would be required to afford a profit, which would, in one respect, be an advantage to consumers, who would then be enabled to secure the broilers in the place of meats that are now less expensive. All difficulties must be considered as being necessary expenses to be met, and the object should be to lessen the difficulties as much as possible, and increase the profits to a maximum sum. It is sometimes easier to rear chicks in the winter, however, than in the summer, provided attention is given them, for the reason that the farmer is too busy in summer with other work, and his chicks are lost from many causes; but the labor in winter will cost less, because he is unable to apply it in a more profitable direction. If full supplies of eggs suitable for hatching could be obtained in winter there would be a lessening of expenses that could not fail to largely increase the profits. For an operator to produce one hundred dozen eggs he must visit several farmers, and their flocks may consist of immature pullets, roupy hens, fowls that were frosted on the combs and wattles, or of individuals having some other drawback, with uncomfortable quarters, the eggs being exposed to severe cold. Uniform eggs, from fowls in the best condition, will bring good prices for purposes of incubation during the artificial incubator season.

THE DUST BATH

The dust bath may apparently be a matter of little importance, though in fact it has happened that success or failure depended upon this necessary adjunct to poultry keeping. No flock will thrive unless dust is supplied, and strange as it may seem, dust is a scarce article in some poultry establishments, as many poultrymen do not consider it worth their while to provide it. Without the dust bath lice will overrun the bodies of the fowls. Whatever the material used for the dust box may be, it should always be dry and fine, so that it will fly in every direction. When the hen dusts herself it is not for the enjoyment of wallowing in it, but to throw the dust over her body; hence, if the material used is not dry and fine, it will be of little service to the hens. Ashes are often used; but there is a difference between those produced from wood and those from coal. They should be carefully sifted, and either kind may be used in dry weather. Should a wet spell come on, however, the wood ashes should be avoided, as the contact with moisture renders them injurious to the skin, owing to their caustic alkaline properties. It is usual, on large poultry farms, to store road dust in summer, so as to have a supply in winter, as road dust is one of the best materials to be found for the purpose; but any kind of fine dirt will answer if it is dry.

LICE AND REMEDIES

So often has the attention of readers been called to the necessity of preventing the attacks of lice that to again admonish them appears but a repetition, yet it is one of the most important matters connected with the keeping of poultry, as success or failure largely depends upon the freedom of the fowls from the attacks of lice and disease. In the summer the nests make excellent lice harbors, and they come in swarms whenever a filthy place affords a harbor for them, that place being usually the nest box. See that the boxes are kept clean, and filled very often with new material, whatever it may be. There are lice that overrun the quarters and are noticeable, but there are lice which prey upon the bodies of the fowls, especially upon the skin of the head and neck, and under the wings. They are not confined to a single variety, as the feathers are also destroyed. When the fowls are attacked by these parasites great prostration is the result, bowel disease sometimes occurring. When the birds show by their action that something is wrong, look on the sides of the head and neck, close down to the roots of the feathers, and the lice will be found. A mixture of a tablespoonful of crude petroleum, a gill of warm lard, with twenty drops of carbolic acid, will kill them instantly. Rub a few drops in among the feathers of the head and neck. Put very little grease on the naked bodies under the wings—a drop will answer. A little of the mixture along the feathers of the back should prove beneficial. Repeat the application as often as may be necessary to rid the fowls of the vermin. The advertised lice killers are also efficacious. To destroy lice in the poultry house use kerosene, adding a gill of crude carbolic acid to one gallon of kerosene, and paint or spray every portion of the quarters.

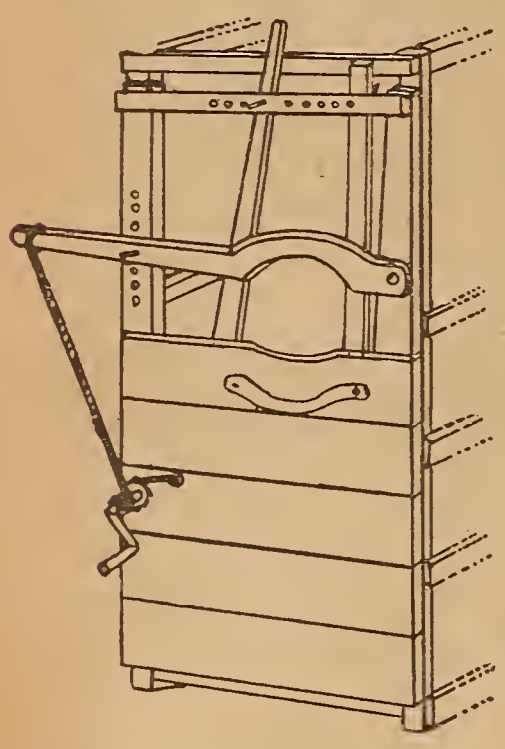
Live Stock and Dairy

CATTLE-DEHORNING CRATE

THE advantages of dehorning cattle have become so generally recognized that there is obviously no reason for an argument here in its support. The method, means and conveniences to facilitate the operation, however, are of considerable consequence, aside from the fact that the lack of such facilities frequently results in serious injury to the animal, and sometimes in death. In this connection I remember a large Shorthorn bull that we lost about eight years ago in the process of an abortive effort to dehorn him by main strength, block and tackle and several other unsuitable and awkward contrivances, together with the assistance of fourteen men and a horse, a barn beam, a twelve-by-twelve post and coils of rope. The main difficulty was our inability to hold his head secure and rigid; the strain, the worry, the exhaustion, the loss of blood, the—end in hide, tallow and scrap meat.

In lieu of a suitable stanchion built rigid and especially strong for the purpose to use in connection with shear dehorners I find it preferable to throw the animal and use the saw, although this is safe practically only with ordinary-sized animals. To throw animal, make a loop in center of heavy rope large enough to slip over animal's head and back to the shoulders. Pass each end of this rope back between animal's legs, then around the hock and to the front again, where it is passed through loop on outside, and from there pulled from rear by man on each side until hind legs are pulled forward and from under, so that the animal is laid on the ground or floor without shock. The front feet are then fastened to the hind legs, or "hog-tied."

When secured, lay a plank two by eight or two by ten inches and ten to fourteen



feet long across animal's neck, roping to rings in floor or weighting heavily enough only to hold the animal's head firmly to the ground. The clipper or shear dehorner may now be used, although I prefer the saw, because with it a cleaner, neater job may be done, there being no danger of crushing the horn near the head, less chance for the all too common ragged edges and stumps and a minimum of possibilities for after-complications, that frequently result from the use of the shear dehorner.

However, this method is only to be recommended for use with feeding or beef cattle. Observation has proved it to be a disastrous policy to dehorn the milch cow of the dairy in this way. Even when it is possible to adjust the time for the work so that it may come at the most opportune time in the period of the cow's lactation or gestation, the operation of throwing and tying alone will occasion a severe nervous shock that will be found to a greater or less degree detrimental, not only for the immediate time, but for her future performance. When such an operation is performed at certain stages of gestation it quite often results in a fatality.

Since the unfortunate experience referred to I have dehorned hundreds of cattle, young and old, beef and dairy, without losing an animal or having serious after-results, and I find that, aside from having the animal in as near perfect physical condition as possible, the main object is to provide some means that will hold the animal's head absolutely firm and rigid, and to avoid all unnecessary worry, excitement and rough handling in securing for the operation. To accomplish this I use a chute similar to the one shown in the accompanying drawing, patterned after one I saw in use at an experiment station in the South, except that our main leverage is horizontal, bearing down on the neck instead of, as with that one, a vertical lever pressing against the side of the neck from either direction; using but one, and that mostly for the purpose of forcing the head to the proper position under the hollow of horizontal bar, and the nose through the loop of heavy trace leather shown immediately under and in front of crate. To enable the operator to readily bring the animal's neck down to the desired position a small "windlass," consisting of an iron rod through front post, with crank handle and ratchet wheel, wound with light rope to slip over end of lever handle when it has been brought part way down, is used to force the head firmly down to place, when it is secured by an iron pin in one of the numerous holes bored close together in the post for that purpose.

The crate is built just wide enough to accommodate the carcass of the animal, without leeway that would permit the animal floundering about. The forward end post especially must be heavy enough to withstand the strain that may be put upon it by the strongest animal, and for these uprights it is well to use hardwood sticks six by six inches, and not less than four by four inches, with four-by-six-inch crosspieces framed in at top and bottom.

About half way up the boarded part of front a two-by-four-inch crossbar is framed into posts to hold the vertical or stanchion lever. Another such piece is set in through which to run bolts holding the heavy nose loop, the ends of which should be covered with strap iron or large washers, to prevent tearing out. A two-by-four-inch crosspiece is bolted across at top on outside, blocked out two inches, to permit free working of the stanchion lever, for which it acts as guide, with holes through which to slip an iron pin to hold bar in place.

The horizontal lever is cut out of a four-by-eight-inch piece, with deep curve cut in to fit over neck. The outer edge should be ironed with heavy piece of wagon tire, to prevent splitting, and the inner or under side covered with several thicknesses of sacking or pieces of carpet, to prevent bruising the animal's neck.

The crate should be only long enough to hold the body of the animal, having a stout door to close upon it. The floor should be of plank and the side rails of two-by-four-inch scantling run on inside, except at front, and fastened to two-by-six uprights tied securely by same size crosspieces at top and bottom. We have our chute mounted on three-by-eight-inch iron-shod runners, so that it may be readily moved from place to place around the buildings, although it is loaded on a wagon when loaned, as it often is to the neighbors, for whom it has done service for miles around.

To use, the levers are thrown to one side and up, the animal led in, the door closed and the stanchion lever pressed against neck as far as possible, when the horizontal lever is brought down and the animal's nose guided into the loop in front. In this way the head is held practically immovable, so that there is little danger from a miscut or the breaking of knives by twisting about.

Excessive bleeding, which frequently follows dehorning, may be stopped by filling the new-made horn cavity with oakum well saturated with chloro-naptholeum, or, what is better, Pearson's creolin. Should this fail, however, make a liberal sprinkling of chloride of lime into the cavity, and then fill with oakum, being very careful in the use of either remedy not to get any of the liquid or powder into the animal's eyes, as the sight may be destroyed, especially by use of the latter.

The writer believes that as dehorning comes more and more to be recognized as a necessity in the profitable handling of both beef and dairy breeds, less of this kind of dehorning will be practised, and that the greater per cent of it will be done at the time the calf is from two to four days old, when the horns may be destroyed by the application of a stick of caustic potash, clipping away the hair and rubbing with the moistened end of the stick until skin is made raw, which will destroy the embryo when the work is carefully done. R. M. WINANS.

THE THREE G'S ESSENTIAL IN THE MAKING OF A STOCKMAN

The three G's, or Grace, Grit and Gumption, are necessary in the making of a successful stockman. By grace we mean mercy or kindness. "A merciful man will be merciful to his beast" is a trite saying, but nevertheless true. It might also be said: "An unkind man will almost invariably be unkind to his beast." A cruel man will never be a successful stockman, because in his fits of temper he will beat, kick or cuff his stock about, either injuring them or causing them such excitement they will do no good. Besides, if he has no kindly feeling toward his stock, he will not care whether they are properly fed and sheltered or not. This of course will result disastrously to his stock, and consequently to his pocketbook.

Grit, or stick-to-it-ive-ness, is also essential to the development of a good stockman. There is a certain routine of duties in raising or fattening stock which will often grow irksome, so he needs a persevering spirit that will keep him eternally at it. Feeding and watering and salting and sheltering and breeding and changing from pasture to pasture must each be looked after at its regular time. Of course these things are bound to become monotonous, yet in this monotony there is profit if a fellow's grit holds out. Then there are the discouragements to meet. Sometimes the best cow will die, the finest horse will be injured on the wire, the most valuable sow will lose her pigs, the thoroughbred lambs will chill to death, and the fattest steer in the feed pen will take the lump jaw and dwindle in flesh and become worthless. These things will lose him money, but he must have the grit to go ahead just like nothing unusual had happened and everything was prosperous. Only the unconquerable man can hope to win out in the end.

Gumption, or common sense, also plays an important part in the making of a successful stockman. If a man does not exercise "horse sense" or good judgment he is sure to fail as a stockman. He must understand his farm and know the kind of stock adapted to it. He must learn the best plans for storing his crops and feeding them out. He must exercise good judgment in handling his stock; studying how to feed his stock to fatten, to winter or for growing purposes. His good sense must direct him in caring for his stock in the winter and summer so as to get the most money out of them. Then, too, he must have gumption enough to wisely guide him in what he keeps and where he keeps it, in what he sells and to whom he sells it, in what he buys and from whom he buys it. In short, he must know how to work his head as well as his muscles in properly managing the stock business. W. D. NEALE.

DOCKING AND CASTRATING LAMBS

These are two items to which the flockmaster will give careful attention, but which are very frequently overlooked by those who have but a few sheep. We desire, therefore, to "jog" the memory of our readers who are interested, with reference to these two questions.

The docking ought to be done within the first few days of the life of the lamb, and the castrating within the first few weeks.

Both operations should receive careful attention within the period indicated, unless the lambs are to be sold in the early part of the season.

As soon as a young lamb has become so strong that its hold upon life is assured the tail should be cut off about 1¼ or 1½ inches below the root. It ought to be cut with a chisel, and when so cut this may be done by placing its butt on a block of wood. The person who holds it, places its back against his breast, gathers the legs in one hand and with the other pulls the skin of the tail toward the body. A second person cuts off the tail with a sharp chisel struck by a mallet.

The skin then assumes its natural position and closes down over the end of the tail, thus making a neat healing over the wound. Young lambs seldom bleed to death when the tail is severed, but they should be watched, and if the blood is not stayed, a hot iron should be applied to the wound.

If lambs are castrated when young, there is no better way to do this than to have the operator cut off the lower portion of the sack containing the testicles, squeezing them out with thumb and finger, and pulling them out one at a time with nippers. The lamb should be held as when the tail is being cut, but in castrating, the person holding it stands. —L. R. Cooch in the Practical Farmer.

We want more subscribers like the kind we have now, the best in the world.

Live Stock and Dairy

RAPE AS A FOOD FOR FARM STOCK

To most farmers the feeding qualities of rape should be well known and recognized, and yet there is not a doubt but that more ought to be grown. I would advise all who have stock to feed to sow a fair portion of their land with this valuable feeding stuff. A few hints as to how it should be fed to farm animals may be useful.

In feeding rape to sheep it is a practise generally adopted to supply in a feeding box or trough a quantity of dry chaff, which the sheep will eat with the rape, and this will help to prevent any bad effects from the succulent food. In turning sheep onto a rape crop they should not be allowed to roam over a large area at one time. It is a good plan to have a number of small enclosures, so that as soon as the crop on one is eaten down the sheep can be removed to another, and the one left be given a chance to recover. After a few weeks' rest the first enclosure will be grown up sufficiently for the sheep to be turned in again. Whereas, if the sheep are allowed to wander over a large area, they will destroy as much as they eat, and the plants will not do so well if the hearts are continually being nibbled at.

To obtain the best results from the plants, the sheep should be removed when the plants have been eaten down to within two inches of the ground. A very good way to carry this out is to have a portable fence made which can be shifted as required. By this means the sheep can be given just as much of the crop as they can profitably consume, and the eaten crop left to make a fresh growth. Under these conditions the crop can be fed off three times during an ordinary season.

An acre of well-grown rape will carry thirty sheep for a month when kept in as proposed above, and convert them from show condition into a fat state. This method of growing rape and feeding off by sheep is a splendid one for improving the ground. The rape plant, being deep rooted, obtains a large proportion of its food from the subsoil. The plant is consumed by the sheep and the bulk of its contents returned to the surface soil by the medium of the droppings of the sheep, and the crop following the rape is generally a very heavy one—in fact, there is no better way of improving the soil. As well as the manure from the sheep, the roots and all the residue of the plants are restored to the soil.

Rape also makes an excellent feed for pigs. They can be turned in to graze on the rape the same as sheep, and young pigs can be fed on a crop of rape and kept in good condition until they are large enough to bring in and top up for market. When it is not convenient to turn the pigs on the crop—and it is not advisable to do so where sheep are likely to be on the same crop—a quantity can be cut and carted to the pigs every day. Pigs can be kept in good show condition and in good order for stud purposes on rape alone.

Rape in conjunction with other fodder is largely used for dairy cattle, but is particularly valuable for mixing with other food to make silage. When mixed with vetches, oats and rye it makes a highly nutritious and valuable silage. When fed to dairy cows in a green state it should be allowed to remain in the field for twenty-four hours after cutting, so as to allow it to wilt. When this is done it is not likely to taint the milk, as when it is fed in a fresh condition. It should always be fed to cows immediately after milking—not before the cow is milked.

Cattle should never be turned onto a crop of rape or allowed to consume large quantities of the plant unless the leaves have been well wilted in the sun, as it soon causes "hoven" or "blown," caused by the accumulation of gases in the stomach, and if not treated in time this soon causes the death of the animal.

Apart from the value of the leaves of the plant for purposes of feeding stock, the seed is a very valuable product, and in some parts of Europe the plant is largely grown for the seed alone. The seed when ripe is collected and pressed—the oil obtained being known as colza oil. The residue after the oil is extracted is pressed into a cake, and this cake, which still contains about ten per cent of oil, is sold as rape-seed cake, and is largely used for feeding stall-fed cattle in the older countries. The manure obtained from animals fed on rape-seed cake is a very valuable one. The cake is rich in both nitrogen and phosphoric acid. The cake, when the price is low, is often used as a fertilizer by itself, and is valuable for land which is deficient in humus. From four to five hundredweight an acre is the quantity used as a fertilizer. For soils deficient in humus, and which will benefit by the addition of vegetable matter, rape is one of the best crops that can be grown—a crop of rape plowed into the soil will improve it very considerably. Leguminous crops are largely used for this purpose, on account of their being able to obtain their nitrogen from the air.

The rape plant, owing to the deep-growing, searching nature of its roots, obtains a great quantity of its food supplies from the subsoil, and when the crop is plowed in and the humus decomposes, this food is available for the following crop, and increases the yield very largely.

W. R. GILBERT.

DOLLY BLOOM 12770. ADVANCED REGISTRY NO. 40

Makes largest milk record of a Guernsey cow for a year. Has held three of the world's official year's records, viz: As a 2-year-old, 8841.58 pounds of milk; 453.86 pounds of butter fat. As a 3 1-2-year-old, 12674.83 pounds of milk; 623.94 pounds of butter fat. As a 5 1-2-year-old, 17297.51 pounds of milk; 836.21 pounds of butter fat

THE SILO?

J. D. T., asks the following questions:

"How many cows or other animals are necessary to make a silo profitable?

"I know that silos are very valuable on large farms, but what I want to know is how valuable are they to the small farmer?"

The silo must certainly be as profitable to the small as to the large farmer, in that an animal, being an individual factor, represents the same relation of cost of maintenance and production to net profit, whether it be a single animal under consideration or a herd or drove of many individuals; so that the feeder of one cow or one steer or sheep or goat is proportionately as much interested in feeding the one most cheaply and completely as the feeder of a hundred.

To my mind, the only question for the small farmer to decide is whether he has enough land to produce enough corn and hay, pasturage or soiling crops to feed enough animals to make a silo possible. Of the economic importance of the silo as a container and conserver of feed in the best condition for cows, especially, I am as certain as a farmer can be of anything.

But too small a silo is not practical. I would not recommend any one to build a silo less than eight feet in diameter. Then, in feeding silage, it is necessary that enough be used that the whole surface can be fed from daily; so if one has a silo eight feet in diameter, he should calculate on having eight or ten, or better a dozen, mature animals to which to feed silage.

If I had ten acres of farm land, and could keep ten cows and two horses—that is, were able to own them and make profitable use of them—I assuredly would have a silo.

Finally, there are large farmers, as well as small farmers, to whom the silo is not valuable, by reason of its being misused. For instance, silage is not a complete ration; it has its limitations. It merely helps. Putting the best silage in the world into the ration of a worthless cow will never make her profitable. But this for the silo: if dairymen will insist upon keeping such cows, as many of them do, the silo will make it easier. If good cows—cows worthy to be fed and have men's labor bestowed upon them—are kept the silo giveth to him that hath.

W. F. MCSPARRAN.

NOTES

Land which is unproductive is not necessarily exhausted. The elements of fertility may be there in an unavailable form.

Early maturity is not entirely with the breed, but any good stockman can increase that quality in his herd to a remarkable degree by good feeding.

A well-bred animal of any sort is a machine for utilizing raw products to the best possible advantage. It does this with less waste and consequently more profit than a scrub can.

Often through the season we gain or lose by the promptness with which we do our work. There is a best time in which to do every stroke of labor on the farm. —N. J. Shepherd in the Kansas Farmer.

The leading swine-producing counties in the Province of Ontario, Canada, are Essex, Kent, Simcoe and Grey.

Of the principal agricultural products in Mexico, Indian corn ranks first and Silas hemp second.

The value of the mules and horses shipped from Missouri last year is estimated at $13,000,000, while the value of poultry and eggs exported from the state during the same time was about $37,000,000, to say nothing of poultry and eggs consumed on the farms and in the towns.

*

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ABOUT ADVERTISING

FARM AND FIRESIDE does not print advertisements generally known as "readers" in its editorial or news columns.

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Of course we do not undertake to adjust petty differences between subscribers and honest advertisers, but if any advertiser should defraud a subscriber, we stand ready to make good the loss incurred, provided we are notified within thirty days after the transaction.

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Beware of "fake" patent medicines. Some patent medicines are beneficial, but many of them contain a large amount of harmful drugs. Rely upon your family doctor. He knows the physical make-up of you and your family better than any one else. No "fake" medicine advertising is accepted for FARM AND FIRESIDE.

◈

If you have any suggestions with regard to the betterment of FARM AND FIRESIDE, write to the editor about them. Our rapidly increasing circulation shows that FARM AND FIRESIDE is now better than ever, but we fully realize that there is always room for an improvement that will help the FARM AND FIRESIDE family.

◈

The next time you get a letter from us saying that your subscription has expired, just put a dollar bill in the envelope enclosed and send it to us. It will pay your subscription seven whole years ahead and give you one hundred and sixty-eight great big helpful numbers for about three fifths of a cent apiece! Isn't that dirt cheap for as good a paper as FARM AND FIRESIDE? We make the offer to help increase our big family of readers.

◈

DENATURED ALCOHOL

There have been many inquiries from our subscribers for lamps, heaters and cooking stoves adapted to the use of denatured alcohol. The demand is ahead of the supply. In a recent interview, published in the New York "Tribune," Senator Hansbrough explains the cause of delay in getting the proper appliances on the market as follows:

"Some disappointment has been expressed over the delay on the part of our manufacturers to furnish alcohol-burning lamps, stoves, heaters and other alcohol-using apparatus, similar to those used in Germany. I have personally investigated this matter, and find that American manufacturers are preparing to put on the market in the near future lamps in which it has been found by carefully conducted experiments that one gallon will give as much light as two gallons of kerosene. I have also seen samples of cooking stoves, heaters and other alcohol-using appliances which will be on sale in this country at an early date."

It is evident that druggists still consider denatured alcohol a drug instead of a staple article of domestic use for heat, light and power, for they have not yet broken away from the "drug habit" of prices. Regarding wholesale and retail prices Senator Hansbrough says:

"One difficulty which has served to delay the general use of untaxed denatured alcohol for domestic purposes, such as cooking, heating, etc., has been the high price charged by the retail druggists, who, so far, are the only dealers handling this material. It is evidently not yet understood that as an industrial material denatured alcohol is on a different footing from that of tax-paid alcohol so long dealt in by druggists, and that it will have to be sold at a much lower rate of profit than the latter material. I am advised that tax-free alcohol is now being sold f. o. b. at Peoria, Illinois, for thirty-one cents a gallon, while the general retail price is about seventy-five cents a gallon. This would indicate that the expense of handling and the retail dealer's profit are much too large, and if the conditions under which the retail price is so high are in way due to the regulations or restrictions placed on the sale of the denatured product, it will be necessary to have these regulations modified so that not only druggists, but grocers, hardware dealers, etc., can handle it."

A SOUND POLICY ENDORSED

The following letter from a Pennsylvania subscriber is fully appreciated because it is a hearty endorsement of a sound policy for the protection of our people. "Free" medicine offers are all deceptions, just as he says they are. Don't be fooled by the old "blind recipe" trick.

"I have been a reader of FARM AND FIRESIDE for a number of years, have sent in a number of subscriptions, and in all this time have never written you on any of the good things you have had to say for the benefit of your readers. Today I read on the second page of the April 10th issue of the FARM AND FIRESIDE that you refused to advertise something to be 'free.'

"I wish all papers would do the same. It would be a blessing to the American people if they would do so. We can scarcely pick up a paper but that there stares us in the face an advertisement, 'Tobacco Habit Cured Free,' 'The Liquor Habit Cured Free,' 'Rupture Cured Free,' and many other things too numerous to mention. I am glad to know that you kick them all out, for they are all deceptions.

"Others advertise certain goods asking purchaser to remit so much money and the goods will be forwarded, and if not satisfactory, to be returned and money will be refunded. Goods are returned and money is withheld. They have the goods and the money, and the Poor are swindled. Yours for reform,

"ALEX. CASEBEER."

◈

BLENDED GOODS

In deciding the controversy over what should be the correct branding of mixtures of cologne spirits colored and flavored in imitation of genuine whisky, the government has established an important precedent of general application to be followed in the administration of the pure-food law.

In substance the ruling is that only the original old-fashioned article made by aging the product of the still worm for four years in a charred barrel is entitled to wear the label "Whisky," and that mixtures of colored, flavored and diluted raw alcohol now sold as "blended whiskies" must be labeled "Compounded" or "Imitation Whiskies."

The ruling is based on the broad principle that the pure-food law was enacted for the benefit of consumers, and not for the benefit of manufacturers of imitation, counterfeit or adulterated products, that the consumers have the right to know exactly what they are buying, and that the object of Congress in passing such a law was to protect consumers against imitations, counterfeits and adulterations, and protect honest manufacturers against the unfair competition of unscrupulous makers, mixers and venders of fraud food products. The label on every article of food, drink and medicine should be absolutely true to the contents of the package.

* * *

It is presumed that the distilleries and rectifiers who now make "pure," "fine," "old," "blended whisky" from raw spirits, burnt sugar or prune juice, and bead oil, will send up a mighty howl against the President, and say that their vast business interests will be injured. But the situation is not so serious for them as it seems. According to "Collier's:" "Dr. Ashbel P. Grinnell, of New York City, who has made a statistical study of patent medicines, asserts as a provable fact that more alcohol is consumed in this country in patent medicines than is dispensed in a legal way by licensed liquor venders, barring the sale of ales and beer."

The bulk of their product goes down the throats of the thirsty, not as "blended whisky," but as patent medicines, so widely and extensively advertised in the secular and religious press that their names are household words throughout the land. The alcohol in half a dozen of the most prominent of these high-priced, "cheap-cocktail" nostrums runs from eighteen to forty-four per cent. So, let the proprietary medicine combine put out a few more "cures," "tonics," "bitters," "invigorators," "bracers" and "nerve builders," along with homely pictures and flattering testimonials from admirals, congressmen, judges, clergymen, good temperance sisters and octogenarians, and there will not be any raw alcohol left for making "blended goods," and consequently no further occasion for disputes over labels between "straight" and "blended" whisky men.

◈

FOR PURE DRUGS

A pure-drug bill has been introduced in the House of Commons of Canada which provides for strict government supervision over the sale of patent medicines.

No bottle or package of medicine shall be sold unless a sample has been sent to the minister, accompanied with an affidavit as to whether it contains alcohol or poisons, and if so, as to their percentages.

Every package of medicine offered for sale must have an internal revenue stamp attached. If an analysis shows that the medicine does not conform to the sworn statement about it, or if the minister considers the medicine unfit for use, the dealer may present his side of the case. Then, if deemed advisable, the government may prohibit the manufacture, importation or sale of the medicine.

The use of cocaine in patent medicines is prohibited. The distribution of free samples of medicine is prohibited.

The Canadians have become wise to what is called "The Great American Fraud."

◈

THE PEOPLE VS. THE "LUMBER TRUST"

Every good American citizen, farmer or other will applaud President Roosevelt's recent order withdrawing from sale and adding to the already existing forest reserves seventeen million acres of wooded lands in our Southern and great Western public domain.

Our forests are rapidly disappearing, and wood is becoming scarcer every year. Already most of the best timber lands of our country have passed under the control of the so-called lumber trust. In this respect we are far behind most of the European countries, which long ago realized that forests are essential to the prosperity and well-being of a nation, and have enacted wise laws for the regulation of private ownership of forest lands, as well as for the wooded areas still belonging to the nation at large. The duty of the national government in this matter is laid down in a recent speech in Congress, as follows:

"The adoption of national laws governing the remaining forests of the country.

"The reservation of all lands upon which timber is growing, that yet remains unsold, the trees to be sold under direction of the government.

"Prohibiting the transportation of lumber and timbers from one state to another where these regulations are not complied with.

"Removal of all duties on timber.

"Restricting the output of every quarter section of forest, to make the forests perpetual.

"Requiring the systematic planting of trees where necessary to maintain a perpetual forest."

Commenting on the situation the magazine "Arboriculture" says, editorially, that the following are the most important reasons for congressional action for the control of forest property:

"(1) The influence which forests exert on precipitation.

"(2) The influence upon water storage; refrigeration being the best means of retaining water in the mountain valleys.

"(3) Effects of forests upon wind movement.

"(4) Disastrous effects of floods and added costs of levee system caused by forest destruction.

"(5) Menace to river navigation from droughts caused by too rapid melting of snow because of removal of protecting woodlands.

"(6) The future supply of timber for this nation depends upon the conservation of the remaining forests.

"(7) Transportation between the states will be greatly injured by the sudden removal of the forests.

"(8) No appreciable effects occur within the state in which forests are located to compare with the damage done in other states, often far removed.

"(9) On account of local corporate power, individual states are unable or unwilling to control the trust.

"(10) National interstate legislation is the only remedy.

"(11) The recent ruling of the Supreme Court in the case of the State of Kansas vs. Colorado, regarding irrigating waters, is applicable to this subject, forest influences.

"(12) The abandonment of many thousand square miles of former forest areas by lumbermen, after removing all the timber, forces the worthless remaining land upon the state, which can realize no income from it, but must maintain it at great expense to the people.

"(13) The loss of the nation from the existence of so large an area of non-taxable, barren property.

"(14) Necessity of importing from abroad the timber required after removal of our forests.

"(15) The greatest curse possible is a treeless nation."

Elaborating on these points the editor of "Arboriculture" concludes:

"Navigable rivers flowing through many states have their volumes increased immoderately at times, and are again shrunken so as to obstruct navigation, from the rapid melting of the ice and snow upon the mountains in far-distant states, which has been caused by the removal of the forests upon these mountains and valleys. For this the injured localities have no recourse except by national legislation.

"River and harbor improvement are increasing annually because there are no forests to retard the flow of water, while the levees of many states have frequent crevasses and must be maintained at great expense from the same cause. Yet no state is afflicted by the injuries caused within its borders, and cannot alone control the cause which exists in another commonwealth.

"Under existing circumstances it is impossible to induce great lumbering corporations to adopt conservative methods in their operations; the cream is skimmed from the property, immense waste occurs, the continuation of the forests being farthest from their aims.

"Under these conditions the land is being rapidly denuded of all that gives it value, the time rapidly approaching when the entire forest area will disappear.

"The rocky, mountainous lands thus stripped of the timber will be thrown back upon the nation or state in which they are situated, the soil soon eroded, leaving the property valueless for taxation and productive of no income for the support of the nation."

My Kind of Weather Prophet

BY ALONZO RICE

I love the weather prophet who is prophesying FAIR;
Though rain is pouring from the clouds, he finds a rainbow there!
He shuts his eyes against the sky that looks a little black;
His face full-fronts the dawn of day, the night is at his back!

When the heavens seem descending and there's tempest in the air,
I love the weather prophet who is prophesying FAIR;
For his kind prognostication makes me for a while forget
My umbrella's wrong side out, my shoes are wringing wet!

A cheery note is in his voice, like any bird's as gay,
And in his kindly features beams the sunshine of the May;
I love the weather prophet who is prophesying FAIR,
Thermometer marks ZERO: he has SUMMER HEAT—to spare!

Then let the blizzard bluster and the rain in torrents fall,
He's my nearest, dearest neighbor, and I live throughout it all!
I greet him with a glad "Hello!" this prince; I do declare
I love the weather prophet who is prophesying FAIR!

"Sweet By and By"

IN THE cottage, the interior and exterior of which is illustrated, lived the man who composed the music of a song, the fame of which probably will live for all time. It is the home in Elkhorn, Wisconsin, of the late J. P. Webster, one of the two men who were originators of "Sweet By and By."

Mr. J. L. Graff well says that in evangelical work in two worlds perhaps no other song was so extensively and universally used as this Wisconsin production. It was sung by Sankey in the great Moody and Sankey meetings, and it was and is used by practically all of the other well-known evangelists of the world.

The people of Elkhorn would like to preserve this pretty little vine-clad cottage for all time. They are now talking about erecting a stone monument to the memory of the two men who helped to make their town famous, and they want to set the monument in a big bed of solid concrete, to bolt it there so that it may stand and defy the world to produce any other author of the famous anthem.

For the people of Elkhorn have had a hard time holding on to this cherished honor. Every now and then a new claimant bobs up and unblushingly lays hold of the authorship both as to words and music. Perhaps twenty different men have been given credit for writing and composing "Sweet By and By."

The true history of the song is that it was produced in the fall of 1867. The words were written by Dr. Sanford Fillmore Bennett, and the incident that led to the creation of the song is extremely interesting.

Webster and Bennett were great friends. They had produced many other songs, and had published them in a book, to which "Sweet By and By" subsequently was added.

One night, so the history goes, Mr. Webster entered the store of Doctor Bennett, appearing depressed in spirits. When Bennett asked his friend what troubled him, he answered, "It is no matter; it will be all right by and by." Bennett caught the words like a flash, and turning to his desk, wrote the words as fast as he could pen them. Then he handed them to Webster, who at once began writing the notes. Doctor Bennett claimed that not more than thirty minutes elapsed from the time Webster entered the office until Webster was playing the hymn on his violin.

Another popular song that took strong hold in the South just after the war was produced in Elkhorn. It was called "Lorena." It was written by H. L. D. Webster, who was no relation of J. P. Webster, but the latter wrote the music.

Soldiers Still Unrewarded

THERE are a number of men who fought with the American navy or marines against the Spanish in the waters of the West Indies who have not yet received the bronze battle medal to which they are entitled, and the Bureau of Navigation is endeavoring to locate all the former officers and enlisted men.

By a legislative resolution of March 3, 1901, the Secretary of the Navy was authorized to issue bronze medals commemorative of the naval and other engagements in the waters of the West Indies and on the shores of Cuba during the Spanish-American War. A board of awards submitted a list of engagements which they deemed of sufficient importance to commemorate by awarding medals, but the secretary enlarged the list so as to include all officers and men who were at any time under fire in those waters.

To secure one of these medals all that it is necessary to do is to forward to the department the discharge certificate of the claimant, which certificate will be promptly returned.

Most Hated Russian is Dead

THE recent death of Constantine Petrovitch Pobedonsostsef removes from Russian public life its most hated servant. For the past twenty-five years he has been procurator-general of the Russian Holy Synod. He used his power to oppose religious tolerance and political reform. He was the practical power behind the throne during the reign of Alexander III., and during that of the present czar down to the publication of the Reform Rescript in October, 1905, when he retired to private life. To his credit it may be said that he was a sincere man, and while the cruelties which he sanctioned may have been justified in his own conscience, yet they worked great persecution to the Jews. Among the common people of Russia his death was a signal for rejoicing.

The Carrying of United States Mails

FIVE millions of dollars in the cost of carrying the mails by the railroads and other transportation companies of the country will be saved by the government by a simple change in the method of figuring. The average daily weight of mail matter carried will be determined by dividing the total weight for a week by seven days instead of six, as at present. Heretofore, basing the average on only six of the seven days in the week, the transportation companies have received just one seventh too much pay. The Post Office Department justified the present system by holding that the law provided that in determining the average weight only the daily average of the "working days" should be considered.

There is also to be a reduction in the rates paid for the carrying of the mails. On routes where the average daily weight is between five thousand and forty-eight thousand pounds there will be a reduction of five per cent; on routes carrying between forty-eight thousand and eighty thousand pounds there will be a reduction of ten per cent; and on routes carrying over eighty thousand pounds a rate of $19.00 instead of $21.37 a ton will be paid.

For the use of cars of forty-five feet the pay will be $27.50 instead of $30.00, for cars of fifty feet $32.50 instead of $40.00, and for cars of from fifty-five to sixty feet $40.00 instead of $50.00.

Helen Gould's Latest Charity

MISS HELEN GOULD has purchased near Greeley, in Colorado, a tract of 100,000 acres, upon which she will expend $100,000 for implements, seed and fencing.

The land is to be sold in small tracts, and the buyers who prove themselves worthy will be allowed easy terms of payment. They will have the advantage of instruction, with access to a library, and the sanitation of the tract will be superintended by skilled and practical directors. Early in the operation the shiftless will be weeded out.

The town of Greeley was settled many years ago by colonists from the East inspired by the advice of Horace Greeley. From the beginning it has been conducted in as orderly a fashion as any New England village. No liquor has ever been sold there; no rough characters ever found it congenial. It has developed into a prosperous and beautiful little city of well-kept streets and neat and luxurious homes. It is in the midst of a vast stretch of fertile land adapted to grains and fruits, and absolutely unequaled for the quality and yield of its potatoes. Irrigation is necessary, but the supply of water is ample. It is within a short distance of Denver and Cheyenne, both important railroad points, and each in itself constituting a considerable market.

If the immigrants cannot make a success of their venture in such a place and under such auspices, they would fail anywhere.

This charitable enterprise of Miss Gould, comments the Philadelphia "Ledger," is notable not only in itself, but for its suggestion of a way in which the city slums may be measurably cleared of a large class of persons who, helpless there, might in a different environment become industrious and independent.

THE HOME OF MR. J. P. WEBSTER, WHO COMPOSED THE MUSIC OF THE SONG "SWEET BY AND BY"

INTERIOR VIEW OF WEBSTER'S HOME, SHOWING PIANO, VIOLIN AND A PORTRAIT OF MR. WEBSTER

The Gavel in Congress

IT MAY be an item of interest to many to know that the gavel used by the presiding officer of the United States Senate has no handle like that used by the Speaker of the House. The gavel of the former is an ivory contrivance, modestly ornamented, of cylindrical shape and about four inches long, and in wielding it the Vice-President holds the gavel in his hand as if it were a small hammer without a handle. How the custom originated of providing this hammerless gavel is not known, and the oldest senate attachee cannot remember when it was otherwise, just as he cannot remember when the gold snuff box that occupies its ancient niche at the right of the Vice-President's desk was not dutifully filled every morning, although that once popular box now has little or no patronage.

Schwab Wants to Help the Boys

A SCHEME whereby he hopes to train American boys to become the world's greatest makers of steel in all branches has been inaugurated by Charles M. Schwab, head of the Bethlehem Steel Company and other organizations. There is offered an opportunity for three thousand boys to enter the great mills at Bethlehem, and if they do as he says and as he has done himself, Mr. Schwab declares they will be able not only to become mechanics, but experts with a full knowledge of the highest development of the iron and steel business.

Riding from Pacific to Atlantic

THE United States government is engaged in an interesting and unique trial of equine endurance. Some weeks ago Homer Davenport, the cartoonist, wrote to President Roosevelt stating that no real demonstration of the power of the Arabian horse had ever been made in America, and expressing a desire to have a trial made by an officer of the army. President Roosevelt endorsed the suggestion, and sent Mr. Davenport's letter to General Bell, chief of staff, with a request to arrange for the trial. The horse was furnished by Mr. Davenport, it being a splendid animal recently imported at considerable cost from the desert of Arabia. It is a stallion, somewhat smaller than the army horse, being only a little over fourteen hands high, and twelve years old. The trip embraces more than three thousand miles, and it is expected to be made in one hundred days, or less. Complete statistics of the condition of the horse and rider, amount of food consumed, and other details, will be kept from day to day. The route selected is along the Oregon Short Line and the Union Pacific, the road from Silverton to Umatilla, Oregon, thence to Boice Barracks, Idaho, Fort D. A. Russell, Wyoming, Omaha, Nebraska, Fort Des Moines, Iowa, Fort Benjamin Harrison, Indianapolis, Columbus Barracks, Ohio, Pittsburg and Harrisburg, Pennsylvania and New York City.

What is said to have been the most famous endurance ride by a foreign officer was made by Lieutenant Bassor of the Russian Army, who rode a single horse from Hersoo in Manchuria to St. Petersburg, a distance of 5,676 miles, in eight months and three days.

We don't ever want to lose a single subscriber; but if for any good cause it is necessary to discontinue your subscription, won't you get some one else to take your place? We feel sure you will do that much for FARM AND FIRESIDE.

[BEGUN IN THE APRIL 10TH ISSUE]

"BANNERMAN—Bannerman," repeated the colonel thoughtfully, "that name sounds fam— Why, yes, of course, old Widow Bannerman, who lives on a little place ten or twelve miles from here.

"She likely has three or four bales of cotton, and if we pass her house we'll stop in. She will be glad to sell, and I would like for you to meet her. In the old days she was quite a belle and very handsome. Now she is over seventy, clear-headed and vigorous in body, works outdoors with almost the energy of a man, is full of reminiscences and jokes, and can entertain one or a dozen with equal success. Quite a character, and with a pathetic history. But about Miss Collinton? I believe we will be as apt to find some trace of her on our trip as you would by starting off on an individual search. Why not put some notice in a local paper or two that might attract her attention? Being a teacher and out of a situation, she would naturally be on a lookout for want or employment advertisements. Do you remember any particular tendency or talent in your Miss Collinton—or Bannerman—that might be used to draw her attention?"

Burke shook his head, hesitated, then suddenly produced a pencil and piece of paper from his pocket.

"Why, yes," he said. "Meg—Miss Collinton—did have quite a talent for writing compositions. She was only a young girl, you know, and her ambition had not expanded beyond that. Wait a minute."

He checked his horse, and remained silent thinking for some moments, then he wrote:

"FIFTY DOLLAR PRIZE

"For a one thousand word article on working in a cotton mill. Must be by a young lady, and an article of actual experience, of herself in some small factory in the North. Wanted at once. Address

"X. Y. Z., at this office."

He handed it to Colonel Bruce.

"If she is the right one, and sees that," he said, "I feel positive she will write the article. And I doubt if there is another young lady in the state who has ever worked in a small cotton factory in the North."

Colonel Bruce took the notice and read it approvingly.

"Yes, that may discover her whereabouts and identity, if she sees it," he acquiesced. "I will have five or six copies of it made at the next town and sent to the best circulated local papers, with a notice for the editors to forward any replies they may receive to my residence. We may find some there upon our return."

Two days later, as they were riding along a country road, Colonel Bruce nodded toward a little cottage they were passing.

"That is the Widow Bannerman's," he said. "We haven't time to stop now, for we must see Captain Black and the Hall brothers before night. But we'll try to stop on our return. If she hasn't sold her cotton, I would like to help her dispose of it, and for you to meet her. There she is now, in that field back of the house. See those two women in sunbonnets, who appear to be planting something? The one this way, with the gray dress, is the widow. Maybe we can get by here this evening and stop and have a talk with her."

But they did not return by the Widow Bannerman's; and the next day they swung off into another road, which led them entirely from the neighborhood. It was three more weeks before they saw all the planters and returned to Colonel Bruce's home.

Contrary to his expectations, Burke found over a hundred manuscripts awaiting him. But a hasty glance through them showed that only one fulfilled the conditions, of being written by an actual worker in a small cotton factory in the North. This one needed not the signature at the end, for he recognized the handwriting. He read it with mingled emotions. He could see ungainly, tagging little Meg, with her big, glowing eyes; the familiar figure of Ben; and even, between the lines, fancied more than once that he could recognize himself. At the end of the manuscript were the initials, "M. C., Care of Widow Bannerman, R. F. D. 4 Calhoun."

Burke had saved more than half of his allowed expenses. Within an hour a check was on its way to "M. C." He would follow himself in the morning, immediately after he had written a detailed letter of his purchases to Scott & Son.

But he had examined his manuscripts first. There was other mail. One of the letters carried him hurriedly to Colonel Bruce, who was sitting on the piazza smoking.

"Read this, sir," he requested, giving him the letter, "then tell me what you think of it."

The colonel glanced at the signature.

"St. Ledger," he said briefly. "Drop it into the fire."

"But why?" persisted Burke.

"Because there is a saying here that to touch St. Ledger is to get burned. Even our lawyers avoid him as they would the pest. Whatever he goes into he comes out on top, and all others concerned in the transaction lie sprawling at the bottom. In short, he is one of the most consummate scoundrels in the South, always lawless, but always keeping just inside the line of legal action. He— But no, what am I thinking of!" suddenly. "St. Ledger is dead. He was shot on a Mobile and Galveston steamer six months ago." He looked at the letter more closely. "His son, most likely, trying to

"'St. Ledger,' he said briefly. 'Drop it into the fire'"

settle up the estate. Ten thousand bales! I knew they had a lot down there, but did not suppose St. Ledger owned that much. Anyway, you can't go, for they are having fever, and the plantations are under strict quarantine. And look here! There's a forty-thousand-dollar attachment on the cotton which he wants you to lift. That settles the matter. No one would risk a dollar in a St. Ledger law affair, even if he could break the quarantine and were willing to chance his life with the fever."

"It's a lot of cotton," said Burke wistfully, "and the letter says it's of the very best quality."

"What of that?" impatiently. "You can't go. You have never heard anything of St. Ledger before, or you would not dream of such a thing."

"There was a St. Ledger at college during my first two years," said Burke thoughtfully. "I never happened to meet him, but some of my friends did. I have an idea this is the same one. There were stories of a wicked father, and his running away from home in horror and applying himself feverishly to his books, with the idea of earning an independent living. My friends at college spoke very highly of him."

"He is a St. Ledger, with the St. Ledger blood," warned Colonel Bruce. "My advice is to drop that letter into the fire. I don't see how he ever got it through the quarantine."

But Burke took the letter and read it through again, slowly, with a strong determination appearing in his face. The letter ran:

"MR. BURKE KENNEDY:—

"One of my negroes informs me that you are buying cotton for cash. I have ten thousand or more bales of extra good, on which an attachment of forty thousand dollars has been placed. I cannot get through the quarantine, nor would it be of any use if I could. I have no friends who would help me in this, and no business house would consider security—from me. My name bars it. I tell you this frankly.

"Now if you care to come to me, to pay off this attachment, I will sign papers to let you have the cotton for one half its value or less. It will be well worth your risking even the quarantine. This would give me a modest fortune to get away with, which I shall do just as soon as I can settle my affairs. On the other hand, my father's creditors, and enemies, will so manage that I shall get nothing. So while benefiting yourself, you will be benefiting me. ST. LEDGER."

"If he means by enemies the people his father wronged, they will comprise about all of the business men of the country," observed Colonel Bruce drily, as he watched his guest. "Old St. Ledger at one time was supposed to be worth several millions; apparently the son will have what he can get out of the cotton, and if the creditors can keep him from getting any, so much the better. The community will be safer. Like father like son. Now let us arrange something for to-morrow, for of course you will remain as my guest a few days."

CHAPTER VII.

BURKE shook his head.

"Thank you, Colonel," he answered, "but I shall start for St. Ledger's to-night, just as soon as I can communicate with my house. And I have discovered that your Miss Collinton is my Miss Collinton. I will stop there on my way down and acquaint her with her real name and inheritance; and then, when I come back, will arrange for her to go North."

"But the quarantine, you—you imbecile!" roared the colonel incredulously. "What'll you do with that?"

"Slip through," grinned Burke. "It won't be very difficult, I imagine. The real trouble with a thing like that is getting out. However, I would have to vegetate anyway, I suppose, until it would be safe for me to come back into company again, so it wouldn't very much matter if I should be detained a little. Anyway, it's worth the risk."

"That depends on how one values life," snorted the colonel.

"Oh, it isn't altogether money. I'm getting interested in this St. Ledger. If he's the one who was at college, as I believe, I want to know him. Even though I never met him there, I used to think, from the stories, that I would be glad to. And now your account interests me still more. It strikes me St. Ledger is being pushed a little too far into the corner. Because his father defrauded the people is no reason why the people should defraud him beyond what his father owed them and stole from them. I want to make some money, and of course I am going down and take the risk for that principally; but in doing it I shall be glad to save him from losing any, and to share what I can restore to him, as he has put it."

At the telegraph office he waited forty minutes, then the reply came:

"Buy it. Buy all you can below the figures we gave. This St. Ledger deal seems especially promising, and we can hedge you in from much risk. We are now in communication with most of the financial points in that section. Funds have been telegraphed you at the same bank as before. You had better get certified checks to remove the attachment, as they would meet any temporary obstructions which the lawyers might seek to offer."

Burke went from the telegraph office to the bank, and from there rode across country to the Widow Bannerman's cottage.

But the cottage was closed, with all the curtains down and the doors locked. He knocked front and back, and tried the doors, then walked about the yard and out to the cow stable. There were chickens pecking around the house, a flock of turkeys off in one of the fields, and a cow munching hay in the stable; so the inmates could not have gone far. Very likely Meg had received her check, and she and the old woman gone into the village to purchase something.

He had no time to wait for them, so he took one of his business cards and pinned it on the front door. Meg would see it, of course, and knowing he was in the neighborhood, would be on the lookout for his return.

But as he reached the road he saw a buggy just turning a corner, coming from the direction of the village, and he waited. There was only one woman in it, however.

Before coming to the gate the horse swerved in of its own accord, and a little later stopped. An old woman sprang nimbly to the ground. Burke went forward.

"Mrs. Bannerman, I suppose?" he asked.

"Yes, sir," looking at him inquiringly. Then, "Oh, you're the cotton man, I suppose. The neighbors have been speaking about you. I've got four bales. Want it?"

"Certainly. But I came more especially to see the young lady who is stopping

with you, Marguerite Bannerman. Where is she?"

"The girl who stayed with me a few days has gone off on the train," the old woman replied, as she went to the horse's head and led it into the yard. "I just took her to the station. She didn't say where she was going, only the train was the through one North. But you're mistaken about the name. Her's is Collinton. I'm Marguerite Bannerman."

Burke took an impetuous step forward. "Then you're some of her family," he cried. "Won't you tell me how— But I beg your pardon! Let me lead the horse."

He took the bridle in his hand and led the horse into the yard and on to the stable, the old woman walking by his side. Then they went into the house, and she raised the curtains.

"Now what is it you want to find out?" she asked.

"All I can about Marguerite, and you. Her name isn't Collinton, but Bannerman, the same as yours. But wait, let me tell you her story."

He went through it rapidly, telling what he had discovered and what he suspected. The old woman listened with a tremulous smile on her lips and tears coming to her eyes.

"And to think," she said softly, "of her being in the house with me and neither of us ever suspecting; and to think, too, of my not being all alone in the world, as I've thought so long. I ought to have guessed when I first met her in the road, and noticed how much she looked like her mother. But I didn't. I thought it merely an accidental likeness, though it drew me to her at once. You see, my son died nearly twenty years ago, through worry at losing his fortune. A man named St. Ledger, whom he thought his friend, got most of it. Then his wife and little girl went North to see some of her people, and there was a big wreck on the railroad, and as I never heard from them afterward I thought they were killed."

"How did you and Meg—Marguerite—happen to be thrown together?" asked Burke.

"It did seem happen then, but now I know it was intended. I met her walking near my own gate, and she said something about the flowers, and I asked her in. We both took to each other from the start, and somehow I invited her to visit me, and she consented. It seemed perfectly natural to us both that she should be here. She would work around the house singing, and would put on one of my old sunbonnets and go out and work with me in the field. Then she made some money writing, and was for starting off at once. But I don't think she went to that place in the North you spoke about. She wanted to be earning money, and to study, and she didn't like mill work. I've an idea she went North to find a situation teaching, where she could earn more pay, though she didn't say. We must find her."

"Yes, we must find her," agreed Burke, rising. "But there is another matter which I must look after first. Just as soon as that is arranged I will come and see you again, then will commence a search that shall not end until I have found her."

As he had surmised, there was little difficulty in breaking through the quarantine. The St. Ledger plantations comprised several square miles, and by waiting until night and leaving the road at considerable distance, and then stealing across lots in the deeper shadows of trees and fences, Burke was enabled to enter the St. Ledger woods, as he thought, unperceived. But he had a shrewd idea that it would be different coming out. Indeed, he had an uneasy conviction of more than one shadowy figure along the St. Ledger boundary.

St. Ledger himself was found pacing back and forth on his piazza. But at Burke's approach he stopped and came forward eagerly, with outstretched hands, running half down the long piazza steps.

"I was afraid you might not think it worth while," he said, "or if you did, that you would not be able to get through. Many of the guard are poor men, and I took the risk of offering some of them a little present, on the side from which I expected you to come. They would not dare to let a man out, but it does not matter so much about a person coming in. Perhaps the presents helped. Now have you come prepared to do what I have asked of you?"

"Yes."

"Thank God!"

So intense had been the suspense, and so full and sudden was the relief, that St. Ledger swayed and caught at a pillar for support. Burke helped him back to the piazza. But almost instantly the young man recovered himself.

"I beg your pardon," he said. "The strain has been rather severe; and your coming, though hoped for, was somewhat sudden. I am all right now. When I heard your name and purpose here mentioned, and suspected who you were, I felt that if I could secure your aid I would be saved. It seemed my only loophole. Hence you may understand something of my suspense."

"But you know nothing about me personally," objected Burke curiously, "only as a cotton buyer. There are dozens of others in the country."

"They are strangers and mere buyers. You are something different. I used to have that feeling when I stood on the bank with hundreds of others, watching you stimulating and inspiring your boat crew; when I saw you in a football rush, on the campus surrounded by admirers, or bending over your books and conquering them with the same resistless energy. There was a feeling among us college boys that whatever Burke Kennedy undertook would be carried out. The feeling has always remained with me. It tingled through me to the very tips of my fingers when I wrote that note. If you would come I knew everything would be all right. But—would you come?"

He threw back his head with a low, pleased laugh, which Burke had a choking intuition was his first in months, perhaps years.

"And now, Burke," cheerfully, "or, I beg your pardon again, Mr. Kennedy, I mean. You see, at college even strangers always spoke and thought of you as Burke. Now about the cotton. My proposal is this: I have ten thousand and forty bales. Your house can have it for two hundred thousand dollars and the attachment."

"But that isn't nearly one half its real market value," objected Burke incredulously. "Of course your note offered—"

"Owing to you, it will be all gain to me," interrupted St. Ledger, with sudden impetuosity. "Let me explain. My father staked six thousand bales he had in storage, and all his next crop, at a gaming table on the Mobile and Galveston boat, six months ago. If forty thousand dollars are not paid by a certain date, all of it will be forfeited. The gamblers have been planning for this, and are now confident of succeeding. They have got possession of all the plantations, of everything except just this cotton, and they have notes and papers from my father which will hold their claim. So you see what this means to me.

"Another thing, you are risking much to come here. There are ten cases of fever within a stone's throw, and ten more have died. Your profit will be great, but it is not too much, for your risk is great, too. Would you have come if you had known all?"

"I would have come," quietly. "It is merely a question of personal danger, and that is something I try to ignore. But—"

"I am satisfied—more than satisfied. My one hope has been to get away from here. Two hundred thousand will be a comfortable fortune to start with in some other place. I shall go to a little village in the North that I visited when a boy, and try to buy an interest in a mill property there. The owner has a daughter with whom I—a sort of boy-and-girl attachment, you know; but it has been growing on me, and we have kept up a correspondence ever since. Perhaps— But never mind that," abruptly. "Mill Run will be a pleasant spot for the quiet life I hope may be mine."

"Mill Run!" Burke caught his companion's arm and urged him into the stream of light that slanted out from the hall lamp, and examined his face. "You are the boy who walked out with Anna Belle once, and passed two other boys who were building a mud dam in the road," he said.

"Yes," wonderingly. "And you?"

"One of the boys."

They were silent for some minutes, looking into each other's faces. St. Ledger's grew troubled.

"I remember," he said dully, "and also what you told us. That is another thing you have accomplished. You are larger and better looking than I am. I—I suppose Anna Belle has offered to shake hands?"

Burke laughed.

"Not yet," he answered. "But you needn't look at me like that, St. Ledger. I'm not in love with Anna Belle, and never have been. At that time she represented something I was longing to climb to, and I think always has been a more or less incentive, or perhaps spur, to my ambition. But of late some one else has been stealing into my heart—though I have scarcely admitted the fact to myself as yet. She has a lot of property in prospect, and I—well, I have mine to make. But I think you may as well give me your hand."

St. Ledger did so, his face clearing, and once more his laugh rang out.

[TO BE CONCLUDED NEXT ISSUE]

THE DRUMMER OF CUSTOZZA

By Frank E. Channon

IT WAS gray dawn, and the first day of the great battle of Custozza, when the soldiers of Italy and Austria fought fiercely for mastery on that historic field.

Away out on the right flank, high up on the heights of Custozza, a single company of Italian infantry was posted as an advanced guard around a little cottage, which commanded a splendid view of the vale below.

Suddenly, under cover of the morning mist, a battalion of Austrians surprised their foe, rushed the pickets, captured many prisoners, and drove the remnants of the little company, some forty in number, into the little cottage. Here the Italians hastily barricaded the doors, loopholed the walls, and prepared to sell their lives dearly. They were forty against many hundreds, but brave men are always ready everywhere to sacrifice their lives for their country, and the commander of the little band well knew the importance of the post to be held.

Again and again the Austrians endeavored to rush the improvised fort, but without success; the deadly fire of their foe drove them back. But one by one the little garrison was falling. The back living room, which had been hastily converted into a hospital, began to be crowded. Only a score of able-bodied defenders remained, and the captain in command saw that something must be done, and done at once, or the important post would be lost.

Away down in the plain shone the white houses of Villafranca, and there was help. But how to get word to it? To signal was impossible; it was too far. A messenger must be dispatched. But who? Every man counted in that last desperate struggle—yet, stay! there was the boy—the drummer boy!

"Drummer!" he called loudly.

A lad of twelve, with smoke-begrimed face and torn uniform sprang forward and stood at attention.

"Have you courage?" asked the officer.

"I am an Italian," replied the boy, simply.

"Look yonder; do you see the town? There are our soldiers. Can you take this letter to them?"

"I can try, sir," answered the drummer stoutly.

"Then go! Remember our fate depends on you. Here, climb down this water pipe under cover of the gable; they will not see you until you are well started. Bend forward, as you run. Keep out of sight all you can. Now go! God help you!"

The lad swung himself out of the window and in a moment he had reached the ground.

"Ping, ping," instantly came the sharp reports, and little clouds of dust arose all around him. The enemy had detected him; he was a mark for the fire of all their men.

"God help him!" muttered the captain, as he eagerly watched the progress of his flying messenger.

Suddenly, the boy stumbled and fell.

"Shot!" groaned the captain, in an agony; "no, he is up again, he but fell. Good child!" he cried triumphantly—"Ah, but he limps; he is lame; 'tis a twist of the ankle. Run! Run on!"

All around the flying boy the bullets hissed and whistled. He was going slower now; he limped badly, but he was reaching safety. The little clouds of dust could be seen rising behind him, now. He was out of range; he was safe.

"Now run—run as you never ran before—what! he stops!" muttered the captain to himself, as in an agony of despair, he saw the lad come to a standstill, and then sink wearily down. "Coward, get up; go on!"

As if in answer to his thoughts, the drummer slowly arose and dragged himself forward again. He moved very slowly, but he went on; he went forward. Then he disappeared behind a low hill and was lost to view.

The captain turned and flung himself again into the fighting with desperate vigor, but as he fought, he kept muttering to himself: "Will he reach them? Will he reach them?"

Half an hour passed and still the garrison held out grimly. No signs of relief appeared. They could hang on but a short time longer.

"Surrender!" cried the Austrians, as they swarmed around.

"Never!" came back the gallant answer, "We will die here."

"It is all over, captain," muttered a sergeant, as he sank down, wounded to the death.

"Not while a man remains on his feet," answered the captain. "Fight on, boys, fight on! Fight on! No surrender! No surrender!"

There was a shout from the rear; loud cheers and answering cries of defiance. Relief had arrived. Help was at hand. Their comrades had come. The post was saved.

With many a dashing charge, the new troops swept the Austrian assailants away. The pitiable remnant of the garrison burst out to help them, and the Austrians fled.

And where was the drummer boy? Long did the captain search for him that night. At last he found him.

A little figure, with a very white face, lay on a stretcher in the improvised hospital at Villafranca.

It was the drummer boy.

He seemed to be waiting, expecting the arrival of some one, for every time any one entered he looked up wearily, but expectantly.

At last the one he looked for, came—his captain.

The officer saw him, and walked quickly to the bedside.

The lad tried in vain to bring his hand to attention, then smiling weakly, he whispered, "I did it, sir."

"Good lad!" the captain commended. "You saved the post! But you are weak; are you wounded badly? Where is it?"

"Here, sir," and with an effort he drew back the covers.

The officer recoiled in horror. Both legs were gone. A gory bandage bound up the poor stumps.

"My poor boy!" he cried pityingly, but the drummer had swooned.

"Ah, captain, a very hard case," said the doctor as he passed around. "The boy's legs could have been saved had he not irritated the wound by dragging himself along for over half a league; a very sad case, very sad; but he had a message of some sort which he thought important," and the surgeon passed on.

The captain stood erect, and his hand came smartly to his forehead as he saluted the little huddled form on the bed. Then, in his warm-hearted, impulsive, Italian fashion, he kneeled again and pressed a kiss upon the childish white face.

The drummer opened his eyes.

"Captain, what are you doing?" he whispered.

"I am paying homage to a brave boy," said the officer, as he brushed away the tears that would rise.

Often on pleasant days, a very old man may be seen being pushed slowly along the "Corso" in a "bath chair." On his breast glitters a decoration, and more than once the King has stopped his carriage, and dismounting, has crossed over and grasped the veteran's hand, inquiring after his health, and chatting with him for a time. Every one knows the "old man in the bath chair." The soldiers all salute him as they pass. He is a privileged character along the Corso. He can buy what he will without money or price, but it is little enough he wants. A few dates, a little bread and a bottle of wine, a little fish now and again, or a young pullet.

"The old man in the bath chair" is the drummer boy hero of Custozza.

The Housewife

The Wife's Pocketbook

EVERY woman should have a regular amount of money, for the use of which she is accountable to no one but herself. What injustice to expect a wife to work and economize and honestly earn her share of the living, and then be obliged to ask her husband for every dollar she has, and often be requested to give an account of its expenditure, at that; for no matter how willingly he may hand out the money, no one enjoys making the request for it, nor is cheerfulness on the part of the husband in this matter a common virtue!

Seeing the humiliating position of many matrons keeps some of our most capable and self-reliant girls from matrimony, whereas we should like to see the truest and brightest of our womankind in the position of wife and mother in our homes.

This matter of the wife's difficult financial position is sometimes caused by the penurious disposition of the "purse carrier," but in most instances, be it said to the credit of the husbands, it is due to thoughtlessness and—yes, just a wee bit of selfishness, too! "Why should a woman dislike to ask her husband for money?" he asks, and does not consider how he should feel on such an occasion at being asked what he had done with "the three dollars I gave you last week!"

Within the past month three women—all wives of well-to-do men—have confided to me that the greatest desire of their lives is to "earn money." This is not due to a grasping disposition, but is rather the justifiable desire of an intelligent mind to govern its own affairs. Every year more and more of our homemakers who have the opportunity are giving the domestic reins over to menials' hands or dropping them altogether for the alluring salary they can command, even though they are nothing ahead at the year's end, nor was it a financial necessity at the beginning. In most instances these women would have been perfectly contented to remain in the home if they knew that each month they would receive an amount unquestionably their own—even though the amount were not great.

The fixed allowance has proved beneficial alike to the extravagant and the economical woman. She who has always purchased whatever she chose, trusting her husband could pay for it "somehow," will learn the true value of money when obliged to depend strictly upon her allowance; while the careful woman will take the greatest comfort in laying away a part of her income each month. The husbands, too, are learning that they can plan to better advantage when they know just what amount the wife will require.

Among no class of men is it easier to allow the good woman a personal income than with the farmer. Let there be something that shall be considered her own. In one home half the "butter money" is always the mother's; in another, the wife has all she makes from the butter before and after the cheese factory is in operation; in yet another, half the eggs belong to the wife. In all these instances, of which I know personally, the women have not only clothed themselves and contributed to charitable enterprises, but have saved a goodly amount as well.

Let there be some part of the income that shall belong to the wife, and there will be a happy and contented woman in the farm house; any woman will be a more sympathetic and intelligent helpmate if she feels she is a real partner in the business. ALICE M. ASHTON.

TULIP SALAD—Scald perfectly ripe tomatoes; remove skins, and chill thoroughly; then with a sharp knife cut from blossom-end to stem-end into points, and press open, leaving a round bulb of the seeds in center; place one spoonful of mayonnaise tinted green on each tulip. If too dry more dressing may be added.

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Cut Flowers

IN ORDER to secure the best and most pleasing effects in the arrangement of cut flowers it is necessary that their manner of growth be considered. Flowers that grow on tall stalks should be put in high vases, which permit the long green stems to rise in a natural fashion, with some of the pretty leaves appearing gracefully among them. Tiny flowers should be put in small receptacles corresponding to their size. The aim should be to give as far as possible a natural appearance to each kind of flower.

When gathering field daisies, also gather some of the seed grasses that grow among them, then place all loosely in a suitable vase, remembering that they do not grow with their heads close together. This arrangement, with the help of a stretch of the imagination, will remind one of a small field of daisies with the grasses waving and nodding in the wind.

Roses should not be crowded into a vase, but tumbled loosely into a bowl, and a little study will enable one to add the necessary touches that help to give these beautiful flowers their natural grace and beauty.

Pansies should be cut with stems and leaves, and massed in a low, flaring vase, where they have a chance to appear as if still growing.

Vines may be put in wide-mouthed bottles and set on a mantel, where they may have the freedom to trail gracefully, as Nature designed. Such flowers as the hollyhock, sunflower, goldenrod and many others should be put in tall vases or some other tall receptacle, which will permit them to assume the stately attitudes that are natural to flowers of their kind. It is wrong to cut the blooms from a tall stem and mass them closely in a low, flat dish. It is a mistake to arrange flowers so that their heads will press closely together; they should, instead, be allowed to flare and spread in the same manner as indicated by Nature. By careful observation and study of this matter most gratifying results can be obtained in arranging cut flowers.

MRS. J. R. MACKINTOSH.

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Goldfish

GOLDFISH make the most interesting of pets, but many grow them without having any knowledge of their requirements, and can only enjoy them for a very short time. In my own case I lost half a dozen before I was successful. A sick goldfish will lay on its side and float about the top of the globe, and I find keeping too many in one globe and lack of fresh air more often the cause than overfeeding. Fresh air at night is more necessary for them than for human beings. When I find them ailing, I prepare a bowl of salt water—one teaspoonful to one gallon of water—then remove the sick fish at once to this, and leave for half a day. I have had them, when they seemed perfectly limp and lifeless, to revive in fifteen minutes' time, and at the end of an hour were as lively as ever.

The salt water bath is a standard remedy, and a change of food will often be beneficial. The prepared wafers are best—never feed crackers or bread—and these can be had from nearly all drug stores now, or from dealers in pet stock. Feed in the early morning, at the same hour each day, and they will look for it at that time, and feed only what they can eat up at the time; the quantity depends upon the number of fish. One will have to learn from experience.

An eight-inch globe is a favorite size, and will accommodate a pair. The one-dollar sized globe will accommodate half a dozen. I find it best to change the water every morning, just before feeding. I have a bowl of fresh water next to the globe, and slip my hand in the water and allow the fish to glide into my hand, and then change them without injury. If careful not to frighten or injure them, they will learn to glide into the hand without noticing the change. Spring or well water is best; they do not take kindly to the rain or cistern water. Some advise changing the water only once a week; but the water is foul enough to kill them at the end of two days. A few sprays of seaweed will help to keep the water sweet, and will also be food to them. When the water is sweet they will play about the middle of the globe, or at the bottom, but when it is foul they come to the top and gasp for breath. Never leave them in a tightly closed room. Once in a while feed angleworms for a change. LAURA JONES.

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Nut Cake

CREAM one and one half cupfuls of sugar and two thirds of a cupful of butter; add the whites of five eggs, two thirds of a cupful of milk, two and one half cupfuls of flour, one teaspoonful of cream of tartar, one half teaspoonful of soda and one cupful of chopped walnuts. Spread with a white frosting and place walnuts on top.

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Egg Pies

MAKE pie crust quite thin, cut with biscuit cutter or tumbler and fit into iron gem pans or tin patty pans. Beat together one egg, one half cupful of sugar and one tablespoonful of butter. Flavor with nutmeg or lemon and put one spoonful of the mixture in each crust. Bake until a light brown.

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Coffee Cake

THE ingredients for this excellent cake are one cupful of sugar, three fourths of a cupful of butter, two eggs, one half cupful of molasses, one half cupful of cold coffee, two cupfuls of flour, one small teaspoonful of soda, one cupful of raisins, one cupful of currants, two teaspoonfuls of cinnamon, one teaspoonful of allspice, one half teaspoonful of ground cloves.

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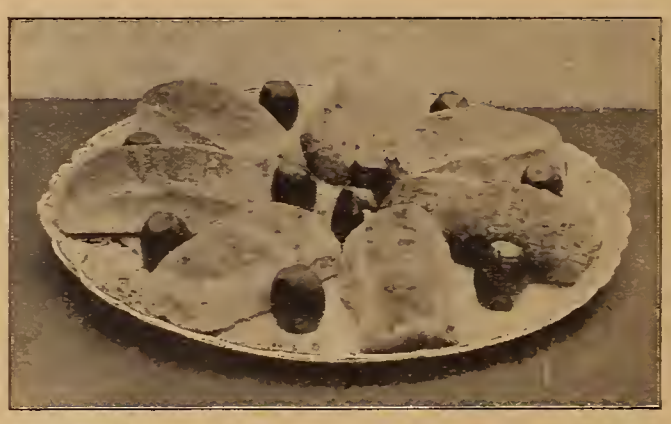
Honey Gingersnaps

TAKE one pint of honey, one teaspoonful of ginger, and one teaspoonful of soda dissolved in a little water, and two eggs.



SURPRISE ROLLS—Make a rich biscuit-dough of one pint of flour, one teaspoonful of baking-powder, two tablespoonfuls of shortening, milk enough to make short dough; mince and season highly cooked chicken, binding with butter; form in small finger-sized rolls; wrap each with dough; bake in hot oven; serve cold with stuffed olives. These rolls are especially dainty for a luncheon.

Mix all, and work in all the flour possible, roll very thin, and bake in a moderately hot oven. Any flavoring extracts can be added, as desired.

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Beets

BEETS are among our most useful vegetables, since they may be had all through the summer, and may also be stored in good condition for winter use. Sometimes beets are cut in small pieces, after boiling, and served with white sauce, but the most common, as well as the most palatable, way of serving them is with butter.

Wash the beets, being careful not to break the skin. Put into a stew pan and cover generously with boiling water, and boil until tender. Young beets will cook in one hour. As the beets grow old the time of cooking must be increased. In winter this vegetable becomes so hard it may require four or more hours of steady boiling to soften it. It is then only suitable for pickling in vinegar after being thoroughly boiled. When the young beets are cooked, take them from the boiling water and drop them into cold water. Rub off the skin. Cut the beets in thin slices and season with salt and butter. Serve at once.—Maria Parloa.

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Citron Cake

ONE pound of flour, one and one half pounds of sugar, one pound of butter, twelve eggs, two pounds of citron sliced thin, one large or two small cocoanuts grated, two pounds of blanched almonds cut fine and one teaspoonful of mace. Cream the butter and flour, beat the sugar with the yolks of the eggs, add the stiffly beaten whites, then add all to the butter and cream, stir in the citron and almonds, and lastly the cocoanut.

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Orange Fritters

PEEL two oranges and slice in thin pieces. Dip in a batter made from one cupful of flour, one rounding teaspoonful of butter, one tablespoonful of sugar, a pinch of salt, the yolk of one egg and one half cupful of milk. Fry in hot fat, and serve with powdered sugar or the following sauce: Beat the yolks of two eggs with one half cupful of sugar. Add the grated rind and juice of half a lemon, two teaspoonfuls of vanilla, and cook over hot water. Stir vigorously until it thickens, and cover with the whites of the eggs beaten stiff. Serve at once.

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Household Hints

ROAST BEEF—Salt and pepper the beef roast as needed, then place in a skillet or pan and brown it real good in a hot oven. Take out and boil it over a good fire until tender. The flavor will be much richer and the meat much juicier than if boiled and browned afterward.

BREAKFAST MUFFINS—Take one pint of sour milk, one tablespoonful of melted lard, one teaspoonful of soda, one teaspoonful of baking powder and one half teaspoonful of salt. Mix thoroughly and stir in enough flour to make a thick batter. Bake in muffin pans in a hot oven, and they will be light and fluffy.

BROWN SWEET POTATOES—After sweet potatoes have been boiled until tender they may be quickly browned by putting them into a very hot skillet with a little melted butter and sugar. When browned on one side turn and brown on the other, and in a very few minutes they will be ready to serve.

CLEANING PAINT—A small quantity of kerosene poured into the water will be helpful in washing painted woodwork.

FOR A BAD COLD IN THE CHEST—Make a mixture of equal parts of kerosene, turpentine and lard, adding a few drops of camphor. Warm in a pan and dip into it a flannel cloth large enough to cover the chest, and apply as hot as the patient can bear, placing a light cotton cloth over the flannel, so the grease will not soil the clothing. The flannel can be secured to the patient's garments by safety pins. In severe cases it is also beneficial to apply the remedy to the back between the shoulder blades.

TO REMOVE INK STAIN—Apply camphor and a little lard, then wash out in soapy water.

LIQUID YEAST FOR LIGHT BREAD—Boil four good-sized potatoes, then mash and add one quart of water, two tablespoonfuls of sugar and one of salt. To this mixture add a cake of Yeast Foam. Let it stand over night and it is ready for use. Before making bread take out one teacupful of the liquid and pour into a self-sealing jar. Set this away in a cool place for next time. Then stir the remaining liquid thick with flour and proceed as with other light bread. When ready to bake bread again, go through the same process, with the exception that the liquid yeast from the jar is added instead of the Yeast Foam.

MRS. W. D. NEALE.

SPINACH WITH EGGS—Boil cleaned spinach in a deep kettle having one cupful of water in it, cover, and cook until tender; drain, and chop fine; season with salt, pepper and melted butter. From hard-boiled egg whites cut semi-circles, and with a pinking iron form decorations as illustrated. The small end of an open-top thimble will form the buttons. Butter a cone-shaped basin or mold and place the egg whites on the sides of the mold, then carefully fill with the minced spinach, packing well at the sides. When ready to serve invert on a hot plate, and decorate the top with the pinked egg white and a button.

The Country Lady's Help Problem

EVERY summer the cry goes up from harvest fields and meadows and orchards for more help. Crops perish, men are overworked and farmers discouraged because labor is so scarce. Helpers dictate their own wages and work as they please, simply because they know the farmers are in their grasp. Every year new machines are designed to save work, and every year sees more machinery sold everywhere. In spite of all the new and improved contrivances, there is still a wide field for workers everywhere in the country at good wages.

The ladies who live in the country do not lift their voices in lamentation over the dearth of helpers, because they seem to think their case is hopeless. The husband may capture a band of college students or persuade some store-box loafers to help him save his crops, but who ever heard of the wife being able to hire a wandering female to help with the work? There are many housekeepers who would be glad to pay good wages and make a good home for girls who would help, but there are no girls available. The girls in the country who go out to service all want places in town, and no one has ever yet discovered a town girl who was willing to work in the country. In many of its aspects the country-help problem seems impossible to solve.

Even in work that is hardly to be classed as belonging to the housekeeper it is hard to get help. I have known ladies to wait weary weeks for a paper-hanger to condescend to be brought out from town, given good meals and then taken back in the evening, besides receiving good wages into the bargain. Often the country housewife hangs the paper herself rather than put up with the haughty workers from town. It is the same way with small jobs of painting, varnishing and repairing. Last spring a lady in the country had to use hard water for washing eight weary weeks because the tinner kept putting her off. It didn't pay to drive four miles to put up a few feet of spouting, he said. They would have to wait until he had some more work in the neighborhood. So they waited; but when he finally arrived he charged extra in spite of the fact that he had a whole day's work there, and they were glad to pay him to have the rain water.

In sickness a trained nurse may usually be had by applying to a city hospital, and while the wages look very high, yet it is money well invested, since the mother of the family is apt to overwork herself in the attempt to do the housework and nursing. In some homes where typhoid fever goes through the entire family the services of an intelligent trained nurse in the start might have saved sickness and expense. In typhoid fever always have a trained nurse if you can possibly get her, not only for the sake of the patient, but for the rest of the family. Sometimes it is cheaper and safer to remove the patient to a good hospital at once, though many people are opposed bitterly to hospitals.

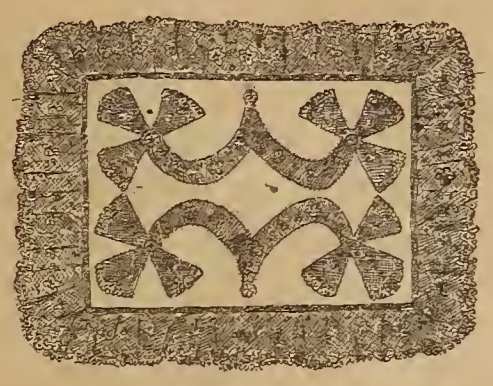
In many neighborhoods the kindly fashion of helping each other prevails among the housekeepers, and it really seems to be the only solution to the help problem at present. Besides relieving the burden of extra work in thrashing, corn shredding, wood sawing and kindred tasks, it promotes a spirit of friendliness that is foreign in cities. It teaches the folly of gossip and unkind words, for the busybody soon finds herself left out of the little circle, and it sweetens and broadens life by the interchange of ideas and methods. Three or four happy ladies can accomplish many times as much as a hired helper, besides having a good time as they pare potatoes, set tables, bake pies and prepare food for a dozen or two hungry men.

Sometimes housekeepers avail themselves of labor savers in small ways by sending bed spreads, sheets, pillow slips and all flat pieces to the laundry once in two weeks. All flat pieces are washed and ironed for the same price charged for washing things like underwear, shirt waists and things that will not go through the mangle. In this way the heavy table linens, towels, sheets, spreads and such things are off the housekeeper's hands in the hot days of harvest at a very moderate price. The wise housekeeper also buys bread at the town bakery as often as possible, and cookies from the factory, when she is hurried and worried with summer work. A great many ladies are wisely canning large jars of fruit and fruit juices in summer, to be made later, when work is not pressing, into jams and jellies. Some are omitting from their list such preserves as raspberry, strawberry and blackberry jams and jellies and using instead only the fall fruits when time is not at such a premium.

There are times when sickness and accidents demand help, and it must be obtained at any price, but more and more the ladies on the farms are learning to avoid sickness by not working too hard, by eating good substantial food and by taking life as easy as possible. This can be done by helping each other during busy times and lopping off all unnecessary cooking, cleaning and sewing during the busy seasons. HILDA RICHMOND.

An All-Over Lace Pillow Cover

THE pillow cover here sketched seems to be almost entirely of lace, the large medallions and shaped bands apparently taking up most of the inside, while an all-lace flounce goes about the outside. These medallions may be bought or are formed by cutting the three fan-shaped pieces from a wide lace edging and joining them at the center by a round lace medallion, the edges of the lace being neatly and firmly joined with fine linen thread of the shade of the lace, which, in this case, happens to be a deep cream. The double curves are made by joining two insertions so that they match, and form the pointed effect. This is achieved by cutting a long triangular piece away at each corner of the insertion where they are to be joined. A round medallion is then stitched to the point. To give the required curve the insertion must be drawn in a very little on the outer side.



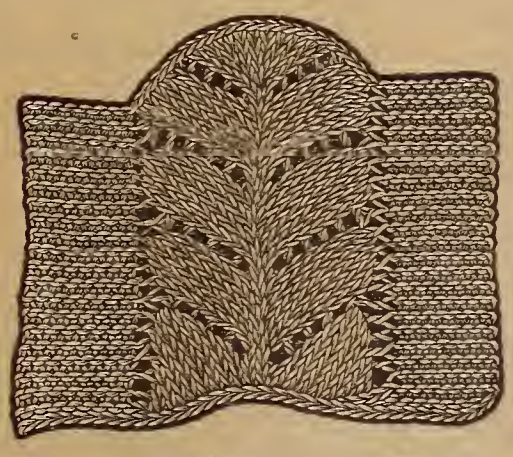
LACE BANDS AND MEDALLIONS FORMING VERY RICH EFFECT WITH DEEP LACE FLOUNCE

Greek-Key Pattern in Lace-Inserted Pillow Cover

A HANDSOME sham or pillow for the baby's carriage may be made from lawn and lace, as indicated by the sketch. The design is what is known as a Greek key. Outline the pattern on the lawn with a blue pencil, being careful to mark where the bands cross. If you are fairly careful, no great difficulty need be anticipated. At the corners, where the insertion must be dawn in a little, it should be stitched flat. A band of hemstitching frames the design, a flounce of lawn, lace and insertion completing the cover.

Beware of the Use of Tin

NEVER make lemonade or other acidulated drinks in a tin bucket, nor allow them to stand in a bucket of tin; and in case of canned fruits or fish, immediately upon opening the can turn the contents out upon an earthenware plate or into a dish that is made of earthenware or glass. Fruits in hermetically sealed cans, if properly prepared, generate no poison. As soon as opened the action of the acid on the tin, with the aid of the atmosphere, begins, and in a short time the result is a poison. This brief treatment of the question should be remembered by every one, and its instructions followed. The general press also should aid in disseminating this simple knowledge.—Popular Science News.



KNITTED STRIPE FOR COUNTERPANE

Knitted Stripe for Counterpane

ROSE-LEAF DESIGN

ABBREVIATIONS used: K, knit; o, over; n, narrow; p, purl.

Use No. 10 knitting cotton and two coarse steel needles.

Cast on 31 stitches, and knit across plain.

First row—K 7, o, k 3, o, n, (p 1, n) three times, o, k 3, o, k 7.

Second row—K 7, p 6, (k 1, p 1) twice, k 1, p 6, k 7.

Third row—K 7, o, k 5, o, k 3 together, p 1, k 3 together, o, k 5, o, k 7.

Fourth row—K 7, p 8, k 1, p 8, k 7.

Fifth row—K 7, o twice, k 1, n, p 1, n, k 1, o, k 3 together, o, k 1, n, p 1, n, k 1, o twice, k 7.

Sixth row—K 8, p 3, k 1, p 7, k 1, p 3, k 8.

Seventh row—K 7, (o, k 1) twice, n, p 1, n, k 3, n, p 1, n, (k 1, o) twice, k 7.

Eighth row—K 7, (p 5, k 1) twice, p 5, k 7. You will now have 31 stitches left on needle.

Begin again at first row.

These stripes make pretty chair tidies or stand covers made with No. 14 or 16 knitting cotton, or with coarse thread. The ends of tidy or cover may be finished with fringe. MRS. J. R. MACKINTOSH.

Rooting Slips

SLIPS of all kinds root best when the wood is half ripened. We find it in this condition in June and July. Then the slips that are rooted at this time are large enough for the winter garden. The geranium slips rooted then are ready to bloom in the late fall and early winter. In rooting slips, break them off at a joint, leaving a little heel to them, and always break instead of cutting. Place two or three together in ordinary soil—either in the corner of boxes or in beds—with other growing plants, turn a glass jar or tumbler tightly over them, so as to exclude all air, and keep moist all the time. Leave them this way for three weeks or a month, at the end of which time they will usually be well rooted, and should be allowed to receive the air gradually, by tilting the jar a little. Leave them this way for a week, then change to small pots of rich soil, and shift to larger ones as they fill these with roots. Slips of geraniums, tea roses, abutilons, bouvardia, lemon verbena, hydrangea, heliotropes and fuchsia can all be rooted easily in this way. It is most important to keep the soil moist and the slips where they receive the full rays of the sun. The sand cannot be kept moist in the sun, so I use sand alone for rooting cactus slips.

PILLOW SHAM TRIMMED WITH VALENCIENNES LACE, THE INSERTION FORMING A GREEK-KEY PATTERN IN THE CENTER

The oleander can be rooted best in a bottle of water hung on the south side of the house or a post, and cotton placed around the mouth of the bottle, so as to exclude all the air. Fill up with fresh water often, as it evaporates very rapidly in the sun. A lump of charcoal in the bottle will help to keep the water sweet.

Tea roses can be placed in a trench in the fall, and glass jars turned over them; then, as cold weather approaches hoe up earth so as to come almost to top of the jar, and leave them this way until spring, when you will have a nice lot of rooted roses, ready to grow right off. Many climbing roses have been rooted in this way. It is more important with the rose than anything else to break off the slips, leaving the small heel, and they are so much more apt to root. LAURA JONES.

Candles

ONE who has not noticed can hardly appreciate the difference in the temperature of a room when using lamps or candles as a means of illumination. Several years ago I experimented along this line, and found that two ordinary candles furnished sufficient light for retiring, and did not perceptibly affect the temperature of the room, while one of the common-sized oil burners using a round wick burning for the same length of time raised the temperature several degrees, besides attracting a swarm of insects by its brilliant glare. Since then, during the sultry weather, we have lighted our bedtime candles as in the picturesque days of old, and retired to a cool and undisturbed chamber. ALICE M. ASHTON.

To Remove Dust from White Goods

USE five cents' worth of oxalic acid dissolved in one scant quart of soft water, then dip the rust spot only in the liquid. As the acid is apt to eat a hole if left long, just as soon as the rust disappears rinse well. Or it may be necessary to dip several times, as it should not be allowed to stand more than five minutes after dipping each time before rinsing and dipping again. Keep out of the reach of children.

Ink can be removed, if taken when first spilled, by washing in sweet cream until all is out of the linen. For carpets common salt is very good. Sprinkle or pour on until the top stays white and leave until perfectly dry, then sweep off. This is very good. MRS. A. W.

Lady Margaret's Bread

INTO three pints of sifted flour cut up one tablespoonful of butter and one of lard; add one light teaspoonful of salt, three tablespoonfuls of yeast, and mix with new milk until of the consistency of roll dough. Do this at night. The next morning flour the biscuit board well, roll out the dough about three fourths of an inch thick, and cut into biscuits with a dredging-box top. Cover with a cloth, and let them rise until twenty minutes before breakfast, then bake in a rather quick oven. This makes a delicious bread.

Some Good Things Our Friends Say

"I will say I have been a subscriber to the FARM AND FIRESIDE for many years, and our family thinks it grows better every year. There was a club of twenty gotten up this winter near here, so that it is in a number of homes, and has the reputation of being the most reliable farm paper printed."—Mrs. I. E. Stinchcome, Michigan.

"I have been a reader of the FARM AND FIRESIDE for more than a score of years, and its coming is always eagerly looked for."—B. C. Benedict, Illinois.

"I think it is the best paper for the money I ever saw, and I mean to try to put it in other homes."—Mrs. Mary E. Sims, Tennessee.

"We are well pleased with your paper and can but think most people who fail to renew do so through carelessness, rather than displeasure with the paper. Our son, thirteen years old, early last spring secured one of your coupon books and filled it in one day, but had to walk several miles. However, he got the watch, and has been very much pleased with it."—Geo. G. Hurd, Washington.

"Dear Old Friend:—Enclosed you will find twenty-five cents in your coin card for the renewal of my subscription for another year, which makes seven years I have taken the best family paper I know of. During the past six years I have sent in several different subscriptions for other parties. I have done this for the reason that I felt it my duty to help so good a paper to reach new readers. I lay no claim to being an agent or solicitor, but always put in a good word for FARM AND FIRESIDE."—Mrs. M. A. Birdsell, Texas.

"We have been reading the FARM AND FIRESIDE for about twelve years and we would be lost without it. Your paper is a welcome visitor among the children as well as the grown people. Our mail box is about one mile from the house, but FARM AND FIRESIDE is never left in it over night."—George Gatts, West Virginia.

"I have read this great paper for eleven years, and during this time have received many helpful inspirations from its pages; many an otherwise dark day for me has been illuminated, its gloom been scattered like frost before an April day. I shall continue to read this great paper until I lay down my tools for the last time."—H. J. Grabbard, Kentucky.

Keep the boys and girls busy. Encourage them to help others, help us and help themselves by getting subscriptions for FARM AND FIRESIDE.

Of Curious Interest

Illustrated Contributions to this Department Are Invited, and Those Accepted Will be Paid For

The Indians, Past and Present

WHAT was the greatest number of Indians in America when they were unmolested and at the height of their power has never been definitely determined. Authorities differ, some claiming that the number could not have exceeded one million, while others assert that it could not have been more than 800,000, and still others contend that the number was considerably less. The red men in the United States to-day are said to numbe: 284,000. Nearly all the tribes are west of the Mississippi; in fact, most of them are beyond the Missouri, there being 156 reservations in all. In the northwest section of New York State there are 5,000 Indians living on eight different reservations. It is estimated that there are 159.000 Indians who wear citizen's dress in whole or in part. and 70,000 who can read and speak English. Of late years the Indians have been making quite a strong religious showing, having 390 church buildings and a total membership of about 40.000.

Among the different tribes there are many picturesque and interesting ones, none the less so being the Pueblos, a picture of two members of which is printed on this page. The Pueblo has lived a sedentary life for centuries. The fact of their having lived on the same site for centuries gives them a distinct individuality. Writing in the "Michigan Farmer," Frank J. Phillips says that the definite, historic life of these people commences with the advent of the Spaniards. The close life in the past and the need of protection from common enemies made each settlement, or pueblo, a distinct unit. The people lived in communal houses, utilized common fields to a large

A HOUSE THAT GREW

The body of the house is formed by a section of one of the giant California redwood trees. It owes little to the human architect except the roof, windows and floors

extent, and depended in a high degree upon a common food supply.

Most of their exact form of government has never been widely known outside of their own tribes. It is, however, known that each tribe has a king, governor, war chief and council. The king and the governor are the men of greatest importance and have clearly defined powers, which power in most part is limited by the council. Curiously enough, the kingship is hereditary, while the governor is elected annually. In the old days, when enemies were numerous, the war chief was a man of great importance. To-day his most important duties seem to lie in exercising control over hunting expeditions, the common pasture lot and the general care of live stock. The Pueblo Indians are with us to stay, even though their numbers are few. They are living lives characterized by intelligence and foresight, modernized by improvements in agriculture, hygienic living and special education. In all they form a wonderful link between the hazy past and the hustling present, giving a peculiar interest to the country as a whole in their history, local developments and mode of life.

◈

The Coin of the Colonies

IN THE year 1652 the general court of Massachusetts established a mint in Boston, and the first coinage of silver in the American colonies was recorded. Silver shillings, sixpence and threepence were made, and all bore the emblem of the pine tree. They were of the same fineness as the English coin of like denomination, but of less weight. This mint continued in operation for thirty-six years. After a while the "royal oak" was substituted for the pine tree, in order to conciliate King Charles II., who disliked this minting by a colony. All the above-named coins bore the date of 1652. But twopenny pieces were added with the date of 1662. No other colony had a mint until 1659, when Lord Baltimore caused shillings, sixpence and groats to be coined for use in Maryland. James II. issued ten coins for circulation in America, though few of them found their way hither. In 1722, 1723 and 1733 copper coins were minted in England with the legend "Rosa America." There were also copper halfpence issued in 1773 for circulation in Virginia, and in 1774 silver shillings were added. Florida and Louisiana had colonial coins of their own before they became parts of the United States.

CATCHING EVIL SPIRITS WITH COBWEBS

Superstitious Buddhist mask and dance festival held annually by the populace of Leh, in Tibet, a town away above the clouds

◈

Still the World Goes On

DREAD of the supernatural is the universal fear, declares the Kansas City "Journal." Classed as supernatural are many phenomena of great and small degree for which men have a vague but distinctly tangible horror. Our advanced civilization has done much for the human race, but it has not eliminated superstition or credulity.

We have the recent ridiculous panics in several quarters, caused by the report that a comet was headed for the earth and that when this burning messenger of destruction would hit this poor old globe every living thing and every monument of man would disappear, in a flash, into chaotic gases.

During the past few years there have been increasing evidences of uneasiness within the earth that were ominous warnings of more serious disturbances. Volcanoes that have been considered almost extinct have burst forth in violent eruption. These funnels of fire, lava and vapor have appeared in widely remote points upon the earth's surface and they have created havoc that has not been known from similar causes within the memory of living men. Earthquakes have shaken down buildings, destroyed lives and affrighted thousands. Tidal waves in many seas have injured the traffic of the world and laid waste magnificent harbors. Following these under-sea convulsions the peaks of mighty mountains have risen to form islands where islands were never known before. In all things Nature appears to be on a jamboree that has struck terror everywhere.

But why should there be so much alarm? We know that for twenty thousand years at least, our earth has spun along on its merry sidereal race track without having been singed by a passing comet.

It is the sheerest folly to assume that the earth is about to explode, or that universal destruction of any sort is in contemplation by Providence.

Worry and fear will not avert the destined manifestations of Nature, be they the crashings of pendant worlds or ptomaine poisoning. So let human beings live on in supreme confidence that all will be well unto the end of the uttermost reaches of time.

◈

Red Costumes for Wedding

THE latest Paris sensation is a dazzling red bridal costume, and the bridesmaids and pages are costumed in like color. A brunette is said to have been the daring originator of this fashion, and her beauty was so enhanced by this brilliant setting on her wedding day that the old, time-honored bridal white has received a severe jar.

PUEBLO INDIANS POSE FOR THE PHOTOGRAPHER

Manicurist in Packing House

A PACKING company at Kansas City has hired a manicurist to clean the nails of the girls who pack chipped beef, ox tongue and other delicacies into tin boxes. This is the result of the recent packing-house exposure. One girl is excused at a time, and she goes to the manicurist, who works upon her hands, keeping the nails trimmed and every part of the hand scrupulously clean. Of the seventy-five girls employed in this establishment each must have her hands manicured every working day.

◈

Some Oddities About Sleep

SIR PHILIP SIDNEY called sleep "the poor man's wealth;" but it is more, it is the wealth of both poor and rich. Notwithstanding this, there have been a great many men who have gone through life, reaching old age, with a small average number of hours of sleep.

Frederick of Prussia and Napoleon usually devoted only three or four hours to sleep out of the twenty-four, and both of these men often went for remarkably long periods of time without so much as closing their eyes. Bishop Taylor never took more than three hours of sleep a day, and Richard Baxter considered four hours out of the twenty-four enough for any man. Seven hours is the time considered sufficient to be spent in sleep by the average man.

One of the modes of torture practised by the Chinese was that of putting some of their victims to death by preventing sleep. Guards were stationed in relays to keep the prisoner awake. Death came as a relief usually in from ten to twenty days.

The use of certain sets of muscles does not hinder sleep. Couriers on long journeys often have been known to sleep in the saddle. The soldiers of Sir John Moore during the retreat to Corunna slept steadily while they marched. It is also said that Dr. Franklin slept for nearly an hour while swimming on his back.

CARPETS THAT GREW

In Oratava, Teneriffe, the Corpus Christi procession passes over floral carpets with which the streets on the route are covered during the festival. Beautiful tapestry designs are imitated with fresh blossoms

The following novel calculation has been made: Suppose one boy ten years of age determines to get up at five o'clock every morning. Another boy of the same age determines to rise at eight o'clock. If they both live to be seventy years old, the first will have gained over the second during the intervening period of sixty years sixty-six thousand hours, or just seven and a half years.—New York Tribune.

◈

Uncle Sam's Sweet Tooth

ACCORDING to government statistics, America ate three hundred million dollars' worth of sugar plums last year. Every citizen consumed one half of his weight in sweets during 1906. Honey, maple sirup, sorghum and molasses are not counted, but the total amount of the sugar consumption, without the addition of such liquids, reached the impressive figure of six billion five hundred million pounds.

The cane product of the Louisiana, Texas and Florida plantations furnished some eight hundred million pounds, and the beets of Western states added approximately five hundred million pounds of native sweetness. To this fifth of the total another fifth comes from our islands. But for three fifths of our sugar we must look to foreign markets. Of this fully eighty-five per cent is cane sugar from the tropics. The remainder is beet sugar, chiefly from the fields of Germany and Austria-Hungary.

Madison Square Fashions

By Grace Margaret Gould

Easy-to-Make Smart Designs for Every-Day-Wear Summer Clothes

No. 922—Tucked Lingerie Waist with or without Yoke

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medium size, or 36 inch bust, four and three fourths yards of twenty-two-inch material, or three and one half yards of thirty-six-inch material

THE gowns illustrated on this page emphasize the fact that good lines and a smart style do not belong exclusively to elaborate costumes. These gowns will all be approved by the well-dressed woman, yet in design each is extremely simple. Instead of making up the skirt-and-coat suit in linen, cotton serge or panama, a very new idea is to use unbleached muslin. Here's economy for you. The shirt-waist suit can be made in two different ways, according to the individual taste of the wearer. The yoke may be used with or without the extended tabs, and the skirt may have the bands with the buttoned tabs omitted, if one prefers.

No. 925—Shirt Waist with Yoke Extended in Tabs

Pattern cut for 34, 36, 38 and 40 inch bust measures. Quantity of material required for medium size, or 36 inch bust, five yards of twenty-two-inch material, or four yards of thirty-six-inch material

No. 926—Seven-Gored Band-Trimmed Skirt

Pattern cut for 24, 26, 28 and 30 inch waist measures. Length of skirt, 39 inches. Quantity of material required for medium size, or 26 inch waist, eleven yards of twenty-two-inch material, or seven yards of thirty-six-inch material

No. 927—Tucked Housework Dress

Pattern cut for 34, 36, 38 and 40 inch bust measures. Length of skirt, 40 inches. Quantity of material required for medium size, or 36 inch bust, twelve yards of twenty-seven-inch material, or nine and one half yards of thirty-six-inch material

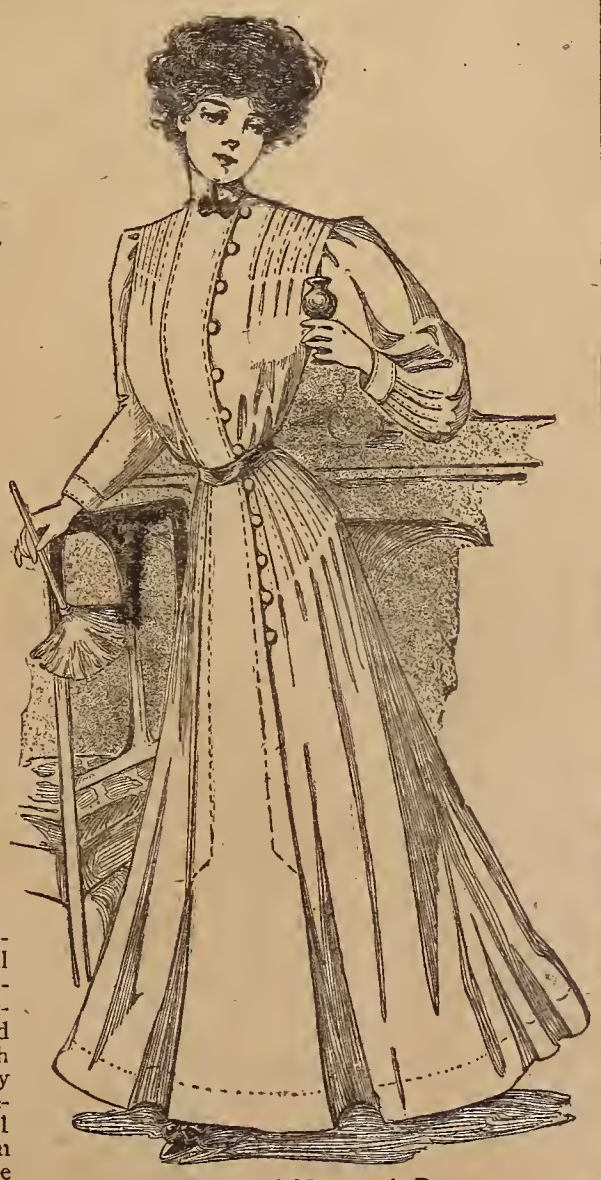
This good-style housework dress can be made two different ways—with tucks in front, on the shoulders, on the sleeves and on the skirt, or the dress may have gathers instead of the tucks. The shirt waist and skirt are both included in the one pattern for ten cents. Use for this dress any material that will launder well, such as linen, madras, lawn or dimity. The gown fastens with pearl buttons.

No. 923—Loose Coat with Pointed Revers

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medium size, or 36 inch bust, three yards of thirty-six-inch material, or two and one half yards of forty-four-inch material, with three eighths of a yard of velvet for trimming

No. 924—Plaited Five-Gored Skirt

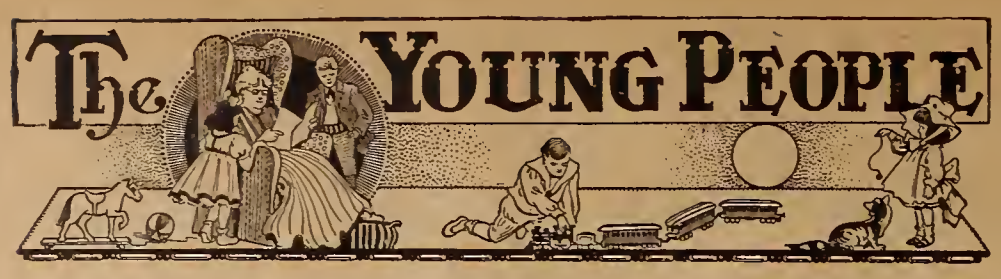
Pattern cut for 22, 24, 26 and 28 inch waist measures. Length of skirt, 39 inches. Quantity of material required for medium size, or 26 inch waist, six and one fourth yards of thirty-six-inch material, or five yards of forty-four-inch material



No. 927—Tucked Housework Dress

How to Order Patterns

TO SIMPLIFY the art of dress-making, and to be of practical help to our big FARM AND FIRESIDE family, we will furnish a pattern for every design illustrated on this page. The price of each pattern is ten cents. The money should be sent to the Pattern Department, FARM AND FIRESIDE, 11 East 24th St., New York City. In ordering, be sure to mention the number and the size required.



Every Boy His Own Carpenter

BY JOSEPH H. ADAMS

THE boy who has no taste for carpentry, is he a boy in every sense of the word? And the boy who has, is he not? Once proficient in the art of cutting, joining and fastening wood timbers and boards, and in the care and use of tools, a boy is pretty well fitted to handle sturdier matters that demand even more practical knowledge and experience.

On the subject of the tools themselves it should be enough to say that they should always be well taken care of and never misused. By employing a chisel to act as a screw driver, or trying to saw through a nail in a piece of wood, or boring into other substances than wood with sharp bits—all this is careless and foolish, and the tools, inanimate though they are, resent such maltreatment by growing dull and useless.

JOINTS

It is a good plan to learn first how to cut wood and make joints, remembering always the name of the wood you are cutting and the name of the joint you are making. When cutting across or with the grain of the wood, never *force* the saw, but push it down so that the particles of wood that are in the way will be cut; for the teeth, if properly sharpened, will act freely without being driven. Give only the necessary pressure to make the saw act. If the saw is forced it becomes unmanageable, and in nearly every case the result is bad.

Fig. 1 shows a lap joint, made by cutting away one half of the wood on opposite sides of the ends which are to be joined, so that when fastened the wood will appear as a continuous piece. A lap joint is a good joint for corners and angles where a miter box is not available.

Fig. 2 shows a beveled lap joint. This is a strong and much-used one, especially for large timbers and square posts. Glue, nails, screws and wooden pegs are variously used for fastening these joints.

Fig. 3 shows a mortise and tenon. The hole in the upright post is the mortise, and the shaped end of the board at right angles to it is the tenon. The tenon is made to fit the mortise snugly, and a nail or wooden pin driven in from the side of the post holds the parts together.

Fig. 4 is a miter, and is usually made in a miter box, where the inner edges of the wood can be accurately cut to any angle. This is the joint commonly used for picture frames, and a right angle is the one usually cut.

A TOOL CHEST

A good tool chest is an important thing to possess. It is possible for almost any boy to make one, so we will let this be the first piece of work. Take care and pains to make it well. It will last a long time, and you will always remember it as your first real attempt at carpentry. It can be made of common pine, whitewood or ash. Cut one board twelve inches wide and ten feet long, and another sixteen inches wide and five feet long. These boards should be three fourths of an inch thick and planed on both sides. Cut some strips one half inch thick and four inches wide, for the top and bottom bands. Cut two pieces of board thirty inches long and twelve inches wide for the front and back, and two pieces fourteen and one half inches long by twelve inches wide for the ends. Now cut the five-foot board in half, making two pieces thirty inches long and sixteen inches wide, to be used for the top and bottom. Fasten the front, back and ends together at the edges, then secure the bottom in place. Of the strips one half inch thick and four inches wide make a band around the lower edge of the chest. Before applying it, cut a bevel on the upper edge with the plane; see illustration. Nail a similar band around the upper edge of the chest.

To make the cover, fasten a strip around the under edge of the board, corresponding in dimensions to those of the chest. These strips should be of three-fourths-inch wood and one and one fourth inches wide, making the total thickness of the cover just two inches. A band of the thin wood two inches wide should be fastened around this top, so that when attached to the chest with hinges it will be the same outside size as the upper band on the box itself. A lock and handles fastened in the proper position will finish the box part.

To complete the chest, two runners can be attached to the inside of the ends, and a tray or two, with divisions, can be made to slide back and forth on them. One of these trays can be seen in the illustration, and a good proportion for them will be four inches wide and three inches deep, with the division boards arranged the right distance apart, so that bits, files, chisels and odd tools can be held in them. Do not put nails, screws or tacks in the trays, as they gradually overrun the chest and keep it in disorder.

If the woodwork of the chest is of pine or whitewood, several successive thin coats of paint will give it a good finish; but if it is ash or other hard wood, two or three coats of varnish will lend it the best appearance.

To relieve the hinges from the strain, and prevent the cover from going back too far, it would be well to attach the ends of a short piece of chain to the inner edges of the cover and chest, as shown at the right side of the illustration.

Photo by Will G. Helwig

THE RIVAL

SMALL WORK BENCHES

Of the two work benches illustrated, the one on the left represents a bench fourteen inches high, twenty-four inches long and twelve inches wide. The legs should stand eighteen inches apart, and the ends of the top project three inches over them. Side aprons three inches wide can be placed in the position shown, and the woodwork, which can be of boards seven eighths of an inch in thickness, should be securely fastened together with one-and-one-half-inch flat-headed iron screws, and driven in about as shown in the illustration. In the middle of the top bore two holes one inch in diameter and three inches apart from center to center, and with a compass saw cut away the wood between them, and smooth the sharp edges with a piece of sandpaper. A good "finger hole" will be the result, which makes it easy to lift and handle the bench.

The one on the right represents a bench twenty inches high and twelve inches square. To make it, obtain two pieces of board twelve inches wide and nineteen inches long, also two pieces ten inches wide and nineteen inches long. From the lower end of each one cut out a long V, and fasten the edges together with screws. Secure the top on with screws also. In the middle of the top cut a "finger hole" as directed for the other bench.

To finish the benches nicely give them several successive thin coats of dark olive green, slate or brown paint.

A SHOE-BLACKING BOX

Every boy should possess his own shoe-blacking box. The illustration shows a box that every boy can own, because he can make it so easily himself.

Get four pine sticks eighteen inches long and two inches square, for the legs. From one end cut away two sides to the depth of one inch and six inches long, as shown in Fig. 5. Then get four pieces of clear pine one inch thick, six inches wide and sixteen inches long, for the sides. Fasten them securely to the top of the legs with screws, as shown in Fig. 6. and to the under edge of the sides fasten the bottom of boards one half inch thick.

From wood one inch thick cut eight small angle brackets, and fasten one in each corner formed by the bottom of the box and the side of a leg. These will strengthen the frame of the box and prevent it from racking.

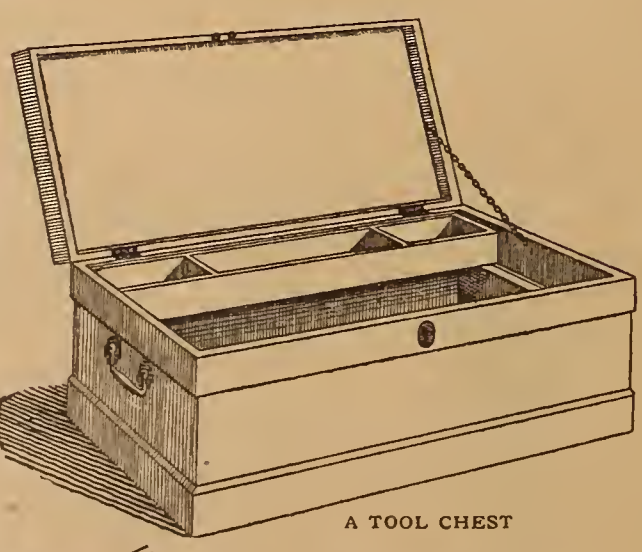
With a thin piece of board make a division inside the box at the back, to hold brushes, and divide it again with a small compartment, for a box of blacking. The block to hold a box of blacking can be made by boring a hole in it large enough to accommodate the box, and to prevent it from falling through, tack a piece of sheet iron or tin to the under side.

A cover is then to be made, and fastened to the rear edge of the box with hinges. Two pieces of tongued and grooved boards can be bound together at the edges with battens one or two inches in width, as shown in the illustration, and long slim screws or steel-wire nails will furnish the best means of fastening them on. A piece of chain should be attached at the ends with staples—one driven into the under side of the cover, the other to the inside of the box, as shown in the illustration. This will prevent the cover falling back too far when the box is in use, and will also relieve the hinges from the strain that would otherwise occur.

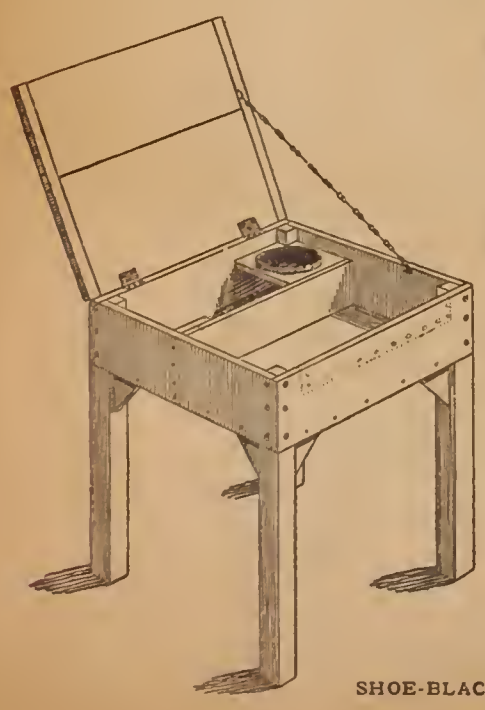
To finish this box nicely and give it a good appearance, it can be treated to several successive coats of olive-green paint on the outside, and to one or two coats of asphaltum varnish on the inside.

Over the front edge of the box, and in the position designated by the dotted line, a strip of zinc or brass can be fastened with brass-headed upholsterers' tacks. As this is the edge that will be used as a foot-rest while blacking shoes, it would soon become chafed and the wood worn away, so the brass or zinc will prevent the wearing, and always present a good and clean appearance.

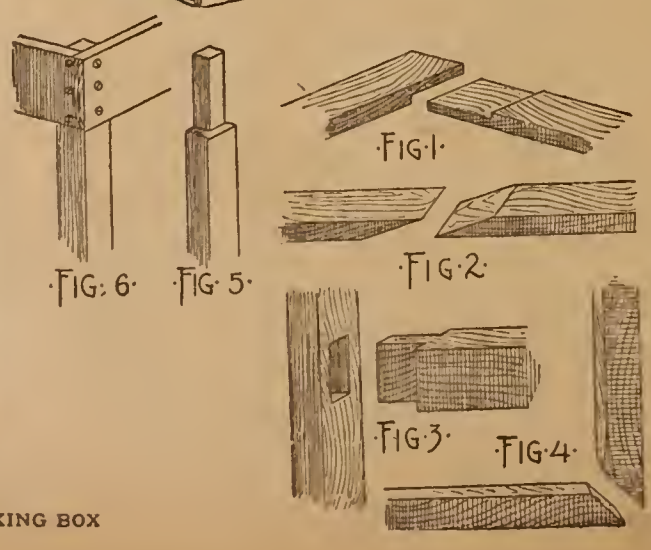
This article will be continued in the next issue, and will include directions for dovetail, tongue and groove, rabbet and groove, rabbet joints and beveled edge, besides simple and full instructions for making an excellent dog house, rabbit coop, dove cote and bird house, three-legged stool, tool rack and other useful things which are at the same time splendid practise with tools and materials for a boy to make.

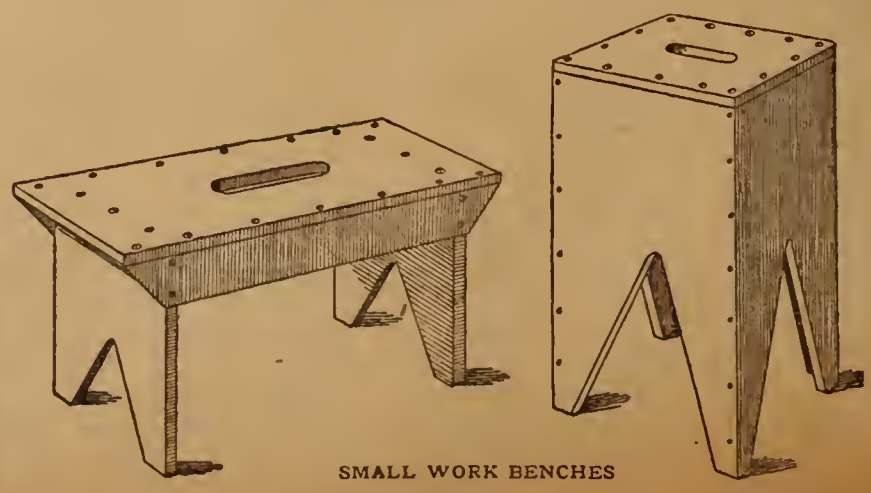


A TOOL CHEST



SHOE-BLACKING BOX





SMALL WORK BENCHES

A Game for the Senses

BY FRANK H. SWEET

ALL the guests are seated around a large table, and the master or mistress of ceremonies informs them that their five senses are to be tested, and prizes given to those who can prove theirs to be the keenest.

First comes the test of sight or observation. All are blindfolded and a number of articles are thrown haphazard upon the table—gloves, handkerchiefs, penwipers—anything and everything will serve the purpose. The bandages are then lifted for a single moment, when the order is given to pull them over the eyes again. The table is then swept clean of all the things, the bandages are then removed, and each guest is provided with pencil and paper and must write a list of the articles noticed during the momentary glimpse permitted. The one whose list is the longest receives a prize for the best sight or quickest power of observation.

Next comes the test of smell. The bandages are resumed, and in turn vinegar, cologne, kerosene, lavender water, bay rum, orris root, smelling salts, oranges, camphor, paregoric and apples are presented to the noses of the company, who may write down the names without looking on, making the list more legible when the bandages are removed.

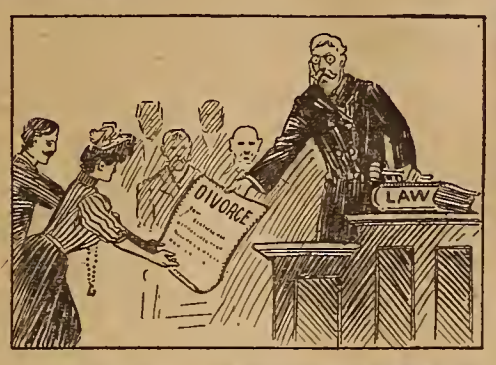
In testing the taste, allspice, raw oatmeal, horseradish, chocolate, almost anything may be offered that is not too unpalatable. It is well to have many familiar things and only a puzzling one now and then, since pleasure, and not perplexity, is the chief object of the game.

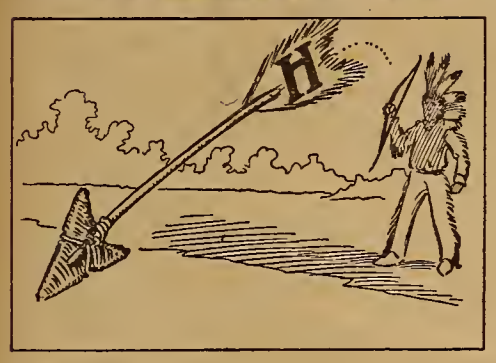
For the hearing, different notes on the piano may be struck, and the music-loving ones will readily name them correctly. The finger dipped in water and passed around the rim of a glass makes familiar music. The ringing of a silver and of a brass bell, the tinkle of ice in a glass of ordinary water and the dull click it makes in a glass of sparkling mineral water, the sound of metal on metal, of glass on glass and wood against wood—these and numberless others are easily provided if musical instruments are not within reach.

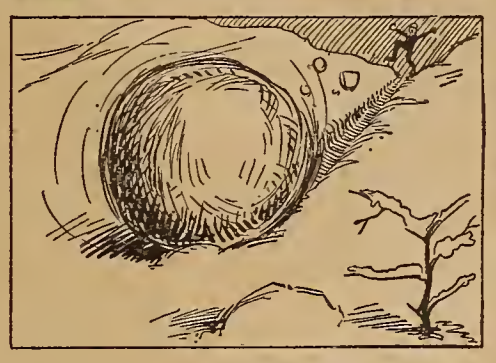
The sense of feeling may be tested by passing quickly from hand to hand a variety of things that cause a little surprise, and so put one off guard. A glove filled with wet sand gives one an uncanny feeling if grasped unexpectedly; a harmless bit of cotton wool following after this is almost as unpleasant, and a bristling for cleaning lamp chimneys is a most puzzling object when held but for an instant before being claimed by one's neighbor. Even a raw potato and a handful of gelatine are puzzling objects to name when deprived of those invaluable auxiliaries, our eyes, for all the tests are made while the company is blindfolded.

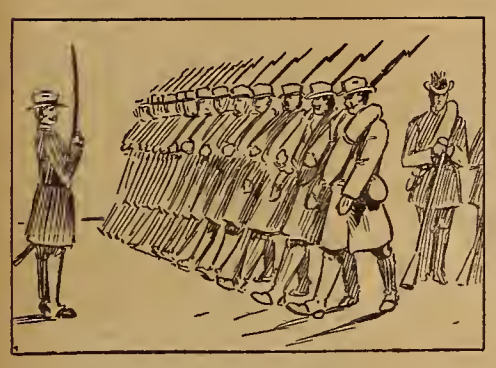
The prizes need be but the merest trifles. They will provoke nothing but pleasure if they are simple and in abundance.

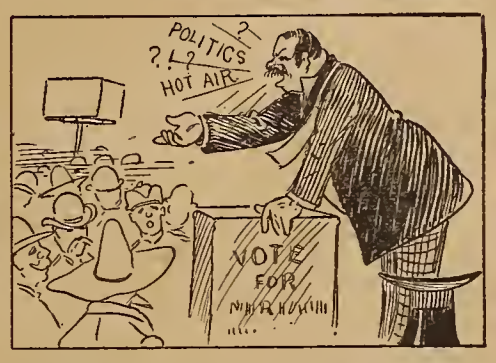
Suggestions of Implements and Machinery Used on Farms Are Shown in the Six Pictures Herewith:











Answers to Puzzle in the April 25th issue: Weasel, Unicorn, Swine, Dragon, Bear, Camel.

CHARADE No. 1

My FIRST you see on all you meet,
As often as you walk the street.
The marks of LAST you also trace,
Printed by time on many a face.
Visit the shambles everywhere,
Smearing the ground, my WHOLE is there.

CHARADE No. 2

My FIRST, with ready wit and merry smile,
May oft be met at fairs in Erin's isle,
That land which justly boasts of many a WHOLE
Endowed with honest heart and noble soul.
Though not a few in modern days who claim
That honored title have belied the name,
And on a nation's cause disgrace have cast
By shameful deeds of lawlessness and LAST.

LITERAL CHARADE No. 3

If in your boots you look with care,
My FIRST you're sure to find;
My SECOND, too, is potent there,
To such as are not blind.
If through the years that long have passed,
You search with wistful eyes,
In them you'll see my THIRD and LAST,
My WHOLE all children prize.

LITERAL CHARADE No. 4

My FIRST is found in palace grand.
My NEXT in sunny clime;
My THIRD appears in ocean's sand.
And FOURTH in silver mines.
My LAST is seen in every room,
Where oft my WHOLE you'll find,
Whose soothing tones dispel the gloom
From many a troubled mind.

COLLECTION OF RIVERS (HIDDEN WORDS).

1. He began gesticulating fiercely.
2. Then I shall begin dusting his jacket.
3. He had a bad catarrh one day.
4. He has a house in each district.
5. The dirt is horridly increased here.
6. I took some broad hints from him.
7. That stag used to be very dangerous.
8. Was this glass ever nice and clean?
9. How yellow all this has turned.
10. We should not like to miss our innings.
11. I think that ham especially good.
12. It was rightly called an uberous vintage.

"If You Please"

WHEN the Duke of Wellington was sick the last thing he took was a little tea. On his servant handing it to him and asking if he would have it, the Duke replied, "Yes, if you please." These were his last words. How much kindness and courtesy are expressed by them! He who had commanded great armies, and was long accustomed to the tone of authority, did not overlook the small courtesies of life. Ah, how many boys do! What a rude tone of command they often use to their little brothers and sisters, and sometimes to their parents! That is ill bred, and shows, to say the least, a want of thought. In all your home talk, remember "If you please." Said to all who wait upon you, it will make you better served than all the cross or ordering words which you can use. W. P.

I Mean to be a Man

A GENTLEMAN once met a little fellow, seven years of age, on his way to school. Stopping him for a moment, he said, "Well, my little boy, what do you intend to be when you grow up?" He had asked the question many times before, and some boys told him they meant to be farmers, some merchants, some ministers. But what do you think was the answer of this little boy? Better than all of them. "I mean to be a man," he said. It matters very little whether he be a farmer, or merchant, or minister, if he be a true man. W. P.

It's the Hit That Counts

"BOYS, it's the hit that counts," said President Roosevelt recently to some middies at target practise.

Yes, boys, it's the hit that counts everywhere. There is such a thing as honorable failure, but honorable success is better. And, do you know, my lads, that success is very much a matter of habit? The habit is usually formed at school, and when once formed it abides. It is true that some boys who were failures at school have succeeded fairly well in after life, but they succeeded not because of the failure, but in spite of it; and failure is always hard to overcome. On the contrary, you watch the lad who succeeds in all his undertakings at school, in the classroom, in his examination, in classroom contests and in field contests, and if you follow that lad in his after career you will be apt to find a successful man. It's the habit he has formed of hitting and not missing.—Richmond Times-Despatch.

A Homesick Boy

I'm visitin' at Aunt Maria's,
And I'm homesick as I can be;
It's sawdust and shavin's for breakfast,
And shavin's and sawdust for tea!

She says it ain't sawdust nor shavin's,
But some kind o' nu-triment food;
Anyway, 'tain't pie nor doughnuts,
Nor fritters, nor anything good!

She never has jams or cookies,
She says they are awful for me;
We eat 'em like sixty to our house,
And we're all of us healthier'n she!

She won't let me have any sugar,
Because it will give me the gout,
And meat I can't swallow a mite of
Till I've chewed it an hour about!

Didn't know that I had any liver,
'Cause, you see, I was never sick much;
But I'm hungry for all I can think of
'Cept sawdust and shavin's and such.

Oh, I want to see ma and Louisa
And grandma and my old ball!
But I guess I'm homesicker for doughnuts
Than anything else at all!
—Emma C. Down in Life.

When writing to advertisers, tell them you saw it in "Farm & Fireside."

Quite I Right

SHE—"No, Jack,m afraid it's impossible. We should ver get on w gether. You knol always wa ant my own way so much

HE—"Well, thatll right. You could go on wanting it a we were mi arried."—Pick-Me-Up.

Plenor All

SERVANT MAID—ft my last p lace because I couldn't nough to eat ."

MASTER—"You t find that t he case here. My wife the cookin, g, and there is always t left after every meal."—Meggend Blaetter.

IRISHMAN (or an electric fan for the first time)—ng! that's a lively squirrel you havere!"

Truth's Reward

A number of men in a Washington hotel ving an acco unt of an incident ofvil War. A quiet man who stoodast said:

"Gentlemen, there, ened to be mem- and might be refresh your ference ory as to wh place in re to the event juted."

The hotel said to him "Sir, what might ha your rank?"

"I was a pri e was

Next day tt man, as h wered about to depar for his bill. first

"Not a cent, t a cent," ans Led- the proprietor. are the ver private I ever—Philadelphia ger.

A Goocmmendation

"That Jones at used to wo rk for you wants toout to me. Is he steady?"

"You bet! las any steadi er he'd be motionless."e.

EaPerceive

"What do yk of Colonel Brag- git's assertion could dig th e canal in six months?

"I think thel is talking t hrough his Panama haltimore Amer ican.

Had ast Laugh

When Leslie haw was pra ctising law in Iowa, years ago, h e was looked upon asy able attorne y. He had several peabits, and the y were especially noti ced an when he fa alk he audience. Befeginning to t ar his would look ov audience, cl d rub throat, arrangcoat collar a ase in his hands toge In trying a c argu- court one day, e opening the, y and ment Mr. Shanned the jur went through his regular course of clearing his throat, etcetera. The opposing lawyer was a young man, who had a very high opinion of his own legal ability, and when Mr. Shaw had finished his argument he arose and stood before the jury, and, thinking to have some fun at Mr. Shaw's expense, proceeded to imitate his eccentric movements. Before beginning his discourse he calmly looked the court over, cleared his throat, rubbed his hands, arranged his coat collar, and began. A titter was heard over the courtroom. When he finished his talk to the jury, Mr. Shaw, calm and undisturbed, arose to make the closing argument. He stood before the court and jury and went through his customary movements. It seemed to the lookers-on that they were more pronounced than ever. Then Mr. Shaw broke up the dignity of the court with the remark:

"May it please the court and the jury, the young man who preceded me acts like a good lawyer, but he talks like a fool."—World's Events.

◈

And the Public Likewise

JUDGE—"What is the verdict of the jury?"

FOREMAN OF THE JURY—"Your honor, the jury are all of one mind—temporarily insane!"—Home Herald.

◈

Some Modern Maxims

Get busy. Monotony kills.

Faith in one's cause is half the battle.

Turn it around. Look at the other side.

Nine tenths of your troubles are imaginary.

You have mistaken the purpose of your grindstone if you are holding your nose to it.—Extracts from the Bulletin of the Kansas State Board of Health.

MOTHER—"See, heah, you bad youngstah, didn't I tell you not to play with dose white trash kids?"

SON—"But, mammy, I didn't know dey was white until after we went in swimmin'."

A Flitting

A fly and a flea in a flue
Were imprisoned, so what could they do?
Said the fly: "Let us flee."
Said the flea: "Let us fly."
So they flew through a flaw in the flue.
—Life (Melbourne, Australia.)

◈

Not Serious

"And has Cholly brain storm, doctor?"

"Slightly, slightly. It's just a mild drizzle."—Washington Herald.

AT THE COUNTY FAIR IN CONGO

From St. Nicholas

Farmer Hippo—Come, now, I've bought my ticket, and you must let me go up with you!"

HONOR ROLL

Farm and Fireside's Great Four-Pony Contest

The following contestants are already prize winners. They have each won **two** prizes by getting on the FARM AND FIRESIDE Honor Roll, and their names will be seen and read by nearly three million people. This Honor Roll is complete up to April 20, 1907.

Mrs. S. A. Allen, Iowa
Scotty Auk, Pa.
Bernice D. Andrews, Mass.
Paul H. Aepple, Ohio
Fern Atkins, Pa.
Josie Anderson, Ohio
Glynn Anderson, Okla.
Ruth Anthony, Va.
Holland B. Alexander, Tenn.
Arthur Adcock, Ohio
G. W. Burton, Ark.
Hazel Boyce, N. Y.
Arthur Beard, Kan.
Clarence Bailey, Pa.
Leonard H. Bruhaker, Ohio
Gwendolyn Bowles, Mo.
Loree Burwell, Ohio
Violet Brown, Wis.
Louis Branchet, Mont.
Paul F. Beam, Ohio
Junius C. Ballard, Tex.
Ormond Blunt, Mo.
Charlotte Blankenheker, Ky.
McKim Buckley, Pa.
Leonard M. Beachley, Md.
Ellis W. Burrows, Ohio
Roht. Bremer, Pa.
Harrison Burkett, Pa.
Florence M. Boyer, Pa.
E. W. Burruss, Ark.
Helen M. Beal, Ohio
Alice Brown, Pa.
Henry Blake, Mass.
Lucien W. Bingham, Vt.
Mary A. Buchanan, Va.
Rozella Bughtler, Ohio
Mary Bockes, Iowa
Mrs. F. C. Bradley, Wis.
Harvey J. Brackin, Del.
Wilmer Beck, Pa.
Albert Brant, N. Y.
Everette Biset, Mich.
Ruth Cotton, Ohio
Hazel Cubberly, N. J.
Ernest Collins, Iowa
Beulah Crane, Kan.
Myra Cassidy, Ohio
Johnson Cannon, Ohio
Mrs. E. Churchill, Ala.
Roy E. Cowgill, Ohio
Frank Calkins, Ore.
John Clark, N. Y.
Fay M. Conley, Ohio
Fern Childress, Mo.
Harold Caldwell, Ohio
Ethel Carpenter, Ill.
G. Woodford Connell, Canada.
Wesley Colby, Iowa
Irene Camphell, Ohio
Herbert A. Camphell, N. Y.
Leonard Coutts, Canada
Paul Clay, Okla.
Thomas Crickmau, Ill.
Marie Carothers, Ohio
Lottie L. Crawford, Neb.
Ahbie Chambers, Ohio
Mildred Comins, Mass.
Margaret Carter, Mass.
Henry Clausen, Ind.
Archie R. Cook, N. Y.
Mrs. Laura Courter, Ill.
Foster Colgrove, Pa.
Mary E. Cahill, Ill.
Matilda Colston, Va.
Chas. Claus, N. H.
Zita M. Carroll, Mich.
Fay Keneth Cotauch, N. Y.
Earl Denison, Canada
Mary Douthit, Okla.
Floyd Disterdick, Ohio
Irene Duff, Ala.
Lucy Dudgeon, Neh.
Lucinda Dillavan, Ill.
Bessie Dohson, Wash.
Essie Dillard, Ky.
H. T. Duncan, Pa.
Edna Davis, Ohio
Lou M. Duke, Tenn.
Lester M. Donaldson, Iowa.
Mrs. C. W. Downar, Ohio
Mrs. Snell Davis, Ohio
Thomas V. Downin, Md.
A. S. Dewitt, Pa.
Geo. Erickson, Mass.
Grace Evans, Ohio
Ruhy L. Emlet, Ohio
Carl H. Egge, N. Y.
Geo. Ericsson, Iowa
Lorena Ernst, Neh.
Mildred Eckenrode, S. Dak.
Donnie D. Euliss, N. Car.
Oscar Fairey, Ala.
G. W. Fox, Wis.
Glade Fuller, Pa.
Roy Frankenherry, Pa.
Gladys Ferlen, Wis.
Leonard Foreman, Pa.
Grover C. Freeze, Ohio
Marie Finzel, Md.
Weir Goodwin, Jr., Va.
Wm. Gilson, Pa.
Carl Gregg, Ore.
Isahel Graham, Ohio
John S. Gihhs, Ohio
Arthur B. Gill, Va.
Bernice Gilliland, Ohio
Grace Gindice, Mont.
Anna Gilbert, Cal.

J. E. R. Goodman, S. Car.
Rosa E. Gray, Neh.
Rhoda R. Green, Pa.
Arthur Gardner, Iowa
Mrs. I. T. Good, Va.
Mrs. F. A. Hall, Ohio
Lucy M. Heckard, Ore.
Orrin E. Hill, N. Y.
Kathryn Harrison, Pa.
J. E. Hoffman, Ohio
Lucy M. Heckard, Ore.
Reginald G. Hawley, Vt.
Mahel M. Hannum, Ohio
E. E. Harrison, Ky.
Williard Hipsher, Ohio
Chas. Holden, Ohio
Jesse Hecke, Ill.
Margaret Heavner, W. Va.
Huhert Hull, W. Va.
E. Page Harris, Ala.
Genevieve Haun, Wash.
Marjorie Hiherling, Pa.
Margaret Husted, Ind.
Jessie Hoover, Ohio
Geo. Harris, Mo.
Master Lewis P. Hassel, Pa.
Glenn Hoffman, Mich.
Mrs. W. S. Hart, Ala.
Laura E. Holt, N. Car.
Willie A. Hoogbruin, Mont.
Ethel A. Hathaway, Ohio.
Marie Hugues, Va.
Clifford Irving, Canada
Beryl Johns, Ark.
Dott Jay, Ill.
Gladys Johnson, Ill.
Bernice Johnson, Ohio
Irene Johnson, Ohio
Johnny L. Johnson, Mo.
Lonetta Jones, La.
Glynn Jordan, Colo.
Angie Johnson, Ohio
Howard Jones, Ohio
Mrs. B. E. Jefferies, Utah.
Florence James, Ill.
Milnor Kauffman, Pa.
Leland Kreig, Ohio
Beulah Klein, Okla.
Marguerite King, Ohio
Mrs. N. A. Keene, Mass.
Mahel Kintner, Pa.
Charles W. Kingsley, Mass.
Mrs. Rosa Kannel, Ohio
Russel Kreiter, Ohio
Artie Klingensmith, Pa.
Levi Ray Kellar, Vt.
Leonard Knox, Tex.
Howard G. Laidlaw, N. Y.
Ruhy Leopold, Neb.
Carey Lackey, Tex.
James W. Lott, S. Car.
Clarence Lee, Pa.
Louise H. Lowe, Conn.
Herman H. Light, Mass.
W. A. Ludwig, Pa.
Harry A. Leeman, Ind.
Frank W. Lynn, Ohio
Julia M. Lyons, Mass.
Muriel J. Leonard, Wis.
Margaret Lawson, Ky.
Renel Lavanway, Mich.
Faunt S. Le Roy, Ind.
Georgie Leonard, Mich.
Glenn H. Long, Pa.
Carrie Mann, Tex.
Arlow G. Marsden, Wis.
Hazel McWilliams, Wis.
H. R. Milligan, Ohio
Francis M. McCartney, Pa.
Chester M. McNeil, Ill.
Anna Mendenhall, Ind.
Henry Miller, Pa.
Russell Maxwell, Pa.
Joscph Moses, Mo.
Floyd M. McCartney, Mo.
Erwin Mayer, Wis.
Ruth Katie Mills, Mich.
D. L. Madray, S. Car.
Ruth Morgan, Ky.
Lettie Martin, Mo.
Edna McQuillen, Iowa
Viola Miller, W. Va.
Mercedes Martindell, Ohio
Merle Mayfield, W. Va.
Ida A. Munson, Wis.
Stanford Miller, N. Y.
Ella Matthews, Mont.
Lourine Moore, Tenn.
Pearl McFarland, Iowa
Eddie Michaels, Ohio
Randolph Metzler, Pa.
E. A. McNight, Ind.
Jay A. Melious. N. Y.
F. Ray McKenzie, Pa.
J. E. Murphy, R. I.
Wiley Martin, Ky.
Earl Martin, Iowa
Mary Martin, Mo.
Susie Meyer, Canada
Elizabeth Meacham, N. Mex.
Jno. B. Masloff, Wis.
Ruby Moose, N. Car.
Ruth Niles, Pa.
Worthy Nash, Mass.
Allen Neal, Colo.
Williard L. Neese, Ohio
Agnes Neuscheter, Ohio
Mrs. J. C. Oestergard, Cal.

J. B. O'Bryan, Ind.
F. V. Ogden, Va.
Mark Oshorne, N. Y.
Leonard Owen, Mo.
Jesse W. Oren, Va.
Leonard Owings, S. Car.
Mahel Patrick, Ohio
James B. Parks, Pa.
Ara C. Potter, N. Y.
Lawrence D. Pelton, Wis.
Gladys Payton, Kan.
Virginia C. Patterson, N. Car.
Samuel H. Page, N. J.
Crissie Powers, Conn.
Helen Pressly, Pa.
Wm. T. Pearson, Va.
Edward F. Poss, Ohio
Waldo E. Pletcher, Ohio
Archie Parmely, Iowa
Maytie Rowe, Pa.
Fay W. Rohrer, Ohio
E. K. Renck, Cal.
DeMerville Rohords, N. Y.
Henry Reinke, N. Y.
Daisy Reed, Wash.
Christine Reaves, I. T.
Mrs. Jeanette Reehling, Ohio
Eugene G. Ryan, Ky.
Myrtle Rogers, Tex.
Harold Roes, Maine
Hazel Ridlen, Mo.
Minnie M. Reehling, Ohio
Hazel Rea, Ohio
Stanley Roherts, Pa.
Mahel Rowland, Mass.
Raymond P. Ream, Pa.
Margaret Reehling, Ohio
C. L. Rowland, Va.
Charlotte Rogers, Pa.
K. B. Saunders, Va.
Essie J. Seal, S. Car.
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John Sims, Ark.
Floyd Sheley, Mo.
Maud Stewart, Ohio
Neil Scoles, Iowa
Hester Sexton, Ill.
Ed Stoker, Tex.
Elizaheth Shumate, Va.
Alta Simpson, Neb.
Harold R. Savage, R. I.
Laura B. Snyder, Pa.
Oliver L. Smith, Ohio
Henry Schladenski, Wis.
Freddie Scherbacher, Neb.
Helen Siegfried, Ohio
Ralph Smith, Tex.
Howard Shout, Ohio
Mrs. P. V. Savage, Ohio
Ray Sherrill, Neb.
Joy Smock, Iowa
Mabel Spangler, Ill.
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Omar G. Shaffer, Pa.
Paul Spencer, Iowa
Edgar Sanders, W. Va.
Julia Spautin, Ky.
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Hannah Scott, Ohio
Martin Sander, Ohio
Frank Streipert, N. Y.
Lela Shambaugh, Ga.
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Annie Tandy, Ky.
Georgia A. Turrill, Kan.
Lula Tennant, N. Y.
Lola Thacker, Ohio
Rudolph Thesen, Ill.
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Marie Temple, S. Car.
Olney Thompson, Ohio
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Edna Walker, Ohio
Loree Winslow, Va.
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Phebe Woodson, Va.
Neath Wilson, Ohio
Wm. Arthur Woods, Neb.
Lucile Welch, Kan.
Ralph Boswell Walters, Ind.
Dora Young, Ind.
Mabel Young, Cal.

We Will Put Your Name on This Honor Roll

if you will take our advice. Just send ten subscriptions to FARM AND FIRESIDE to count in the Great Four-Pony Contest, and in addition to giving you a prize we will tell you all about the Honor Roll—what it means and how to get your name on it. It means a great deal, for the Honor Roll puts you right on the road to the ponies.

Get One Subscription a Day

and before you know it you will be on the Honor Roll. If you can get more than one subscription a day it will be so much better. And then when you get on the Honor Roll it is clear sailing for the pony team. Now make up your mind to-day that you will be on the Honor Roll before May 15th if you are not already on. Just think what it means to win **two** prizes and have your name seen and honored by 3,000,000 people! That's what the Honor Roll will do for you.

"GET IN THE SADDLE!"

SUNDAY READING

"Whene'er I Wander Forth"

Whene'er I wander forth in joy of spring,
Abandoned to the sunshine and free air,
With all its healing freshness—lose all care
And feel atune with every living thing,
And watch the ever-changing clouds, across
The deep blue heaven, like angel forms, float by,
Swept on and torn by rushing winds that high
Among the tree tops giant branches toss—
Then sportive streamlets, with their murmurings clear,
Mingle their music with the songs of birds,
And holy Nature speaks almost in words
By these her voices—words of humble cheer.

One spirit dwells within this world, revealed
Through all things that have life—the grass, the trees;
And through the powers of Nature—stream and breeze,
And every force in earth or sea concealed;
But in man's heart 'tis more distinctly shown;
Aid if there be the meditative mind,
With sympathy and love for all mankind,
In conscious bliss the abiding God is known.
—Helen Irma Gilbert in Western Christian Advocate.

◈

Sunday Rest

THEY rest most happily on Sunday who carry an element of rest into the experiences of every day—that rare blossom of heart's ease which helps to make every burden light. It is often inevitable that we should work all the week till Saturday night up to the limit of our capacity; but the wisest of us keep, even in our busiest and most interrupted hours, a little reservoir of peace in our heart's shrine. The noise and tumult beat at the doors, but they never enter there. One of the offices of a well-spent Sunday is to replenish this inner, central reservoir of peace for the use of all the other busy days. These other days drain and exhaust it. Then the merciful rest day comes around and fills it full again. Those who allow themselves no real day of rest and quietness of heart are making too wearing and dreary work of life. The wear and tear of the machinery goes on too fast. Those who lead idle lives can never know what a true rest is like. Their machinery is rusted out and unused. The joy of Sunday grows out of contrast with the experience of the working days. When this balance of work and repair exists, when the soul is fed on Sunday for the hardest trials and most wearing needs of the soul, the whole week becomes religious, as it should for every Christian man. And such a religion comes to its most joyful expression on its own free day.—Boston Transcript.

◈

Huffy People

THERE are a great many huffy people in the world. You meet them almost everywhere. You can scarcely crook your finger without giving them offense. They are always on the lookout for slights, or insults, and can take them when they are neither intended nor given. Huffy people are not pleasant companions. You never know when a spell will take them, or how long it will last. You must always be paying them homage, and doing them reverence, or they will think they are not appreciated. Such persons need a little humility, so that they may not think of themselves more highly than they ought to think, and a little of the Grace of God in their hearts, to sweeten their temper and cure them of their underground suspicions. If you want to be happy and agreeable to others, do not huff.—Presbyterian Banner.

◈

How a Dime Made Three Happy

ONE cold day in winter, while walking along the busy street of a large town, I noticed a plainly dressed little girl walking about in an aimless way, looking wistfully at everybody, and yet not daring to speak to any one. I judged this by the manner in which she shrank away from those who went near her, or dropped her head if others chanced to look at her.

She was looking into a bakery, through the large windows in front, in the same wistful way in which she had looked at the people passing to and fro. I knew very well what that look meant, for I had seen it too many times to be deceived. I was about to speak to the little waif, when another child of about the same age stepped in ahead of me, and spoke to her in such a sweet, pitying voice that I became deeply interested at once.

"Would you like something to eat, little girl?" was the low inquiry.

The new-comer also understood the meaning of the wistful look of the pale-faced child, and acted a little more quickly than I had done.

The one addressed looked quickly up to see if the words were real or a joke. It did not take her long to decide, for these friendless little ones are generally quick to read human faces, and tell the false from the true.

"Yes, I'm so hungry," was the low, eager answer.

"Well, here is ten cents that papa gave me to spend for myself; but I will give it to you, you look so cold and hungry." And the bright little coin immediately changed hands.

The hungry child, with an exclamation of joy, sprang toward the door of the bakery, while the sweet little girl who had acted the part of the good Samaritan, smiled and went on. She understood, also, that the cry of joy contained a volume of thanks, and she was repaid for the sacrifice that she had made.

"Do you know the little girl whom you have just helped?" I asked, as I followed slowly after the well-dressed little stranger.

"No, lady; but she looked so hungry that I felt sorry for her. Mama always tells me to help those that look as though they need help—if I can—and you know I could do so, as I had the ten cents."

This explained the sweet secret of the kindly deed. She had been taught to do good by a loving Christian mother.

I went back to watch for the hungry little girl as she came out of the bakery, for I was connected with a society that looked after the poor of this large town.

She had two or three packages in her hands, and there was a happy smile on her face. I thought it a little strange that ten cents would purchase so much, until I remembered that the baker was a kind-hearted Christian man.

Surely the shadow of my little story is touched with beautiful sunlight, and no one can fail to see its source, which is Christian love and sympathy.—Presbyterian Banner.

◈

"Doing the Right Thing"

LET every man prove his own work, and then shall he have rejoicing in himself alone, and not another.—Gal. 6:4.

"I have desired," said Alfred the Great, "to live worthy while I have lived, and after my life to leave the men that should be after me a remembrance in good works." How lofty that desire. Not romantic success, but duty is the aim of his whole life; not to do some great thing, that he and others may glory in his greatness, but to do the right thing, and doing the right thing he was doing simply what God gave him to do.

Every man was sent into this world to do some particular work and to bear his own burdens, and not simply to live like some one else. God has given all of us something that he especially wants each of us to do individually, something that cannot be done by any other than he to whom it was given to do it.

What is set apart for each of us to do may not always be a pleasant and an easy task; yea, seldom is the case. Our work is hard, but delightful and glorious. We should not try to feel happy; we should try to work, and happiness will come. When you wake in the morning, and when that heavy pain wakes, too—oh, so sharply—and the burden of a monotonous life falls down upon you or rises like a dead, blank wall before you, making you turn round on your pillow, longing for another night instead of an insupportable day, rouse yourself. Remember what you are—a child of God. Ask yourself, what have I to do to-day? Not what are the pleasures or sorrows that will come upon me, but what have I to do? Do the right thing and you have your answer.—Clarence E. Allen.

◈

The Homeless Singer

ON A cold, dark night, when the wind was blowing hard, Conrad, a worthy citizen of a little town in Germany, sat playing his flute, while Ursula, his wife, was preparing supper. They heard a sweet voice singing outside:

Foxes to their holes have gone,
Every bird into its nest;
But I wander here alone,
And for me there is no rest.

Tears filled the good man's eyes, as he said, "What a fine, sweet voice! What a pity it should be spoiled by being tried in such weather!"

"I think it is the voice of a child. Let us open the door and see," said his wife, who had lost a little boy not long before, and whose heart was open to take pity on the little wanderer.

Conrad opened the door and saw a ragged child, who said, "Charity, good sir, for Christ's sake."

"Come in, my little one," said he; "you shall rest with me for the night."

The boy said, "Thank God," and entered. The heat of the room made him faint, but Ursula's kind care soon revived him. They gave him some supper, and then he told them that he was the son of a poor miner, and wanted to be a priest. He wandered about and sang, and lived on the money people gave him. His kind friends would not let him talk much, but sent him to bed. When he was asleep, they looked in upon him, and were so pleased with his pleasant countenance, that they determined to keep him, if he was willing. In the morning they found that he was only too glad to remain.

They sent him to school, and afterward he entered a monastery. There he found the Bible, which he read, and from which he learned the way of life. The sweet voice of the little singer learned to preach the good news, "Justified by faith, we have peace with God through our Lord Jesus Christ." Conrad and Ursula, when they took that little street singer into their house, little thought that they were nourishing the great champion of the Reformation. The poor child was Martin Luther.—Sunday School Advocate.

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One of the highest compliments you can give to the editors is a cash subscription.

The Grange

BY MRS. MARY E. LEE

MORE MONEY FOR OUR SCHOOLS

THERE is no question of more vital importance to the Grange than that of education in our elementary and secondary schools. There is no department of public enterprise where there is as much sentiment and as little sense as in the matter of public schools.

People talk enthusiastically about the value of education, and then violate every principle necessary to secure it. They declare that the evils from which we suffer and for which we pay so dearly are the result of imperfect ideas respecting the most elemental propositions, and urge that if the judgment of the youth was trained as it could and should be that he would soon end the mortifying abuses that have grown up under the sanction of voters, who complain loudly, but see no way out of their trouble. They are ashamed of the offense and of the ignorance which permits it. They say that the child is imitative, and that the first years, when its imitative powers are the strongest, shape its entire future; they seek to bring it in contact with men and women of broadest experience and highest achievements it is possible for them to secure; they urge upon the boy and the girl the necessity of each day associating with some one who is wiser and more experienced than they, that they may absorb and imbibe ideas that will aid them in future life. They select for the youth, who has begun to reason, that college where are found the men and women who have risen high in public esteem because of special fitness, and then reverse all their arguments and defeat the end of reason by placing the imitative child at its most imitative age under the care of teachers or school keepers of the most limited information and experience, whose minds have not been disciplined into correct habits of thought, whose experience is little and whose judgment would not be seriously considered for a moment by any successful farmer. They seek the cheapest, not the best. They insist on competition in wages until the wage is reduced so low that teachers are forced into other occupations guaranteeing steady employment, higher wage and more time for use as desired.

Not until a healthier sentiment is created relative to the worth of a teacher, and the sentiment becomes a conviction that will demand a higher wage, will we have better teachers. People are going to go where it is to their interest to go, work where it is to their interest to work.

The fault is not in the young people seeking other avenues. They must get on in the world. The fault lies with the school patrons. As long as parents are willing for their children to imbibe their ideals from men and women of limited culture, and to have these same people shape the future of their children, just so long will we have the miserable school system or lack of system which we now have.

There must be better teachers. All are agreed upon that. There must be more money for them, and here is the rub. Tax payers say that they are paying all that they can afford in taxes. Let us accept the statement as true. But in every state in the Union with any considerable amount of property there has been sufficient graft, in various forms, offices created, not because of public need, but to pay a good worker of a political machine, unneeded supplies purchased, and these at double the cost to the private citizen, to increase the wage of every teacher twenty dollars a month above what they now receive.

Increased wage will bring back to our schools the talent that once governed them, and will do more than any one thing in shaping the minds of the children to the end that they will be able to protect themselves and to secure to themselves a just and equitable share of the good things of life. Less sentiment and more sense will relieve us of a vast amount of ills, and there is no better place to begin than in our common schools. The Grange is the place to take up the matter. Better pay means better teachers; better teachers means better schools; better-equipped men and women means more benefits from the money we spend in a public way.

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G. D. BLACK

One of the new men who will sit in the National Grange next session, and who will take part in shaping its destinies, is Geo. D. Black, newly elected Master of the Kansas State Grange. He comes to his duties as Master with wide training in business affairs.

He and his wife were born in Sidney, Ohio, and moved to Kansas in 1869. They immediately began to agitate the question of Grange, and in the spring of 1873 had the pleasure of seeing Lone Elm Grange No. 152 organized. The Grange hall is located on the farm they bought when they moved to Kansas, which

is four miles south of Olathe. The Grange meets every Wednesday evening.

Mr. and Mrs. Black have been connected with the State Grange since the second year of its organization, either as delegates or officers. In 1880 he was elected secretary, and served in that capacity till 1906, when he was elevated to the station of Master.

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THE OBSERVATORY

The Granges of Massachusetts, Vermont and New Hampshire are making a hard fight against the gipsy and brown-tail moth. Massachusetts has taken from Ohio Professor Burgess, Master of University Grange, an expert in handling these insect pests. He will devote his entire attention to the eradication of the insects that are making havoc with trees in the East.

W. F. Hill, Master of Pennsylvania State Grange, with a membership of above sixty thousand, is active and aggressive. In addition to his duties as Master, he is lecturer at the farmers' institutes, where he renders effective aid to the educational and social features of farm life. He edits a department in the Pennsylvania "Grange News," and writes for other Grange papers. His state is in excellent condition.

The Grange is the logical successor of the old New England town meetings, where the citizens met to discuss the business of the community, just as stockholders meet to discuss the business of a concern. A community is a joint stock company. If its business was as wisely administered as are successful business enterprises, the money we pay for current public expenses would place fine roads, schools and all manner of advantages at the command of every resident. It's your fault if you don't secure them.

Hon. John G. McHenry, member elect to Congress from Kansas, who is the special representative of the State Grange on banking interests, has further displayed his genius for organizing by starting a co-operative store at Benton, with a capital stock of $40,000. Stock is owned by members of the Grange. If Brother McHenry makes this venture as successful as his banking, it will prove a great boon to the farmers. Kansas has made a success of co-operation. Why not the states farther east? Every experiment will be watched with interest.

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If all our FARM AND FIRESIDE family of nearly three million readers joined hands, standing in a row, they would reach from New York City to Denver, Colorado. That's the best trans-continental line we know of, because it does not presume on its greatness to violate the laws of the land by favoring big corporations and sitting hard on the farmer. There is only one thing the matter with this line of ours—it doesn't reach far enough. The slogan is now: "On to the Golden Gate!"

LEAVES FROM A FARMER'S NOTE-BOOK

If some man could invent a machine for loading manure, he would make his fortune. That is about the hardest part of the farm work of the spring. We have good manure spreaders now that help a sight about unloading, but digging it out of the heap under the shed is the hardest kind of hard work. Just think how many tons one must lift in the course of a day's work! And the lifting is not the worst of it. We must break it loose from the great pile into which it is often bound by straw and other litter, so that we must pull and tug to get it at all. Then it must be lifted high to the wagon, clear over the sideboards. The modern low-down wagon wheels are a great improvement when it comes to such work, but how tired you are in spite of everything when the day is done! When a young man, a younger brother of mine made himself really sick working too hard at drawing out manure. We had no one to caution us not to put into it too hard, and we had all the ambition of youth, but it took us several days to get over that one severe spurt. It never pays to work too hard at such jobs. Better take it a little easier. Sit down once in a while and straighten out the kinks. You can stand it better and do just as much in the long run. We seem to be slow as farmers to learn the knack of taking things as we can hold them; so we overdo and have to suffer the consequences.

* * *

We are making plans for a good crop of green corn for the stock a little later on. There will be a lot of hungry cows roaming the pastures this summer, just as usual, when the fresh grass begins to get dry and hard, saying nothing about the supply being so short that the cows must travel miles to get enough to keep them in good flesh. That is one thing we have learned; cows will do just as a great many people do, put nice things on their own backs, whether they lay up a cent or not. If feed is short, you may depend upon it that the cows will take the greater part of what they get from the fields to maintain their own good condition. If anything is left over after that, you will get it in the milk pail. If not, the cow thinks it is none of her business. So plant corn. And have it good and sweet, too. Common fodder corn is not much better than a good drink of water out of the creek to make butter. What we want is the rich sugar and other nutritious elements that we find chiefly in sweet corn. That will make good milk, and good milk is what we want and must have to make good money.

EDGAR L. VINCENT.

EARLY POTATOES

When a boy I disliked the plan of taking sprouts off potatoes before planting them, but was over-ruled by my father; and all others to whom I mentioned the matter, agreed with him.

After spending most of my life in other pursuits, I found myself when I had a very large garden, and raised potatoes for my own use, so I tried my plan as follows: Some weeks before planting I placed my seed potatoes not more than two deep on a warm cellar floor, and let the light from outside shine in upon them. By this means I grew strong red sprouts, instead of slender white ones, such as are usually found in a cellar.

In cutting and planting I used care in handling, just as we do with other sprouts, and as a result my potatoes were up within a few days after planting, instead of two weeks. They throve better than is usual, and farmers who saw the experiment agreed that a gain of two or three weeks was made. They finished growing during the cooler weather and before dry weather set in.

I have followed this plan for several years with uniformly excellent results both as to quantity and fine size and quality.

F. E. WILSON.

INOCULATION FOR ALFALFA

I seeded six acres with alfalfa in 1905, and met with both marked success and complete failure. I had success in that portion of the field where the soil was inoculated, and failure where there was no inoculation.

My field was thoroughly prepared, and I obtained a very good stand. At the time of seeding I sowed about one acre across the field with soil infected with alfalfa bacteria—soil in which alfalfa had grown successfully, with root tubercles in abundance. I applied about one hundred pounds to the acre broadcast, and harrowed it in.

The entire field grew well during the summer, and I found root tubercles six weeks after seeding. As the season advanced the infected acre began to show more thrift, and in the fall was noticeably larger than the uninfected parts.

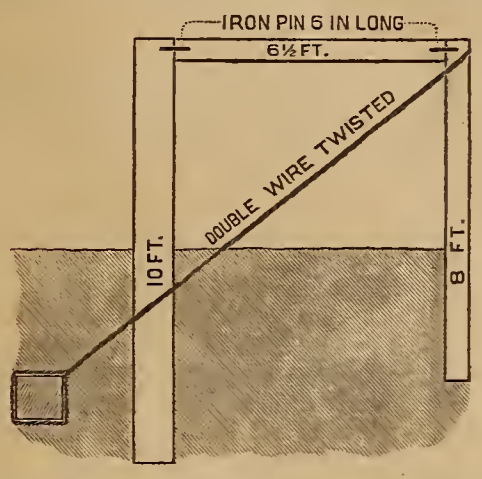
Last year the field presented on May 15th a most convincing proof of the value of soil inoculation. The alfalfa on the infected acre was of a dark green color and made a big growth. The drainage has carried the infection in streaks and spots to the lower part of the field, all of which showed the same luxuriance. The division line separating a narrow strip of uninfected land on the upper side of the field toward which there had been no drainage was as distinctly marked as the boundary of a field.

On those portions of the field where there has been no inoculation the alfalfa has been of a pale yellow color and very much of it so feeble and stunted that it will soon die out unless assisted. However, I intend to inoculate these remaining parts with infected soil.

Illinois. WM. H. UNDERWOOD.

BRACE FOR FENCE POST

The accompanying cut shows a plan for bracing end posts for wire fence four or five feet high. The post will not give



at all if the wire brace is made tight. The top piece is held in place by iron pins. The stone, or cement block, back of the post should be buried three or four feet deep.

T. M. CORYELL.

COW PEAS

The value of the cow pea has long been recognized in the Gulf and South Atlantic states. About fifteen years ago the farm press and the farmers' institutes began "spreading the gospel" north of the Mason and Dixon line, until their value is becoming recognized by farmers and fruit growers as far north as dent corn can be successfully grown.

As a clover substitute they are excellent, especially for the orchardists. One can cultivate his trees during April, May and June—just at the time it would benefit the trees most—then sow to cow peas.

In three months they will add as much fertility to the soil as clover will in twelve months.

The writer has not failed to get a stand of cow peas in the twelve years of experience in growing them, while he cannot say so much for clover. The pea has few diseases, is proof against chinch bugs, and is a great drought-resister. The chief gain of growing the cow pea is in the nitrogen gathered from the air and the improvement of the mechanical conditions of the soil.

Although the cow pea has the ability to adapt itself to unfavorable soil conditions, yet to get the best results the ground should be thoroughly prepared, since no plant will respond to a thorough preparation of the soil better than the cow pea. They may be planted any time in the spring when the soil is warm enough for beans, melons and similar tender plants, and on up to six or eight weeks of frost.

The cow pea is not a pea that can be sown very early—but really a bean, a native of the tropics, and cannot stand frost. If planted too early, a cold rain or a few chilling days will injure the young plants, and it takes them a long time to recover—in fact, many may die, and a poor stand be the result. A maximum yield cannot reasonably be expected in any crop unless we get a good stand.

The common method of seeding is with a wheat drill (if it does not crack the peas). It requires three to four pecks of seed to the acre. We have had excellent results broadcasting, but it requires about twice the amount of seed. We have tried planting in drills about two feet apart, and cultivating until peas shade the ground, thus smothering out grass and weeds usually. This method is very good when one has not much seed and wants to raise his own seed. It requires about two pecks to the acre. Do not plant too deep—one to two inches, never deeper.

As to varieties we prefer the Clay for green manuring. It is the trailing variety, making vines six to twelve feet in length. Matures but few peas in this latitude (St. Louis). Whippoorwill is probably the most widely known variety and the best for general planting. Under favorable conditions it will, if planted any time up to June 15th, mature peas before frost. The past season we had this variety to mature many peas when planted as late as July 4th. The New Era is a quick-maturing variety, and may be planted as late as July 10th, and in ordinary seasons mature before frost. This variety is recommended to plant on wheat and oat stubble land as soon as the grain is removed. There are many other varieties, but those given above are found among the best.

We have turned under the crop for green manuring, but since learning the real value of the hay, we prefer to cut for hay. After the crop is grown, and the earliest pods begin to ripen or turn brown, it is time to cut for hay. This hay cures slowly and cannot be dried and stored without great labor; however, we consider "the game worth the candle," since it has a feeding value equal to the much-praised alfalfa. Everything on the farm, from horses to poultry, eat it.

B. C. BENEDICT.

When you call on your friends tell them about FARM AND FIRESIDE if they don't already take it. Many a farmer has been grateful for being started on the FARM AND FIRESIDE road by some friend.

AGRICULTURAL NEWS-NOTES

Of the 36,782 rural free delivery routes now in operation, Pennsylvania has the largest number, Illinois ranking second.

It is reported that the Northwestern railway lines have increased the average carload of wheat to one thousand seven hundred bushels.

Owing to the partial failure of the hop crop in this country in 1906, the imports were nearly one and one half times greater than in 1905.

The next annual meeting of the National Grange of the Patrons of Husbandry will be held at Hartford, Connecticut, in November, 1907.

The cornerstone of the Agricultural Research Institute at Madras, India, was laid September 25th. Progress is the order of the day even in India.

Farmers are beginning to think and act for themselves, and as producers are coming to assert their independence in the matter of marketing their products.

The farmers near the seashore in Connecticut gather the seaweed each fall and use it as fertilizer. They claim that it brings about better results than commercial fertilizers.

In 1905, Germany manufactured 76,000,000 gallons of denatured alcohol. Only about 150,000 gallons were made by the industrial distilleries. The bulk was made by farmers for light, heat and power. There are about 6,000 stills in Germany at the present time.

The report of Mr. Geo. Wm. Hill, chief of the Bureau of Publications of the United States Department of Agriculture, contains a full list of all publications of the department during 1906. Ask for a list of publications for free distribution.

The sugar-beet growers in the vicinity of Grand Island, in central Nebraska, are to receive this season $5.00 a ton for beets testing fifteen per cent; $4.50 for those testing thirteen and fourteen per cent and $4.00 for all testing less than thirteen per cent of sugar content.

The primary object of the "new food law" is the prevention of adulteration and misbranding. If those who are engaged in putting up food supplies for market will bear this in mind their business will be helped instead of injured. Honesty is always the paying policy in the long run.

The state legislature of Illinois is being petitioned by those engaged in corn canning and the growing of sweet corn to increase the appropriation for entomological work being done by Prof. S. A. Forbes of the College of Agriculture at Urbana from $5,000 to $25,000. This amount should be granted at once. The total damage done by insects is greatly underestimated.

COLD STORAGE: A SUGGESTION

IN THE summer of 1866 I enjoyed the rare fortune of being a member of the chemistry class over which the Honorable Ryland T. Brown presided. We had closed the text-book course in March, and from the first of April to the first of June our eminent teacher gave us lectures on what he called organic chemistry. There were thirty-six of these studies, and I was one in the class who noted them down and preserved them in a book. It was a laborious process, but richly worth the outlay.

The last of the course I find devoted to cold storage, although the term "cold storage" does not once occur in the lesson. I think it is a term of later origin. What I have in my book is so good I will transcribe it as a valuable piece of history. He had been discussing the matter of preservation by canning, drying, salting and smoking; and this he discussed simply as another method of preserving things. He called it, as here reported:

THE "NICE" METHOD

The upper limit of decomposition, as discovered by Liebig, brought about the art of canning fruits, which may be done above 180° Fahrenheit. But there is one serious objection to this in the fact that the boiling point (212° Fahrenheit) is so little above Liebig's safety point. The boiling point is almost sure to destroy the cell structure of fruits, and impair to some extent their flavor and nutriment.

A gentleman of our state (Indiana), Mr. Nice, being peculiarly interested in chemical experiments, and noticing this difficulty, originated a plan by which he could preserve fruits below the lower of Liebig's limits—that is, forty degrees Fahrenheit. Reducing the temperature almost to the freezing point, in an air-tight room, he preserved apples very well with a single difficulty. Although perfectly dry when the apples were put in, the room became damp from moisture emitted by the apples. This created a mold, and the mold started a decay, in spots, on the fruit. This superfluous moisture he disposed of by spreading chloride of calcium (lime) on the floor. Lime proved a sufficient absorbent to take up all the moisture and leave the atmosphere perfectly dry.

The experiment, thus proving successful, Mr. Nice, in Indianapolis, built a house for the purpose, and made it a business. His method, with the following architectural plan, was patented. Here is the plan:

A double floor, double walls, double doors, and a water-proof ceiling. The space between the portions of each double structure was filled with cut straw, dry sawdust, or better, to his notion, the chips from a planing mill. His object was of course to provide a non-conducting boundary for the room. Overhead he placed a body of ice five feet in thickness, which, shut off from the air, would keep the temperature uniform for two years. The entire interior surface was lined with galvanized iron, and the double doors were made to shut air tight.

In this room Mr. Nice deposits his fruits on shelves, arranged with walkways between them.

Tomatoes may be kept here for a full year; strawberries and peaches for six weeks; eggs a year or more, and apples and potatoes indefinitely. He sent me half a dozen eggs last year which he had kept two years, and which appeared as sound as they were at one day old. But when I cooked them they had the taste of oranges and lemons. They had been kept in the same box, and absorbed the taste through their porous shells.

He has kept apples perfectly sound for five years.

* * *

By noting the date the reader will see that this lecture was delivered forty years ago last June, and the "Nice Method" was then five years old. It has been improved upon since then, and many great plants have been established. Commission merchants, meat packers, ice manufacturers and freight carriers on the land and sea have all profited by the principle of cold storage. Cargoes of rabbits and mutton come all the way from Australia to England, and wild game comes from Canada to Memphis and New Orleans, and practically its advantages are unlimited.

What I want to suggest is that the farmers, who possess the wealth and luxury of the country, might employ cold storage, and thus save millions every year. There are apples and pumpkins and other farm products enough lost every fall to pay the national debt, and it is a simple matter of enterprise to save it all.

There are farmers who save their stuff by putting it upon cold storage in the cities; but only last October one of the storage men told me he had refused ten thousand bushels of apples for the want of room. This means that those ten thousand bushels were exposed to partial or entire loss.

Now let the farmers take care of themselves, the same as they build a turnpike or sink a gas well. It is no longer necessary to depend on Nature for the ice. The same pipes that run through salt water and render it cold enough to freeze the big square cans of fresh water can be arranged to run through the storage room and reduce the atmosphere to thirty-four degrees; and this is six degrees below Liebig's lower limit. It is also two degrees above the freezing point; and even potatoes will stand that.

Half a dozen fruit-growing men could pool their fruits and establish the plant. It would thus be easy to make ice enough for their families, and there would be market for all they could make extra. They could put away their perishable crops, and hold them for the period when scarcity makes them valuable.

There were Grimes' Golden apples and Wealthies and Wageners enough lost last fall in some Indiana neighborhoods to pay the entire cost of a neighborhood plant. And these noble apples sell for fancy prices in all the markets.

And think of the butter and cream and fresh meat that the neighborhood might enjoy by a little scheme of united effort.

There are neighborhood telephones, neighborhood gas wells, neighborhood thrashing machines and cider presses, and a neighborhood cold-storage plant would be as practicable as any of them.

WALTER S. SMITH.

PITHY POINTS FOR PONDERING FARMERS

Whatsoever you begin, begin right. Then keep it up with all your might.

Early rising isn't near as important as making the licks count after you rise.

The man behind the garden will be behind in his fruit. His place is in the garden.

A little farm free from indebtedness is rather to be chosen than a big farm with a mortgage.

A splendid way to make an experiment of any kind is for several farmers to join hands and make it in partnership.

If you have come to the conclusion that your hens owe you half a living, be sure to collect the other half from the garden.

"All men have their price," says an old proverb. This is especially true of the farmer, or should be—but his price is on his stock and produce, not himself.

The early bird catches the early worm, the early cat comes along and catches the early bird, and the early dog trots up and chases the early cat—but the early farmer is never molested.

There are some things concerning farm life of which your neighbor may have a better knowledge than yourself. Do not hesitate to confer with him on the subject. And do not hesitate to give your neighbors the benefit of whatever you know better than they.

It takes time, labor and money to run a farm successfully, in return for which the successful farm brings plenty of money for the labor, and time to enjoy it.

W. J. B.

BOOKS RECEIVED

INDUSTRIAL ALCOHOL, ITS MANUFACTURE AND USES. A practical treatise comprising raw materials, malting, mashing and yeast preparation, fermentation, distillation, rectification and purification of alcohol, alcoholometry, the value and significance of a tax-free alcohol, methods of denaturing, its utilization for light, heat and power production, and a statistical review, and the United States law. By John K. Brachvogel, M.E. 500 pages. 105 engravings. Price, $4.00. Published by Munn & Co., 361 Broadway, New York City.

ALCOHOL, ITS MANUFACTURE FROM FARM PRODUCTS AND DENATURING. By F. B. Wright. 202 pages. Fully illustrated with original drawings of necessary apparatus. $1.00 net. Spon & Chamberlain, 123 Liberty Street, New York City.

"Graham of Claverhouse." By Ian Maclaren. Published by the Authors and Newspapers Association, New York City.

"Caleb Conover, Railroader." By Albert Payson Terhune. Published by the Authors and Newspapers Association, New York City.

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Cranberry Culture

By Prof. Samuel B. Green, Horticulturist of the Minnesota Experiment Station

IN A wild state this plant is found at its best on moist land where the water level is within eighteen inches of the surface. It seems to be rather indifferent about the soil, sometimes growing on sand and then on peat mud or moss. As a rule the best locations are low meadow lands sloping down to ponds, or watered by brooks or creeks, somewhat sheltered but not shaded. On uplands it has been successfully cultivated, but in such situations it is generally unprofitable and frequently an entire failure. As a rule the soil must be liberally supplied with water, and yet the land must be so drained that the water can be drawn off at will to at least ten inches below the surface. The best cranberry bogs are so arranged that both the flowage and drainage can be controlled. Land that has been covered with stagnant water for a long time, as the bottom of ponds, is not fit for this use until it has been cultivated and exposed to the air for a year or more.

SOIL ADAPTED TO IT

Wherever the cranberry is growing naturally one may be sure that the land near by is adapted to its culture. If no wild plants are growing near the supposed proper location it is a safe and good plan to plant a few rods of the most favorable portion of it as an experiment before spending much time or money on improvements which may prove to be futile. With a bog adapted to the growing of this plant, with control of the drainage and flowage, a good crop of fruit is assured for almost every year, if the work of preparation is properly done. Yet there are many wild and cultivated bogs that have yielded profitable crops for many years where the flowage has not been controlled, and hence if that factor cannot be directed at will it is not necessarily a sufficient reason why an attempt should not be made to plant suitable land, providing the work can be done at small cost. The returns from natural cranberry bogs may often be greatly increased by a little judicious expenditure.

PREPARATION OF THE LAND

The first steps should be directed to destroying the vegetation growing on the land. The proper method of doing this will vary according to the location and condition of the land. It can sometimes be done by flooding the land for one year and then clearing it, or by summer fallowing, and it may occasionally pay to cut off the whole surface of the bog with spade or turf ax, and remove it by hand. But in some way the surface of the land must be cleaned of its growth and made level, and fine and perfect as a garden. If it is to be flowed it should be made perfectly level, as it will then take much less water for flowage than if uneven. This matter is especially important where the water supply is limited.

SUPPLYING SAND

It is of great advantage to have the surface of the land covered with about four inches of clean sand, and this should be done even if at considerable expense. The sand used should preferably be rather coarse, but it must be free from clay or loam, as anything that encourages the taking of the surface of the bed is injurious. This sand offers a good place for the plants to root, is easily cultivated, and experience shows that it conduces to fruitfulness. Yet there are many very fruitful peat beds that have never been sanded. If a peat bed is to be used without sand the surface should be exposed to frost one year before planting or it will be likely to bake hard, but after one season's frost it becomes loose and fine.

DRAINAGE AND FLOWAGE

The method of securing these conditions will depend much on the situation of the land. The drainage is generally best accomplished by digging an open ditch four or more feet wide through the center of the land; a smaller ditch should completely enclose the land, which should be divided into beds by lateral ditches, about five rods apart. Where springs are met with they must be connected with a ditch.

IMPORTANCE OF WATER

The flowage may sometimes be controlled from a pond above the bog, or by a brook or creek running through it. Every reasonable effort should be made to secure and control water for flowage for the following reasons: (1) Without a good water supply bogs often get very dry in periods of protracted drought, to the great injury of the plants, and occasionally peat or moss bogs get on fire and burn up, destroying all the work done. A bog once on fire can seldom be saved except by flooding. (2) The water kept over the plants in the spring will serve to retard the blossoming until danger of frost is past, and will protect the fruit from early frosts in autumn. (3) Beds that are kept under water until late in the spring are seldom seriously injured by insects. (4) Beds do best if protected by a water covering in winter, as otherwise they may be seriously injured.

Where there is considerable fall in the bed it is customary to finish it at several grades and to put in as many dams, but where there is not more than two or three feet of fall one dam is quite sufficient. Dams should be made strong and have sluiceways large enough to let off all the water liable to drain through them.

ABOUT FLOWING

All that is required in flowing a bog is sufficient water to cover the vines; they should be covered about the first of November, and as deep as they are

[CONCLUDED ON PAGE 6]

PICKING CRANBERRIES

The Farmer as a Business Man

"I CALL the average farmer a pretty poor business man."

We were sitting on a wall looking down over the old home place. The work of the farm was well in hand and I had been taking a trip about the place, tucking up the odd ends here and there and breathing in new life from sunshine, air and Nature for the work ahead. The gentleman who said the thing that stands at the head of this article was from the city, a business man who was taking a bit of an outing in the country. Quite by chance we had met on the line fence, and with the freedom that always comes to men possessed with a fair degree of sense we had scraped up an acquaintance and fell to talking of matters that interested us both, until at last the business qualifications of the farmer came up.

"Not very flattering, is it?" I asked. There was something about the statement, however, that impressed me.

"You think so yourself, don't you? Now be fair, and tell me just what you honestly think."

"You made the statement. Prove it!"

"I think I can."

We settled ourselves for the discussion.

"Everywhere I go I find signs of waste. Waste in wood; trees lying dead and dying everywhere that ought to be cut up into wood and saved; waste in stones. Look at the great heaps all along the fences; and, by the way, that strikes me as being about the worst place in the world that any man could possibly put stones. Waste in land; these same stone piles cover up much good ground that ought to be turned to better use. Waste in pasture lands. Why, there are whole townships in this county that do not produce half what they ought to, nor what they might, if the brush was cleared off."

He stopped, and I got ready to answer.

"And then, when you farmers come to buying things from the stores, you show your financial inability to do business in a businesslike way. You run bills at the store right along, never thinking that by so doing you pay a great deal more than you would have to if you paid cash. When you pay at the end of the year or some other indefinite time you certainly have to make up the losses that come through bad debts of men that never pay in whole or even in part. We always have these things to look out for, and we do it by adding a percentage to the stuff we sell on time, so as to be sure that we may not come out second best. This is just a law of self-preservation on our part. You may call it mean and selfish, but it is the rule in the business world."

He paused to take breath.

"But that is not all. You buy haphazard, instead of taking time to look around and see where you can do best. Now, I do not mean by this that you shall go around trying to beat the merchants down. If there is anything that belittles a man it is to do that thing. But I do mean that by taking time and pains to inquire at a number of places you might save a great deal of money. Not all dealers have the same prices. Some are under greater expense than others, and naturally charge more for the things they handle than others. It would be right and fair for you to get acquainted with a number of dealers in different lines of merchandise. If I were a farmer that is what I would do. Merchants have to do it. They buy close. They discount their bills for cash, and they cut the corners in every way they can."

Again a pause.

"And then, so many of you are in debt for your land or your horses or something else. That is what takes the life out of farming—debt. If you would economize a little, until the debts were all paid off, you could then take some comfort in your lives. Carrying notes and mortgages will break anybody's back after a time, and it is wonderful how small a load will do it, too, sometimes."

For a space there was silence. I knew there was a lot of truth in what my new-made friend had been saying; and I knew what he did not, that there are a great many more places in which the average farmer lays himself open to the charge of being a poor business man; but naturally pride kept me from saying anything about that. But I did begin the best argument I could on my side.

"That is all right, sir; but do you know that the farmers of all the states of this country are the best patrons the savings banks have? Most of the farmers of this nation are in comfortable circumstances. They drive good teams. They have the best and most modern machinery. They travel a great deal more than they used to. They have books and papers such as their fathers never had. They help to make this country what it is, the best and most prosperous country in the world. What more do you want?"

"Well, they do all this in spite of the fact that they are not good business men. It is just because they have a good thing and do not make the most of it."

"You think, then, that we farmers fail to live up to our privileges?"

"I think you are very poor examples of business men. I think it is wrong, radically wrong, to be so wasteful, as long as there are millions in the world that are suffering for the lack of what you men might save—"

"And give away to them?"

"You said that; I did not; but I do say that we all of us have a duty to these starving neighbors. I do say it is a sin to waste on the farm as well as elsewhere. I do say that it is not right for farmers to be satisfied to drift along in this shiftless way just because they can and there is no law against it. I do say you would all be happier and the world would be the better for it if you did all you do on a good, square, business basis. Now I put it to you if I am not right."

Well, fellow-farmers, what could I say after that? What would you have said?

E. L. VINCENT.

HOW TO KILL CHARLOCK

To clear the land of this noxious weed should be the aim of farmers who are so unfortunate as to have their land infested with it. The only way to get this necessary work done is by spraying. Many experiments have been carried out with the object of ascertaining the effect of spraying with a solution of copper for the killing of charlock, or wild mustard, with the result that it has proved quite effectual. Experience has shown that charlock can be eradicated from cultivated land, if reseeding is prevented, in a few years. The successful destruction of charlock in grain crops is now so well known and so largely practised that it is no longer necessary to treat it as a newly introduced operation.

All who cultivate charlock-infested land should by this time have become acquainted with the process, and it is now only necessary to repeat, for those who have not yet adopted charlock spraying, some of the advantages that arise from it, and give some reliable information that will be a guide to obtaining those advantages. The heavy loss occasioned by growing a crop of this weed among grain is fully acknowledged, and is proved by practise to be equal to eight bushels to twelve bushels an acre. This loss can be avoided and a profit realized by a single spraying in one year; but by repeating the operation for a few years no reseeding of the land takes place, while the old seed in the land is gradually grown out, and the increased annual value of the land becomes permanent.

Charlock, like the turnip, is a cruciferous plant, and such enemies of the turnip as club root and turnip flea beetle are nourished and perpetuated by the charlock during the intervals of the turnip crop, so that the destruction of this noxious weed is all the more desirable. These advantages alone should surely be sufficient to induce cultivators to adopt the easy and profitable method now available for ridding their land of this worst of all weeds. The object of spraying charlock is to destroy the whole of it, and prevent reseeding.

The operation is sometimes very imperfectly done, arising very commonly from inefficient labor or imperfectly dissolving the copper sulphate.

The operation is simple, easy and rapid. The difference in the cost of doing it badly and in the best possible way will not be ten cents an acre. But the difference in result will be that in one case only sixty or seventy per cent of the weed will be destroyed, while in the other the whole of it will be killed, except perhaps a few straggling plants. The spraying should be done when the crop is dry, and some few hours before rain. The spray should be fine and misty, and the simple directions carried out.

The following have been confirmed by practise, and may be relied upon: (1) That young charlock can be destroyed in growing crops, without injury to the latter, by spraying with fifty gallons of three-per-cent solution of copper sulphate (fifteen pounds to fifty gallons) to the acre, and older charlock with a stronger solution. (2) That the grain crops are much improved and give a better yield where the charlock is destroyed, and that young grass seeds and clover remain uninjured. (3) That spraying early, when the weed is young and in soft fiber, is most profitable; but it can be quite successfully done just as the weed is coming into flower or when in flower. (4) That the larger spraying machines are more successful than the smaller. (5) That the profit derived from the increased yield of grain is diminished in proportion to the delay which occurs after the charlock is first fit to spray. (6) That the increased yield of grain, by the destruction of the charlock, leaves a substantial profit after all the expenses of spraying have been defrayed, and that the value of all charlock-infested land increases until the extermination of the weed is complete.

As regards the actual process, the main features are to distribute a finely divided solution of sulphate of copper. This solution when applied in the right quantity destroys the charlock without injuring the grain, clover, peas, etc. The solution should consist of a three-per-cent solution of sulphate of copper (fifteen pounds of sulphate to fifty gallons of water), and fifty gallons of this solution should be applied to the acre. The sprayer itself is a matter of great importance. The chief sprayer used is the No. 1 eight-nozzle sprayer. This sprayer distributes fifty gallons to the acre, although of course the quantity can be regulated, and delivers the spray in a steamy mist at a pressure of about twenty pounds. The cart sprayers can be fixed to the back of any ordinary cart. The charlock sprayer dresses about twenty-five acres a day, whereas a man can hoe only about half an acre a day. The charlock-spraying process has now been thoroughly proved, and it is one of the most labor-saving processes introduced to agriculturists for a long period.

W. R. GILBERT.

A YOUNG MAN ON A SOUTHERN FARM

A case of push and pluck has come under my observation that places the principal in the work high above the average farmer of the South. Seven years ago he was a toiler like the rest of the cotton farmers, making a spare crop on land that continually got poorer through the one-crop system. The family had two or three cows, and they had been occasionally selling a little butter in a near-by town. He woke up one morning disgusted with the old régime of the farm, and decided he'd quit that kind of business. During the day he heard of a neighbor who had a cow to sell, and he went over and bought it. A couple of weeks later he had the chance to buy another good one, and it was added to the farm herd. In the course of a year he had about a dozen cows on the old farm, and was starting in dairy work in good style.

The next year a few acres of land were manured heavily with the barn-yard manure, and a great amount of profit was made on the farm. Things began to look encouraging to the Georgia boy, and with the surplus cash some more cattle of a better grade were purchased and a few choice hogs added to the stock. It meant a lot of work and push and pluck, for it seemed as if every day brought new duties, but there was no backing down.

In two or three years his brother, who was principal in a model school, fell in love with the progress, and he started in to help out, and they joined hands in a co-operative way. In five years the farm attained a great reputation in the state, and butter contracts were made good for the year round. New stock and new courage added to the farm put them on a higher plane, and they were soon able to make great improvements in the buildings and erect nice fences on the farm.

The Kingsberry Farm, called by ex-governor Northern "the Belle Meade of Georgia," was offered for sale at $16,500 (I think it was), and realizing it was dirt cheap, they bought it. It is located on the river in Carroll County, and to-day, two years after, it is worth double the money they paid for it, and the trustees of the Georgia district agricultural college are trying to buy it.

This is no fairy tale. It is not a myth. The home farm of these boys is "Goldworth," and they are the Williams brothers. The success of their work has been largely due to a spirit of co-operation manifested by every member of the family, including the mother and the girls. The father died last year just as they were entering into their most successful year of farming, after he had aided well in the establishment of the new work.

But their work has not ended at this stage. Other farmers have made a valuable object lesson of their work, and there are half a dozen dairy and live-stock farms around them, and others in distant sections have taken up the work with their action as an incentive. It is given here not as a token strictly to the efforts of the Williams boys, but simply to show what can be done on Georgia soil and in the South when the right sort of effort is put behind it. There's room for expansion.

J. C. MCAULIFFE.

A NEW CRANBERRY MARSH AS IT APPEARS IN THE SPRING

NITRATE OF SODA FOR GRASS

A Jacksonville, Illinois, reader asks the result of applying one hundred pounds of nitrate of soda to the acre of meadow, and what would be the gain in hay and in quality; also where it can be purchased. This question is not easily answered definitely. We have at times seen very striking results from nitrate of soda on grass, and then again failed to notice much of any effect. For any of the clovers where the nitrogen-gathering bacteria are present in the soil (and this is always the case here with us), the application of nitrogen in any form is seldom necessary or of much effect, and would be only a waste of money.

If the land is rich in all plant foods, as, for instance, when occasional dressings of stable manure, poultry manure or complete fertilizers have been applied, then we can expect any grass, whether timothy, blue grass or any mixture of our various meadow and pasture grasses, to do well. If the land is old and run down, however, a light application of nitrate of soda may be tried. Bone meal sometimes gives good results, or in some cases potash may also be needed. It is usually a matter for trial. We have some old lawns and pastures that are badly run down, and unsatisfactory as grass or hay producers. Neither nitrate of soda alone nor dressings of muriate of potash have seemed to do much good. Reseeding and a dressing of old well-rotted stable manure might bring on some good grass again. My preference, however, is to plow these lawns and pastures up and sow them to clover or alfalfa, or to such grasses or grass mixtures as may be desired.

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A CROP FOR MONEY

G. J., a reader in Colorado, writes that he is "about to become a farmer," but has little or no experience. He owns twenty acres of land seven miles from Denver, and wants to plant something for profit so that he can make a payment of about two hundred and fifty dollars next fall.

I would like to help this man with good specific service, but how can I? If he had experience he would hardly ask my advice; and without experience the chances are against him anyway. The best crop to raise is the one for which his soil is best adapted, and which can be readily turned into cash. It must be a short-season crop, too.

I believe, if I had a similar task before me here, and a few acres of the twenty were good potato land, the crop that I would select would be early potatoes. They require a minimum of skill and give a fair amount of early money. My Early Ohios, or Hebrons, or any of the other really good early potatoes, seldom give me on good early soil less than two hundred bushels an acre, and the bushel in the early season will seldom bring less than seventy-five cents to one dollar, so that we could with reasonable certainty count on more than enough money to take care of the two-hundred-and-fifty-dollar debt, as the returns from a couple of acres of such land.

A rich clover sod, preferably broken up last year, would be our first choice. To make provision for a possible short crop, due to dry season or other unavoidable causes, it might be wise to plant an extra acre or two.

All this is with the understanding, however, that soil and location are just right. If the soil is poor, the chances for early potatoes would be slim anywhere. On soil of only medium fertility late potatoes might be preferable, although they do not always sell at as good prices. There should be no failure or shortness of the early crop for avoidable causes. If the potatoes are planted early in well-prepared soil, and properly cultivated, they can be grown successfully almost without a drop of rain from planting to harvesting; but blights and bugs must be properly fought by means of spraying two or three times with Bordeaux mixture and arsenate of lead or Paris green. I prefer the former.

Sometimes an early cabbage crop will bring good returns, but the land must be warm and very rich in available plant foods, and the plants—of which it will take over seven thousand to plant an acre—should be started under glass late in February or early in March, or must be bought ready for the field, as early as the soil can be worked, and will cost about twenty-eight dollars. An acre of them, if the crop is perfect, and there is not much loss from maggot, rot, etc., and the demand and price are good, might about wipe out the two-hundred-and-fifty-dollar debt. But it is a more risky crop than early potatoes.

If neither of these crops can be grown, maybe a few acres of tomatoes for a cannery might do—that is, if the climatic conditions are right and a canning establishment close by. A fair crop should give at least eight tons an acre, which, when sold at seven dollars a ton, would bring fifty-six dollars. It would therefore require about five acres of tomatoes to take care of the debt.

The early potatoes or early cabbage might also be followed by celery, and the possibilities of this crop are almost without limit. But it is a crop requiring a good deal of skill and good management generally. There are still other crops that might come in consideration, such as melons, cucumbers, etc., all of which, in the right place and when put in the right (especially a near) market, give considerable promise. I repeat, however, that early potatoes would be my first choice.

T. Greiner.

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THE PHILOSOPHER OF THE HORSE SHED

THE MAN WHO COULDN'T SAY "NO"

"There is a mighty well-matched team," said Jonas, as Amos and Hettie Worden drove by. "They've struck the same gait, and they always pull together. Always act as though they were paired, and were decidely satisfied about it."

Amos is a good man in himself. He always does the right thing in the right way, whether its pitching hay or passing the money basket in church. But he has one weakness—he can't say "no" to anybody. They used to tell Hettie that she must have asked the "p'inted question" before marriage, but she always insisted she didn't, though she confessed she did encourage him a little. However, she said she was very glad some cheeky girl didn't get in ahead of her, for Amos would undoubtedly have assented to the first pleading proposal.

Amos used to be made the victim of all sorts of agents. They have a way of getting onto his sort of folks, and they loaded him up with all kinds of books which he didn't want, and machines that you couldn't give away. The Bible on the pulpit was a big family Bible which he bought, and Hettie gave it to the church, saying it never was used and actually bred impiety. And they are good Bible readers, too!

Of late Amos has struck a happy idea. Before he allows an agent to quite cinch a bargain with him, he works the fellow into the presence of Hettie. It is amazing how quick he shows a sense of relief, like a grinning boy getting over a spell of colic.

The other day, as Amos came with his cultivator through some long rows of corn, a well-dressed man was waiting at the roadside.

"Good morning, Mr. Worden," said he. "Mighty good-looking corn you've got, as good as I've seen anywhere. You know how to farm. I've noticed your place. It's A. No. 1. You are one of the farmers who keep right up to date. Best way to make money on the farm."

Amos of course modestly assented, and looked pleased.

"But," continued the man, "I have been surprised at one thing. I don't see on your farm any of our great Atmospheric Inductors and Weather Controllers. Hadn't heard of them? Why, they are the great discovery of the century. In the big agricultural districts the farmers have just rushed after them. Hard to supply the demand. Going to revolutionize the whole business of farming. We set up rods just twenty feet high. Set 'em in the ground deep enough to always be in moist earth. Absolutely essential to do that," said the man, pounding down his fist. "Rod ain't worth a cent unless it goes down to moisture. But," he continued, and here he grew confidential and his voice became impressive, "the great discovery is in the metal. Some strange combination. Only two or three men in all the world are onto the secret. It is wonderful. Seems to just connect and control the elements. Ought to be a rod up on every acre, but a less number will show great results. Do away with droughts; will draw rain in a dry time sure; and when there would be too much rain, they will draw out the electricity, and it stays fair. Works, you see, like the governor on a steam engine. Strange that men hadn't discovered it before.

"Now," said the agent, and here he grew very confidential, "we are just introducing this great Controller into this immediate region. We have picked just a few leading men, and you are one of them. We propose to let you in on the ground floor—that is, we will give you the right to use the great invention, and furnish you the metal at bare cost. When people just see what will result we will get all the profit we want."

Amos said he thought the terms were very fair.

"All you have to do is to sign this order for the inducting cable," said the agent, "just the bare cost of the metal."

But Amos said he couldn't sign any paper till they went to the house and got his glasses. And here they met Hettie.

"Why don't you rent a few acres and put up your own Inductors and save all the profit?" said Hettie. When he showed her a section of the inducting cable, her eyes flashed. "No great mystery about this metal," she said. "It's a piece of common wire dipped in melted lead and then bronzed over. If you had any right to play a fool joke on Amos we could pass it; but since you haven't any such right, and are plainly meaning business, I want you to know that we know you are a cheap fraud and a low-lived rascal."

The agent had a notion to get mad, but Amos said the business would have to end right there; and so he departed.

"Really I am ashamed of you to bring such a fellow as that to the house," said Hettie.

"I wouldn't have signed any paper," said Amos, "but just for fact, Hettie, I wanted to hear you talk to him."

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FEEDING THE PEOPLE

In March 25th Farm and Fireside Mr. E. A. Season has an article on "Feeding the Farm." He expresses regret at seeing loads of hay, straw and grain hauled to the markets, and he deplores the spirit that would lead a farmer to follow such a practise.

Have we come to a pass where animal fertilizer is the only consideration? What are the farms for if not to produce food and other necessities for people's use? It is getting to be fashionable for agricultural writers to object to sales from the farm of anything but animal products, but town and city people still use bread, vegetables and fruits. These things must be sold without first being turned into the flesh of some animal. Besides, there are horses and other animals in towns and cities. These need hay, straw and grain. It must all come from the farm.

Take into consideration, also, the fact that wage earners find that grain, vegetable and fruit food products are cheaper and better than meat.

Yes, there is reason for feeding the people.

John A. Simpson.

SORTING AND PACKING CRANBERRIES

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FEED GREEN FORAGE WITH JUDGMENT

Sudden and radical changes in the feed of animals should be avoided. At one season of the year this policy is often ignored in a wholesale manner—that is, when turning stock out upon pasture for the first time in the spring. Animals long accustomed to dry rations should never be hungry when first turned out to grass. The same rule applies in the use of rape or any other green forage. Hungry animals have often been greatly injured and even killed by having been allowed to become gorged upon green forage to which the system had not become accustomed.

Geo. P. Williams.

REPLANTING CORN

From what I have seen of the seed corn many farmers are going to plant this year I am well satisfied there is going to be a great many miserably poor stands of corn. Thousands of farmers are going to wait in vain for the appearance of the plants. I know of nothing that entails greater loss or more disappointment to the corn grower than seed that is dead or vitally weak. Poor methods of picking out and saving seed are responsible for this loss and disappointment. While thousands of corn growers have largely improved their practise in this matter during the past ten years, there are still thousands of others who are still in the same old ruts. They mean to do better, and want to do better, but they don't.

* * *

Then there are times when even the best seed fails to produce a good stand, owing to extremely wet or unseasonably cold weather coming on immediately after planting. I have seen many a farmer at a loss to know just what would be best to do—plow and replant, or fill in the spaces with a hand planter. If there is three fourths of a stand, it is best to go over it and supply the missing hills with a hand planter. If there is less than three fourths of a stand, and the farmer has good seed in reserve, it is best to disk and cross disk and replant. I know farmers who are always prepared for such emergencies. If they are obliged to replant, they do it with an earlier variety of corn, one that will grow and ripen before frost comes in the fall. I well remember one season when a long spell of cold, wet weather coming immediately after most of the corn was planted, rotted more than half of even the best seed. Many farmers plowed up the fields and replanted with the same variety, a large, medium late kind. Others replanted with hoes and hand planters, using the same late variety for seed. A few did not replant, declaring it was too late to make a crop, and they did the best they could with the thin stand they had. One enterprising young farmer who decided he would replant ordered a supply of an early variety from a reliable seedsman, paying nearly three dollars a bushel for it. He had it on hand and all ready when the weather changed. He immediately disked his land twice over and planted as shallow as his planter would run. He began cultivation as soon as the plants were an inch high, keeping the surface to a depth of four inches perfectly loose and mellow. The rest of the season proved quite dry, and killing frost came early, as many expected. Those who did not replant raised about half a crop, and the greater part of it ripened. Those who replowed and planted the late variety did not raise an ear that was fit to crib. Our young farmer raised a good crop, about forty-eight bushels to the acre, and it was out of the way of frost when frost came, and ripened up good and sound. His was the only field in the locality that yielded over twenty bushels of ripe corn to the acre.

* * *

The early varieties of corn are smaller than the late kinds and do not yield as much an acre, consequently corn growers always plant the latter if the prospects are fair for a reasonably full season and they can get the seed in early enough. If anything happens to prevent early planting, or the planting fails to produce a fairly good stand, it will pay to use the earlier and smaller variety, even if the seed costs a good deal of money. It is not good policy to take chances with the late varieties if the planting season is late. It won't pay to plant any kind of corn in wet or half-prepared land. Wait until the soil is in good condition, then slap it in quickly, and harrow well with the teeth of the harrow well inclined backward. Don't merely scratch it over, but make all the surface loose and mellow. One of the times a fellow must hustle is when he is getting his corn planted. The soil does not long remain in first-class condition for plowing, and he must roll it over in a hurry. Then he must harrow and plant as soon as possible after plowing. And to make the job complete, harrow again immediately after planting. After this is done he can rest up a few days.

Corn is the most important crop now grown, and if it is well grown it brings the grower a lot of money. The day of extremely low prices is past, and the corn grower can rest assured there never will be an overproduction of this great cereal, and he can well afford to take the greatest pains to produce every pound possible, knowing that there is a ready cash market for the crop as soon as it is gathered. The farmer who has a farm of good corn land should not attempt to grow wheat, nor more oats than he needs for his own use, but should stick to corn and clover, with pigs as a large side line, and flurries in Wall Street will have no terrors for him.

Fred Grundy.
N. D. C.

Review of the Farm Press

VIGOR IN THE FLOCK

Good constitution, and a breed adapted to the environment, are necessary conditions for a vigorous flock. Constitution is defined as "The aggregate of all one's inherited physical qualities; the aggregate of the vital powers of an individual, with reference to ability to endure hardship, resist disease, etc." Constitution is not a breed characteristic to any extent, if at all, but an individual characteristic. Breeds vary a great deal as to the environment to which they are adapted. The Merino, it is claimed by all who are acquainted with the breed, will live on shorter rations and stand more exposure to cold and yet retain their vigor than any other breed. A Hampshire flock, for instance, would starve out or die of disease where Merinos would thrive. It does not follow, though, that the Merino has a better constitution than the Hampshire. It must be remembered that what is natural and healthful environment for the Merino is privation and hardship for the Hampshire. The breeds are adapted to different conditions.

Some breeds are adapted to a very wide range of conditions, others to a comparatively narrow range; but there is little difference between breeds in constitution and vigor so long as each breed is in the environment to which it is adapted. Of course, when any breed is under its proper conditions it is not exposed to cold, heat or dampness to a greater degree than it can stand without much suffering, and is always well nourished.

There is a great difference, however, in the strength of constitution of different individuals of any breed. It is indicated by the form and appearance of the animal. A deep chest, front legs set wide apart, brisket coming well forward, well-sprung ribs—marks showing plenty of room for heart, lungs and digestive organs—are evidences, though not infallible ones, of good constitution. Stronger evidences of it, or lack of it, are to be seen in the motions and carriage of the animal, the poise of the head and ears, the expression of the eye, and the apparent spirit of the animal.

Constitution is an inherited characteristic, one that is born with the animal. Just as in other matters in breeding, not all the conditions affecting it are known, but it is as certainly transmitted from parent to offspring as any other trait. So that it is important that the progeny of only such animals as have good constitutions be retained in the flocks; and not all of them, for there is variation in this particular, as in all others, and parents of strong constitution sometimes have weak offspring. The evidences of good constitution should be required in the individuals themselves, as well as in the ancestry of those that are to be retained as breeders.

However good the constitution of a sheep may be, it cannot retain its vigor unless it be well fed. A hungry flock will not long be a healthy flock; nor will it retain its health and vigor if it be exposed to climatic conditions that are much more severe than those to which the breed has been accustomed. The breed must be adapted to its environment if the flock is to be vigorous. Probably the most common mistake of the sheep men of our state is the attempt to keep high-grade or pure-bred sheep under the conditions of feed and shelter that are adapted only to low grade or scrubs. An improvement in blood calls for a corresponding improvement in keeping.—C. E. Lewis in American Sheep Breeder.

ALFALFA AS PASTURE

There is in this, as in all other matters, a difference of opinion as to the value of alfalfa as a pasture crop. There is no question, however, in the mind of the writer as to its value for pasture for most stock, especially for hogs, horses, goats and poultry. It will furnish pasture for from fifteen to twenty hogs to the acre and double the amount of pasture that any other crop will give.

Where grown for hay or dry feed, it should never be pastured; if pasture is wanted, sow separate fields for this purpose.

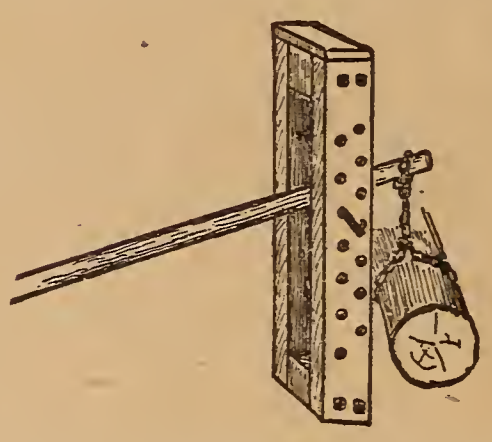
Hogs thrive remarkably well on alfalfa pasture, and cheap pork can be made by growing hogs this way; in fact, alfalfa has solved the hog-growing question, together with that of cheap pork for the South, as cheap pork can be made by growing hogs on alfalfa with an additional feed of corn slops and other feeds.

While alfalfa will produce hogs cheaply, yet they will need some grain to finish them off. Right in this connection let me say that on every farm there should be kept a few dairy cows to eat the alfalfa and pea-vine hay. A hand separator should also be kept, the cream sold, and the skim milk mixed with chop feed made from rye, corn, soy beans, cow peas and oats, all mixed and fed to the hogs cut finish them up for the market. In this way pork can be produced for two and one half to three cents a pound.

There is some danger in pasturing cattle and sheep on alfalfa, as it may cause bloat in both, especially when pastured wet. Where cattle or sheep are pastured, they should be allowed to run on the pasture only a few hours each day. This way the pasturing of both cattle and sheep may be made both safe and profitable.—F. S. White in the Kansas Farmer.

SAMSON LIFTING JACK

Here is a good thing which I use with great success in the woods. Make an upright out of two pieces of tough material six feet long, eight inches wide and one and one half inches thick, bolted together at each end, with four-inch blocks between. In this standard bore two sets of one-and-one-fourth-inch holes in each side; bore four inches apart and have



each set to mismatch, as in cut. Then use a lever twelve feet long, placed between these uprights, placing an iron pin in the holes under this lever. Fasten a good chain to the log and the short end of the lever, press down on the lever, and put another iron pin in the other set of holes. You can rock the lever back and forth over these pins and raise whole logs with ease.—Arthur Wetherell in the Practical Farmer.

PRUNING FRUIT TREES

Begin early in the life of the tree to shape it. A young tree should consist of a central leader with the main branches distributed evenly about it, forming a well-balanced head. On no account should a tree be set with a decided fork in the trunk. The point at which a limb should be removed is just at the upper part of the shoulder, which will be at the base of each limb where it joins the main trunk. If we cut closely, the size of the wound is increased without to any appreciable extent decreasing the size of the stub. If the cutting is further from the tree, the scar is still the same size, and a long stub is left over which it will take a tree years to grow.

If possible, avoid removing large limbs; and the best way to do this is to begin when the tree is young and prune it systematically and carefully. If it is necessary to remove a large limb, use a saw, cutting it a short distance from the bottom first, then saw down from above, and the limb can be removed without fear of splitting off below. Large wounds should be smoothed over with a knife, then covered with gum shellac dissolved in alcohol.

In general way, summer pruning promotes fruitfulness, while if wood growth is desired, prune in winter. The explanation of this is that great growth and great fruitfulness do not go together. A plant must reach a certain degree of maturity before it will produce fruit, and an abundance of plant food at the time the buds are forming is desirable for best results. Now, if by summer pruning part of the branch is removed, the growth is checked, and as the part removed lessens the demand for plant food, it can be devoted to the production of fruit buds. If the tree is allowed to go into winter quarters undisturbed at the end of the season, the roots and tops are in a sort of equilibrium, or balance each other. Now, if during the dormant period a considerable part of the top is cut off, a strong pressure of sap is brought to bear on the remaining buds and a greater supply of nourishment is furnished for growth of each. The result is that a large growth of wood results, and when the time comes the following season for the formation of fruit buds, plant food is not abundant and few blossoms are produced.—C. A. Green in Green's Fruit Grower and Home Companion.

IS THE CLIMATE OF THE PLAINS CHANGING?

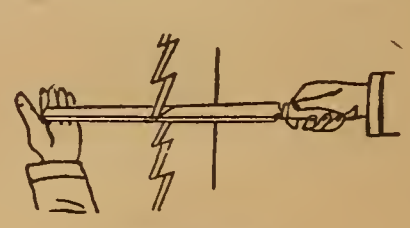
I can hardly accept the conclusion that the "beliefs" and experiences of the people of this country are all theory. I believe many of these so-called theories are not all theory, but partial facts, at least in many cases based on actual facts. For instance, there is no question but that the settling up of the Western Plains Region has had an ameliorating effect on the climate. Perhaps the total rainfall during a year may not have changed much, and doubtless the average temperature for the several months and for the year is about as it used to be. However, there is little question but that the extremes of weather are not so great as formerly. The rain falls more often and in less quantities at a time; the wind blows perhaps as much in a year, but not with such violence at certain intervals; and the hot winds still blow, but tempered more than they used to be by the groves and large cultivated areas over which the air now passes, where formerly it passed only over burning, hot prairies.

The old theory was that the hot winds came from the Panhandle. However, we know now that a hot wind may blow from off a large stretch of prairie pasture lying just south of a field of corn or cultivated grain. Without question, however, the settling up of the Southwestern Plains Region and the breaking up of large tracts of prairie has had some effect in decreasing the severity of the hot southwestern winds that blow over Kansas and Nebraska.

The people of this country should not lose sight of the fact, however, that although the climate may be somewhat changed by the local conditions, yet the general climate of the country is largely the result of great natural conditions and laws over which we have no control. We must expect that as the climate has been in the past, it will be again in the future, but affected more or less favorably by local conditions. The droughts may be less severe and their destructive effects less observed in the future than formerly. I believe it is a safe proposition in western Kansas and eastern Colorado to depend on irrigation rather than to trust too greatly in the profits of dry-land farming. At least Mr. More's suggestion is a good one that farmers of the West should make their plans during years of plentiful rainfall so as to safely pass through other years to follow when too little rain falls for the production of crops—A. M. Ten Eyck in the Kansas Farmer.

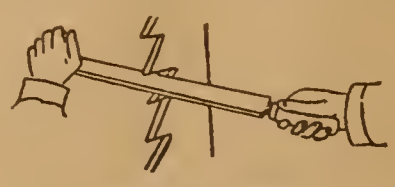
FILING A SAW

Almost any one can file a saw somehow, but there is a great difference in the result. It is worth while to pay an expert something to give a lesson or two. The drawings show the way to hold the file, and also a common mistake. The difficulty is to keep the file straight with



RIGHT WAY

the cutting edge of the tooth, and to move it evenly, giving a flat level edge, not a rounding or uneven one. The file should not be held with the ball of the thumb pressing upon the handle of the file, but the end of the file should be taken lightly between the thumb and forefinger, by which hold even pressure and level movement may be secured. In filing the base



WRONG WAY

of the tooth the end of the file should lightly rest on the finger ends. Holding the file beneath one hand, as in the other illustration, is sure to result in uneven pressure and a poor edge. The hands may be rested by changing the handle of the file to the left hand and drawing instead of pushing the file.—I. A. L. in the American Cultivator.

HOG LICE

If farmers realized how much money they lose by feeding hordes of hog lice from year to year they would certainly take measures to protect themselves from this intolerable pest. Lice are not much in evidence in the winter season. In fact, they do not visit much at that time of the year; but if farmers will observe their brood sows closely they may probably find more inhabitants of the hog pen than they suspect.

As the season progresses all the hog pens will be infested and the little pigs frequently seriously injured or literally eaten up before the farmer notices it. We remember once being called to a farm where it was supposed that hog cholera was taking off the little pigs. None of the older hogs seemed to be affected. After a close examination we told the farmer that if he would fill a barrel nearly full of rain water and put some kerosene in it, and then immerse his pigs in it, they would probably cease dying from cholera, which they did.

As soon as his pigs are old enough it would pay every farmer to dip his whole herd of hogs once a month, even if there was not a louse on the place. Dipping will open the pores, cleanse the skin, and increase the thrift of the hogs to a point far in excess of what he expects or what it costs in time and money.—Wallace's Farmer.

THE HALTER DRAWS

AND OF COURSE THE LAW IS DENOUNCED

One of our Michigan subscribers sends us a recent copy of the Detroit "News," in which is one of those "smart Aleck" editorials concerning the conviction of Alonzo L. Hart of that city for selling colored oleomargarine contrary to law and the imposition of fines amounting to six thousand dollars.

For monumental ignorance and unblushing stupidity—not to use the harsher term, undiluted mendacity—there is no class of people that can approach the average city editor when he attempts to write about oleo legislation and its enforcement. This Detroit editorial is a very good illustration of the truth of this remark.

For example, it says that the federal government has made it "a misdemeanor to color oleomargarine or to offer colored oleomargarine for sale." There is no such federal law, and never was, but there is a federal law making it an offense to manufacture and sell colored oleomargarine without paying the proper internal revenue tax.

Another example. The "Press" editor says: "There is an immense quantity of oleo sold, and the only explanation of its consumption is that it is purchased for mixing with butter which can be colored without offending the law." Not so. Any admixture of oleo with butter makes the compound as much amenable to the oleo law as pure oleo itself.

Another. This space writer, with a carelessness inherent in his class, says further that the manufacturers of renovated butter "buy up putrid butter, and after working it over with disinfectants and embalming fluids, to disguise its nauseous odor and taste, market it again as a pure and wholesome food." If he had cared to inform himself, he might have learned that every pound of renovated butter comes from factories which are carefully inspected and supervised by government inspectors, and that absolutely nothing in the way of preservatives or "embalming fluid" is allowed. Moreover, any butter which has become "putrid" or even approaches that condition cannot be renovated, and is sold as "grease." Renovated butter must be sold for what it is, must pay the prescribed internal revenue tax, which must be evidenced by stamps, like those on cigar boxes, and any attempt to dispose of it otherwise or to palm it off as something else will subject the offender to pains and penalties similar to those which overtook this Detroit citizen in whose behalf the "News" reveals its asininity.

The oleo law needs no defense at our hands. It was enacted to prevent men of the Hart stripe from cheating and defrauding his neighbors and assisting others to do the same. It gives no reward to honesty; it does not contribute to the upbuilding of monopolies; it offers every man his choice between oleomargarine and butter. Only this and nothing more.—Hoard's Dairyman.

Do you know that Springfield, Ohio, where FARM AND FIRESIDE is published, is almost the center of population of the United States? There is a great feeling of comfort and safety in being where you are surrounded on every side by an equal number of friends. That is the way we are situated. We are right in the heart of our big family of three million FARM AND FIRESIDE folks. No wonder we feel safe! They are the best folks in the country.

AGRICULTURAL INSTRUCTION IN OUR SECONDARY SCHOOLS

There is a growing tendency—and a dangerous one—of our national wealth, as well as population, to concentrate in cities at the expense of the rural districts, where it is chiefly created. But concentration of wealth and population are not all that is feared. It is the rapid transfer of national influence and political power from the home-making and liberty-loving democracy of our rural domains to the urban centers where the few are dominant. This is the great danger. It is made the text of a strong plea for efficient agricultural instruction in our secondary schools in the form of an article, by S. A. Knapp of the Bureau of Plant Industry, United States Department of Agriculture, which appears in a recent number of the "South Atlantic Quarterly," published at Durham, North Carolina. Mr. Knapp, in referring to the remedy usually offered for this—the study of agriculture in our high schools—asserts his grave doubts of the efficacy of such a course as at present conducted. So far, he declares, such instruction has not, practically, increased a love for the soil or made better, more successful farmers. On this latter point, he remarks:

"A man may be well versed in all the sciences that relate to agriculture, and yet be a failure as a farmer. There is a business side to farming, and it is the most important part—how to plan for the work and use the labor and teams to the greatest profit, how to economize in purchases and improve the farm to advantage. The schools unfortunately do not teach how to turn out at four in the morning and drive business relentlessly till the dusk calls to rest. The most failures in farming are on the business side and not on the scientific side."

Nor does the teaching of agriculture in the schools, as at present conducted, continues Mr. Knapp, in practise, promote rotation of crops, and thereby diversity of interest and increase of efficiency. But agriculture ought most certainly to be taught, first of all, because it is a necessary part of any broad, general education. We quote his words:

"Some knowledge of agriculture belongs to the equipment essential to a reasonably broad education, even a common school education. Botany and chemistry are taught in the secondary schools, not because the average pupil expects to be a botanist or chemist, or even to use them very much in practical life, but because they deal with the things about us, and explain them. Not to know something of these branches is to be considered ignorant. Just so the domain with which agriculture deals is all about us. More than half our population reside in the country. The material of which our homes are constructed, our food and our clothing are all of country origin and related to agriculture. Not to know something about the history and management of soils, plants and domestic animals is dense and unpardonable ignorance. Agriculture ranks with algebra and geometry, with geography, history and the sciences as among the common things that ought to be known as far as they can be through the limited instruction given in the secondary schools; and in my opinion agriculture is the most practical and important of all the branches with which I have above grouped it."

As to the practical question: How can the subject of agriculture be properly and effectively added to a curriculum already extensive and taught by a teacher already overworked? Mr. Knapp says:

"Increase the period for holding the school one hour daily, and devote this hour and half a day on Saturday to agriculture and kindred studies not now taught. At once I hear the objections that the teachers and pupils are taxed to their full capacity at present. Allow me to explain: There should be no books in this added work. All the knowledge should filter into the pupil by absorption, through object and doing lessons in the open air. Hence, they should be restful and invigorating. It is too common an American opinion that restful exercises consist in engaging in some physical folly that has no useful purpose. All such theories have their baneful effect on American character. Manly exercises without useful accomplishment are like the art of talking without meaning anything. All manly exercises should have a definite purpose and accomplish something useful to the world.

"An hour devoted to agriculture in a field laboratory after a day in the schoolroom would be restful as well as instructive. During the day these field lessons should be prepared by the instructors in agriculture, just as the apparatus is prepared and the problems assigned for the day to each student in a chemical laboratory. Some pupils would work with the soil to determine the relative value of deep and shallow tillage and the percentage of gain by frequent and thorough cultivation; others would deal with moisture in the soil, and note the effect on plants from insufficient, sufficient and superabundant moisture, the effect of temperature in soils, or of fertilizers upon the soils and how to apply them; the propagation of good seeds, their preservation and their value to the crop. There are almost endless problems along this line, all of which stand for millions of loss or gains to the farmers."

To sum up his viewpoint this writer says:

"It is my judgment that if agriculture should be added to the curriculum of the secondary schools in the text-book form only it would be more injurious than beneficial.

"That if taught by object lessons solely, the advantages would be very slight.

"That if taught by demonstration, each pupil being the demonstrator, and working out the problems on a little farm under his exclusive control, rewarded by the success and the sale of the proceeds, it would be of great value.

"Equal facilities should be afforded girls in the lines that will fit them to take charge of households.

"Every lesson taught in the school should be immediately applied to the farm and the home."

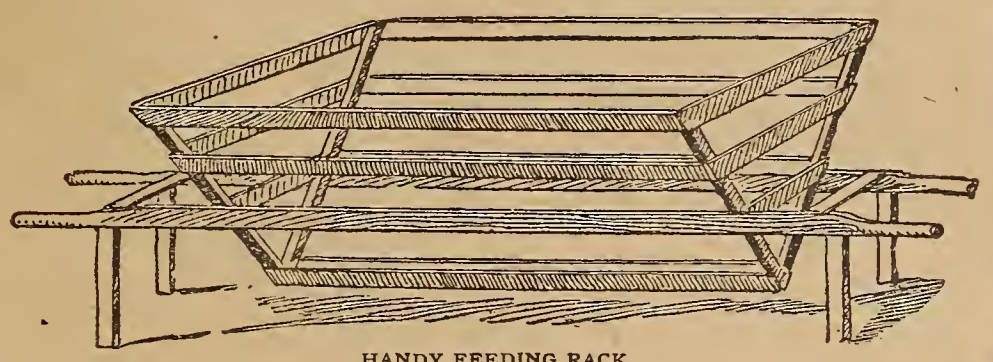
Real instruction for agricultural and industrial efficiency he believes is a national necessity. In conclusion he declares:

"The great battles of the future will be industrial battles. England, Germany, France, Japan and the United States are putting forth every effort to gain industrial advantage. At present the other nations excel us in industry; we are superior in inventive genius and machinery. When our machinery is combined with their superior industry—what then?"

Review of the Farm Press

HANDY FEEDING RACK

"I send you a drawing of a simple feed rack," writes a "Leader" correspondent, "which may be found suitable by many of your readers. I find it very handy in feeding loose hay or such fodder to large and small stock. The former can feed over the top, and the smaller through the lattice or panels. The rack and frame are separate, and when inverted and taken



HANDY FEEDING RACK

off the stand, the rack, in its inverted form, can be used as a fowl coop, and the stand can be used for many purposes—for holding tubs, vats, or such like. I find a convenient size, and which one person can handle, is four feet long by two and one half feet deep by two and one half feet wide, which is made of any strong stuff nailed strongly together and bound over the ends with hoop or fencing iron."—The Leader.

FEEDING THE COW BEFORE AND AFTER CALVING

The bowels at the time of calving should be in a loose condition. Such feeds as bran, grass, linseed meal, oats and middlings are very good for the cow about to calve. In fact, no breeder should be without bran when they own animals that are about to give birth to young. When feeding bran, make the grain ration from one third to one half bran. It is a very good plan to give the cow a bran mash for two or three feedings before and after calving. A bran mash is made by taking about what bran the cow will eat at one feeding and pouring boiling water on it, then covering with a thick cloth and allowing it to stand until the steam has thoroughly cooked the bran. Then a small handful of salt is stirred in well. Some people also stir in a handful of wood ashes. The mixture is then fed to the cow as hot as she will eat readily. Cows not used to bran mashes sometimes do not eat it well at first; but it is not long before they discover the merits of the dish and eat it quite greedily. The bran mash should be given especially when there is no grass pasture for the cow to run upon.

In case linseed meal is to be fed, more care should be taken not to overfeed the animal, as it is more laxative than bran and a more concentrated feed. Five or six pounds of linseed meal a day should make the ration sufficiently laxative in its nature for a cow weighing one thousand pounds. The linseed meal should be fed along with some other concentrate, such as oats or corn. The roughages should be such feeds as silage, roots and corn fodder.

Do not keep the animal in a confined stall up to the time of calving, but let her have the run of the pasture, field or paddock where she can get plenty of exercise. Immediately before calving do not feed her as large an amount of feed to the feeding as usual, but let it be rather lighter, and follow the same rule for a day or two afterward. Keep feeding the hot bran mashes after calving for two or three days. Never allow the cow to drink cold water at this time, especially just after calving, for it is very apt to produce chills. Warm the water enough to take the "chill off."—P. N. F. in Southern Ruralist.

SOY BEANS

As other grain crops, soy beans may be sown either in drills or broadcasted. Just which of these two methods are best will depend principally on what disposition is to be made of the crop—that is, whether it is being grown for hay or seed, and whether or not cultivation of the crop is desired. When planted in drills, about three pecks of seed to the acre is required, and when broadcasted, about five pecks are needed. The time for planting may vary somewhat from the middle of May until the first of July, or perhaps a little later, although the success of such planting will largely depend upon the subsequent conditions of the season. The soy bean is a hot-weather crop, and cold, damp weather is not the best for its development. Maturity can be expected in from one hundred to one hundred and fifty days, according to variety and growing conditions. Sowing in corn at the last plowing would hardly seem the best to us, but might prove a fair success. We would prefer, however, to grow them alone and plant as soon as possible after the season had well advanced. We are inclined to believe that rape sown in the corn would give better satisfaction, although we have had no practical experience with the soy bean. Rape matures in a shorter time and is as well, if not better, suited for use as hog pasture.—The Farmer's Guide.

GRAIN WITH PASTURE

There is no way in which a shoat can be made to gain so fast as by feeding corn or other grain in connection with grass. A little soaked corn fed daily while the shoats are on clover puts the animals in marketable condition. Feeders should remember that no one kind of feed is as good feed alone as when combined with one or two other kinds of feed. Both grass and corn are natural and excellent hog feeds, but neither one is as good as when combined with the other. Corn makes fat very fast when the system is in a healthy, thrifty condition, and nothing equals grass as a conditioner.

Grass and corn feeding combined keeps the animal in good condition to be marketed at any time after June to the middle of August. The best market is often during the summer months, and when the hogs are ready it can be taken advantage of and the grass used for younger animals.

If pasture is not available, rape and corn make a splendid combination, also peas and oats and corn. Whatever the green feeds, give the animal some grain with it, and hurry them along before the fall rush comes. A good allowance of slop twice a day, made of wheat shorts and water (milk if available), is excellent.—The Farm Star.

Gardening

BY T. GREINER

CO-OPERATIVE CANNING ESTABLISHMENTS

A NUMBER of neighborhoods, according to letters of inquiry received, are preparing to establish co-operative canneries. It would not be a safe course to go into any such complicated business without expert advice and guidance. Every concern of this kind, before beginning active work of construction or of purchase of machinery and equipment, should engage the services of a person thoroughly posted in all the details of the work. It is better to pay big wages than to make serious mistakes.

After the concern has once been started in smooth waters there will be plain sailing. An advertisement judiciously placed in an agricultural or trade paper may secure a suitable manager. People who just want to work up their own surplus of vegetables and fruits, and invest but a small amount of money in a home canning plant, should apply to the Secretary of Agriculture at Washington, direct or through their representative in Congress, for a copy of a bulletin on that subject, and for other information pertaining to the subject.

PLANTING STRAWBERRIES

There are probably few spots in the United States where it would not be possible to grow some kinds of strawberries with entire success. But, good friends, you must not imagine that you can grow any and every kind in any and every place, or that, because one sort does not do well, you cannot grow any other.

The old Wilson, for instance, is "run out," and practically out of cultivation in most places. But it is still a leading market sort with many of my neighbors, and last year I saw the finest show of berries and of healthy plants in a several acre Wilson patch within a mile of where I write this.

In many places the Brandywine is reported to be a berry of little value, because unproductive. I know of hardly a better one on my grounds, and plant it again.

I am also about to plant a good-sized patch of Gandy, which is about our latest berry, although not so firm, high colored or well flavored as Brandywine. But in this strong and moist loam it yields well, and it brings the price, coming a week or two later than the main crop. It has proved to be highly profitable, but it needs high cultivation to make it so. Here it is a good plant maker.

TOMATOES ON POLES

R. W. B., says he plants his tomatoes as he would pole beans, eighteen inches apart, with a pole six to eight feet long to each plant. Only one stalk is allowed to grow on each plant, and this is tied to the pole, and all laterals are cut off. There will be clusters of fruit at every joint, and therefore a string of tomatoes from bottom to top. To manage tomatoes in this way means more trouble and care in growing, but less in gathering them.

I have grown tomatoes both ways, on poles and on the ground. For a small garden, where one plants only a dozen or two of tomato plants, these grown on poles are often very satisfactory and quite ornamental. But they need a good deal of attention, and this promptly. I can grow more tomatoes with less labor and attention by letting them fall over on the ground than by giving them support of any kind.

Possibly if I had much trouble from black rot, I might use poles, and set fewer plants. As it is, I get perfect, sound fruit from my vines lying prostrate on the ground, and plenty of it. I therefore am too indolent and careless to resort to the plan of tying the plants to poles or other support. It is practical results I am after.

PLANTING SWEET CORN

For earliest sweet corn (and what a delicacy it is when we get it about July 4th or soon after!) we must take some risks. Here we are never entirely safe from late and often killing frosts until about the first of June. Yet I do not wait until then, but usually plant my first sweet corn just as soon as we have a few warm days in early spring, perhaps quite early in May, or about as soon as cherries are in full bloom.

The early sweet corn varieties can stand a light or white frost without much injury; but should the first planting come to harm, another will soon take its place. Peep o' Day is about as early as any, and a good one. Golden Bantam is early and very good. Of course, the ears of these, like the plants themselves, are dwarf, and we do not get our real fill of the delicious sweet corn until the somewhat later sorts, Metropolitan, Champion, Crosby's, etc., get to be of table size.

The real feast, however, begins only with the arrival of the Evergreen, Shoe Peg or Country Gentleman, etc. These later sorts I do not plant until the soil has become well warmed through, usually only after the middle of May and up to June, and for succession I plant again along in June. In some cases I have had good ears of Stowell's Evergreen in a patch planted as late as July 1st.

DWARF VERSUS STANDARD TOMATOES

The dwarf tomato varieties, like Dwarf Champion, Station, Dwarf Stone, Quarter Century, etc., are used by some as first early sorts, and are often well spoken of. I have grown them more or less, and like their sturdy, upright habit of growth. Yet I find that I get a good many more tomatoes on my plants of the Earliana type, of which I have my own selection of the Earliana, than on any of the dwarf sorts.

I grow only one of the latter now, the Nuevo, of the Honor Bright fruiting habit, and this more for a late than an early sort. This Nuevo seems to me especially valuable for a market tomato. I have never had a more attractive lot of tomatoes than those I gathered during September and October of last year from my Nuevo patch. The tomatoes are purple colored, very handsome, and of almost exactly even size and shape, really as nearly alike as one egg is like another from the same hen. This attractive appearance and uniformity alone will sell the fruit. I consider the quality good, although people may differ in their opinions on this point. I had quite a patch of them last year, but shall plant more this year.

SEEDLING TOMATO PLANTS FIVE WEEKS OLD

So far as the growing of the plants is concerned, all these dwarf varieties are highly satisfactory. They do not have the desire, as the ordinary tomato varieties have, to run up tall and spindling, but modestly remain close to the ground, short and stocky, as may be seen by comparing a five-weeks-old seedling of one with a seedling of the other of the same age. The plants of the dwarf varieties may be started just as early as those of the standard sorts, yet will be contented with far less space, and give just as good and stocky plants. In other words, we can raise more plants of the dwarf kinds on the same bench or hotbed space, and therefore more cheaply. If both kinds are equally salable, and at the same price, I would raise the dwarfs in preference to the others. As a market gardener I am after early fruit, and plenty of it, and know I get it from the kinds of the Earliana type more surely and abundantly than of the dwarf sorts, but as a plant raiser and seller I would rather grow the dwarfs.

You can nearly always tell a prosperous, up-to-date farmer. He not only keeps up his place, but he takes at least one farm paper—usually FARM AND FIRESIDE. Others cost more, but they couldn't give more. We may make less money—but more friends.

Fruit Growing

BY SAMUEL B. GREEN

CRANBERRY CULTURE

[CONTINUED FROM PAGE 1]

to remain covered during the winter. The freezing of the vines in the ice does not hurt them, but raising the level of the water in the bed after they are frozen, and thus raising the ice and tearing the vines out of the ground, is where the great danger lies. To avoid this the sluiceways should be kept sufficiently open to allow any surplus water to pass off.

The first two seasons the water should be kept on the vines until the last of April, but after that, or when the bog is in condition to bear, the water should be kept on until the last of May or first of June. The object of keeping it on so late is to prevent injury from late frosts, and to destroy the fruit worm and fire worm, which are the worst foes of the cranberry. If the fruit is covered with water in warm weather it is very liable to be ruined, but the vines are uninjured by such flowage. Throughout the growing season the water should be about twelve inches below the surface of the bed.

PLANTS AND PLANTING

In selecting plants great care should be used to get them from fruitful beds, as some are almost barren. There are very many named kinds, and they vary greatly in size, growth, time of ripening and productiveness, but it is doubtful if any of the named kinds, the most of which have originated in the East, are adapted to the climate of this section, and it is probably better for the present to depend on getting plants from the most fruitful wild cultivated beds near at hand. The kind most esteemed in the East is called the Early Black. It is very early and productive, though not a vigorous grower.

The cranberry plants grow very readily from cuttings, and on this account slovenly growers sometimes cut the plants in a hay cutter, sow the pieces broadcast and harrow them in, but that method of planting is not advisable. The most common way is to make cuttings of the vines about twelve inches long, which are doubled when planted, the flat dibber being placed in the middle of several cuttings, and they are pushed into the ground about four inches. The cuttings may be carried over a whole season with good success if they are kept covered with running water, but in stagnant water they would soon spoil. On this account they may be set at almost any season of the year if the flowage is controlled, but the spring of the year is generally preferred, and if there is no chance to flow at will it is by far the surest time to plant.

Before planting is commenced the bed should be marked off each way at eighteen-inch intervals. In planting, a wooden dibber is used, having an incurved or reversed wedge-shaped point, with which the cuttings are crowded through the sand down into contact with the bog beneath at one operation, without first making a hole, as is customary in the ordinary use of a dibber. After the cuttings are planted the water should be raised in the trenches sufficiently to keep the surface land a little moist, to encourage the rooting of the cuttings. The after cultivation consists in keeping the soil moist and giving clean cultivation.

PICKING

If the berries are allowed to fully ripen on the vine they will keep much better than if picked earlier, but where there is danger of frost before they are ripe the berries should be picked as soon as they commence to color, though when picked thus early they will seldom keep well after the middle of January. If severely frozen the berries are ruined, but they are not injured by a "white frost." Picking is generally done by hand, though some few growers "rake" them off the vines. The berries keep well in a dry, cool place, but they are more easily kept if covered with water.

WINDBREAKS FOR MONTANA

A. P. R., Farmington, Montana—I am very sure that the best windbreak for your section is what is known as the white willow. This tree is very successfully grown upon the bleak plains of North Dakota, and is as satisfactory as any tree that has been tried for this purpose. It is easily grown from cuttings, which may be obtained from almost any of the Northern nurserymen.

Then there are the native willows found along the streams in your section. Some of these grow to large size and make very good windbreaks, and are fully acclimated to your conditions.

SOD OR CULTIVATION FOR PEARS

J. B., a reader in Burdett, New York, says that for the first three years, after the orchard has been planted, he gives his pear trees good cultivation and manuring, and then seeds the orchard to grass, breaking this again once in three or four years.

It is true that thorough cultivation and heavy manuring with coarse manure favors the spread of the pear blight. But in this vicinity we have hardly had a case of malignant or fire blight for many years, and the danger is very slight. It is also true that we can raise full crops of pears on trees standing in sod, and if there is an abundance of rainfall during the last few weeks just before picking time (for the Bartlett during August) we may gather pears of very fair size; but when that period happens to be rainless, the chances are that the Bartletts will be undersized, more or less gnarly, and perhaps to a large extent unsalable. That has been our experience here.

For dwarf pears I would not advise any one to let the trees stand in sod. It will mean ruination to the trees, and unprofitable crops right along. The ordinary run of standard winter pears are not so particular, and we have usually grown very good crops on trees even in sod. G.

NUT AND FRUIT GROWING AS A BUSINESS

J. K., Orange City, Iowa—Nuts and fruits can be grown in some sections to excellent advantage, but so much depends upon the location, as well as upon the capacity of the individual to give proper care to the trees, that it is impossible to state what kind of success you would have in this way. In some sections of the country, as, for instance, in some parts of southern California, the English walnut is grown to good advantage; likewise, in parts of Texas and Louisiana the pecan does exceedingly well. But there are locations where these nuts can be grown, but at only a small profit.

Success in this as in other lines of work, is largely a personal matter, and I would suggest that if you are contemplating going into fruit and nut growing, that you visit the fruit and nut growers that you can reach easily, and talk with them in regard to the matter. A little money spent in this way will well repay you if you seriously think of going into this line of work.

The value of nuts varies in different years. Chestnuts occasionally command as much as eight or ten dollars a bushel. Pecan nuts frequently sell for six to eight dollars. Hickory nuts are generally worth about one dollar and fifty cents or two dollars a bushel.

The best book on nut growing is a publication of the United States Department of Agriculture, entitled "Nut Culture," which I think you can obtain through your congressman free of charge upon application. You might also address the United States Department of Agriculture, Washington, D. C., in regard to the same matter.

TARDY-BEARING APPLE TREES

C. H. W., Lynd, Minnesota—We find there are some varieties of apples that are so slow in coming into bearing that it is not worth while to wait for them. Such is true of a large number of Russian sorts that were introduced into this country about twenty-five years ago. Some of them bear an apple or two occasionally, but others bore not at all for more than ten years, although they looked as healthy as an oak. Sometimes these trees bloom a little and fail to set fruit. Other varieties sometimes fail to set fruit, by reason of the fact that the flowers are not properly pollenized. This, however, is seldom the case where there are a number of varieties growing in the same orchard. Sometimes the flowers are spoiled by pest or disease.

If I had trees that were barren in this way, I should be inclined to top work them with more desirable and early-bearing varieties.

All through Minnesota and in adjoining states the Peerless has been sold in large quantities, and it is generally a disappointment, from the fact that it is non-productive in many localities, while occasionally it bears well. I saw the original tree of this about fifteen years ago when it was loaded with fruit, and why it is that the grafted fruit is so slow in coming into bearing, and so unsatisfactory, I cannot tell.

PLUM TREE NOT BEARING

B. K. W., Mount Gilead, Ohio—Probably the only effectual way of bringing the plum tree referred to into satisfactory bearing would be to graft or bud it, at the proper season of the year, with some of the more reliable kinds of plums.

Poultry Raising

BY P. H. JACOBS

COLOR AND QUALITY IN EGGS

Some prefer dark eggs; but the color of the shells does not determine the quality of the eggs, nor does a deep color of the yolk indicate that such an egg is of better quality than one containing a pale yolk. There is more nutritious matter (nitrogen, phosphates, etc.,) in skimmed milk than in cream, the real nutritious matter of the egg being its white, or albumen, the yolk being mostly carbon.

The chick is produced largely from the white, not the yolk, but absorbs the yolk into the system, as food, just before it emerges from the shell, and hence the yolk is a provision for the food of the chick after it leaves the shell more than for any purpose it serves before hatching.

The color of the yolk may be influenced by the kind of food, but the white must be complete in all the elements of growth, or the chick cannot be formed from the egg.

WORK AND FILTH

The smaller the poultry yard, the greater the accumulation of filth. If the flock is large the yard soon becomes a nuisance, especially in the winter. Even in spring and summer every square inch seems to be covered with the droppings at some time during occupancy of the space, and the fowls cannot keep themselves clean; neither can they pick up substances to eat without swallowing a portion of the filth. The yard should be scraped over with a hoe every few days, and also spaded or raked deep every week. It will take but a few minutes' extra time each day for such work in the yard, after once being spaded to the depth of ten inches, and unless done the owner may as well conclude to lose his fowls from disease and neglect during very warm weather. Many flocks are kept in yards where there is no shade. This usually happens in the suburbs of towns and cities. The hens are exposed to extreme heat during the day, while the poultry house is also high in temperature, the additional warmth of the hens' bodies being added to that which is absorbed by the wood during the day. Corn is heating, and causes some of the hens to succumb to the heat during the summer, while lice breed rapidly and contribute to the inconvenience of the fowls. The object should be to keep the quarters clean and cool in summer, and allow as large space in the yards as possible, even if the number of hens in the flock must be reduced.

FAILURES ON LARGE FARMS

It is claimed that in the face of hundreds of experiments the number of large poultry farms that have fulfilled expectations is very limited. The claim may be true, but the failures with small numbers have also been noticeable. It may be said, in advocacy of large poultry farms, that some of them have never been given a fair trial. Nearly all such enterprises have been entered upon with the object of securing large sums from small areas; that is, the large poultry farms have really consisted of a large number of hens on small plots of ground, the flock being too great for the space occupied. The hen has never been given the same opportunity as the cow. She has been compelled to do duty on a limited area, and on the intensive system. The poultry houses are made to perform service to the fullest capacity, the value of the breeds has not been understood, disease and vermin have been introduced by procuring extra fowls from unknown yards, and inexperienced help has caused loss. The successful farms have been the results of years of experience, and the owners have largely depended upon their own superintendence and observation. No business will pay unless rightly managed. Some of the dairy farms give twice as much profit as others, due to intelligence and business methods, and the large poultry farms cannot be successfully operated unless carefully managed in the same businesslike manner.

THE RETURNS FROM THE OUTLAY

The importance of the hen on the farm is overlooked by those who do not really estimate the value of her product. If she produces but little in proportion to that derived from other live stock she represents but a small investment of capital. To lay eggs is to produce the richest and most nutritious substance that can be obtained from the farm. The hen is capable of giving an annual profit exceeding her value. An estimate of the amount required for the purchase of the hen, her feed, and the products to be derived, estimating at the usual market price (the average value of hens, at fifty cents each), the food being based upon five pecks of corn or its equivalent per annum, should not exceed one dollar. If she lays only eight dozen eggs a year (less than one hundred), at fifteen cents a dozen, she produces one dollar and twenty cents.

This is only twenty cents above the cost of the hen and food, but it is a large percentage of profit on the cost of the hen, and also on the food consumed, as the hen will remain as stock on hand. If she hatches and rears a brood of chicks, her profit will be more; and if she does not sit, she may increase the number of eggs.

There are other expenses, however, as the quarters cost something; but they are permanent, and are fit for service for a number of years. The hen may be credited with twenty-five pounds of highly concentrated manure every year, which will pay for her share of the quarters.

While the profit from a hen may not be large, compared with other stock, yet it is much above the ordinary if the amount of capital invested is considered. A profit may be small, yet be large proportionately. The estimate of one hundred eggs a year is the average for large numbers. On the farm, where fifty to one hundred hens have ample room, the average may be estimated at two dozen more of eggs, which makes a large difference in the profit. It is fair to assume, also, that the estimated quantity of food is high in comparison with the estimated prices and number of eggs mentioned above, as the cost of maintenance is much less in some sections of the country than in others.

THE ORNAMENTAL BREEDS

On farms the ornamental breeds are not given much consideration, but there are exceptions. Children delight in keeping Bantams, and with good care some of the ornamental breeds, or those kept as pets, prove quite profitable. As there are many varieties of standard-size fowls, so are there also several varieties of the Bantams. Perhaps the most popular of these birds is the Black-Breasted Red Game. The majestic strut, proud carriage and beautiful contrast of feathers, to say nothing of the flowing sickles of the tail, make them an object of beauty to all. They are perfect facsimiles of the larger breeds, possessing their courage, disposition and table qualities.

The Pyles and Yellow Duckwings are also well known, and are fully as desirable. There are also Brahma Bantams and Polish. The Seabrights are beautiful birds, the hens being nicely laced, but the cocks have hen tails. The Golden and Silver Seabrights are nearly identical in marks, the only difference being the gold and silver shades. In order to preserve the regularity of the lacing, these breeds have been bred with more difficulty than some.

It is best to buy a trio of fowls in preference to running the risk of failure with eggs. Every little girl and boy should be given a trio of Bantams to begin with. The interest thus created not only amuses, but instructs, them, as quite a degree of skill is required to keep them true to the feather. Bantams, though small, are not unprofitable, as they lay large eggs in proportion to the size of the birds, and they give quite a proportion of flesh, considering the small amount of food consumed by them.

There are some breeds that are ornamental, and those who select them do so with a view to possessing a beautiful flock as well as to secure a large number of eggs. The Hamburgs and Polish are non-sitting breeds, and stand at the head of the line in beauty and plumage. To have them at their best they should never be crossed with other breeds, or they will be classed with scrubs. Deprive them of a single point and their true value as distinct breeds is gone. The White-Crested Black Polish is perhaps one of the most beautiful birds known. Its large white crest contrasts elegantly with its lustrous beauty of plumage of body, and a careful selection must be made to secure perfect specimens, as they cannot be improved by any manner of crossing.

EQUALIZING THE COST

The farmer gains in certain directions according to the season of the year. If he operates an incubator, and does not get his broilers to market early, there are compensating "offsets" that enable him to make a profit. In late spring or in early summer, when eggs are fifteen cents a dozen, it is then less costly to operate the incubators. To fill an incubator with eggs at thirty cents a dozen largely increases the expense.

It is the rule that the prices of fowls in winter are higher, and also that large sums can be obtained from very early spring chicks, but a difficulty arises from the fact that fewer chicks can be counted upon, as eggs in cold weather are not usually as fertile as those of the warm season.

It is evident, therefore, that if prices are not as high in summer, the cost of production is lower, and the profit also largely depends upon the labor applied, as well as the favorable or unfavorable conditions of the weather.

HARD AND SOFT FOODS

With the use of dry foods the fowls can select the kinds of food preferred, and are not forced to swallow water unnecessarily. The hard food, if composed of whole grains, may be scattered or fed in troughs, and there is then but little competition between individuals. The practise of feeding soft feed to the fowls on the ground should be condemned. It has been claimed that the more sand, grit and dirt taken into the craws of the fowls with the feed, the better; but the ground plan conduces to disease, for there is a constant accumulation of filth, to say nothing of the disease germs, on such places. Either feed on a long, clean board, or from a trough, for fowls prefer cleanliness to filth at all times. It is also wasteful to throw food on the ground, to be trampled into the mud on wet days, there to ferment and render the premises uncomfortable and disagreeable to the fowls and their attendants.

The six flocks comprise two hundred fowls, and as the birds are all white, the uniformity of color renders the grounds and birds attractive. They are kept as layers of eggs for market. The house has windows, front and rear, which can be easily closed, in summer being well ventilated. The doors are at the ends, with doors in the partitions—no passageway. Each apartment is 12x20 feet, with yard 12x100 feet

Lincoln said the Lord must love the common people or he wouldn't have made so many of them. We are glad he does, for FARM AND FIRESIDE is proud of the fact that its whole big family of over two million—editors, employees, readers, owners and all—are of the common people. The world has no use for snobs and very little for aristocrats. Every man in the history of America who has accomplished great things has been in sympathy with the people—their leader. We are glad our big family has no aristocrats. Our people are the best in America.

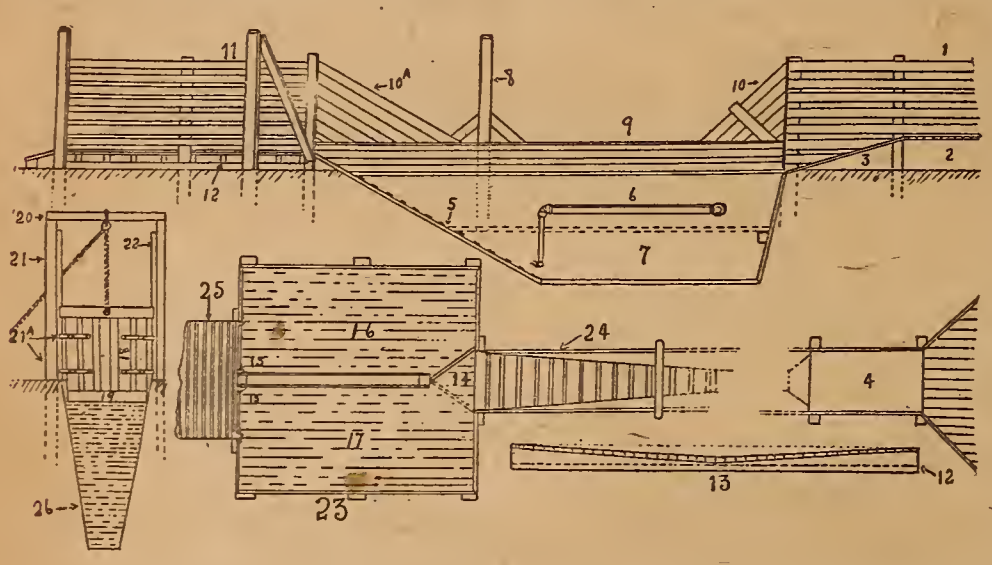
Live Stock and Dairy

A PRACTICAL STOCK-DIPPING PLANT

CAREFULLY noted results covering years of experience in dipping animals, cattle, sheep, hogs, and even horses, demonstrates beyond peradventure that dipping is sometimes necessary, always beneficial and that it pays in either case, whether for scab, lice, mites or ticks, or merely for the cleansing and toning up of the pores of the skin, exciting a healthy action and promoting vigor in throwing off the accumulating scurf and a freer growth of hair and wool.

We have made a practise of dipping all our stock twice a year—spring and fall—the sheep after shearing in the spring and again before cold weather sets in, and any of the stock at any time during the summer that their condition seems to indicate the need of it, although this applies more particularly to the cattle and hogs, the calves and the lambs, the spring pigs usually going through the summer with a clean skin and free from parasites, providing they are kept separate from the old hogs, as we keep them. However, if they at any time show any evidence of a diseased skin or of parasites they are dipped forthwith.

We use for all our stock and for all the infections named some one of the ready prepared coal-tar dips, such as are advertised in the farm papers for the purpose, following pretty closely the directions that accompany each package in making up the solution. Where it is necessary to make up a large quantity, such as required to fill the tank for dipping cattle, we always try to arrange to dip all the stock at one time, although with the number we have it takes more than one day to complete the work. By dipping all in one batch of solution, adding to it as the supply is lowered by that carried away by the animals, a considerable saving is possible. Then, too, when the water is heated and the heating plant going, it is as easy to dip a hundred as one.



Some farmers with whom I have talked feel that they do not have enough animals to justify the expense of putting in a practical dipping plant. In such cases they might follow the example of some of the farmers in the Central states who have partnership or neighborhood plants; a sort of co-operative affair, where each man in the ring or locality contributes toward the expense of building and operating the dipping plant in proportion to the number of head of stock that he owns or intends to dip. In this way, too, there is a saving in the cost of the dip, although that is small at most, since the tank may be filled, and, all helping in the work, the stock of one after the other may be dipped in succession before the tank is emptied and cleaned.

The dipping plant should be built in a sheltered place if possible and so that it may have connection with a large yard, where the animals may be penned before dipping, with access through an alley to another part of it or to a separate pen for holding the animals after dipping. All this will depend on the number of animals to be dipped and the arrangements that may be made for caring for them otherwise.

Our dipping plant is made on the lines of the drawing and working plans shown in the accompanying cuts. The arrangement for heating the water is very simple and so cheaply put in that the cost is hardly a consideration, since it saves the cost of a steam heater or steam feed cooker, that otherwise would have to be connected for the purpose; and the fire pit being long and wide enough to receive knots, pieces of stumps, etc., the fuel used need not be an item, as it often helps get rid of a lot of rubbish.

The fire pipe or the pipe laid in the fire pit is eight feet long, permitting the water to become quite hot as it circulates through the pipes, being drawn from the bottom of the tank and discharged at about a quarter way down from the top. This has been one of the bugbears of dipping, the trouble in keeping the water at the proper temperature to prevent the animal from chilling, and I believe that the arrangement here shown solves the problem satisfactorily.

The lower pipe leading out from the tank to the fire pit is two-inch, the vertical piece connecting with horizontal heating pipe is two-and-one-half-inch, the fire-pit pipe three-inch and that leading from the fire pipe back into the tank is one-inch, all connected by reducing elbow couplings and with the tank by lock nuts. These sizes placed in the positions indicated prevents a too rapid flow of water, allowing it to remain longer in the fire-pit pipe before being forced by circulation back into the tank. The fire pit should be placed ten to twelve feet away from the side of the tank, to obviate the possibility of danger to the plant from flames or live cinders, and fifteen or twenty feet would be better. The fire pit should be lined with pieces of sheet iron, to prevent crumbling in of the walls, although for a good permanent wall we use brick, which is preferable.

The size of the tank is not arbitrary, since it may vary in size to meet the individual ideas of the builder. Neither will it be found necessary to conform precisely with the other measurements given in this description of dimensions, either of lumber or completed sizes. I will describe the plant that we have in successful operation, and the reader may vary his plant to meet his requirements.

The tank, sectional view of which is shown in the upper portion of the main drawing, is seventeen feet long on the top, or ground line, seven feet deep and eight feet long on the bottom. In width it is eighteen inches at the bottom and forty inches at the top. This gives ample room for the movement of one large animal or for two or three calves or young stock, and for half a dozen or more of sheep or hogs. When we dip hogs, sheep and young calves we put in a false bottom, as shown by the dotted lines just above the figure "7," which, while preventing them from going to the bottom, with the possibility of being crowded over and held down by others, still permits them to be completely submerged in the dip. This bottom is made of slats laid crosswise on two-by-six pieces, the end resting at "5" on one of the climbing slats and the other on a crossbar, as indicated.

The main essential in making the tank is that it should be substantial, of water-tight and water-proof material and that may be readily cleaned after dipping. Our tank is built of a two-course wall of brick covered with a mixture of equal parts of fine sand and Portland cement, having a facing of pure cement. Being in a protected location, it has never been disturbed by freezing and thawing. Tanks may be bought ready made of any desired size from manufacturers, built of heavy galvanized iron. For general purposes they are probably the most satisfactory, and their purchase advised, providing expense is not a serious consideration. A tank may be built of boards and lined with sheets of light galvanized iron or the surface coated with some good water-proofing material or wood preservative that will answer the purpose. In this case it is necessary to use matched boards. Indeed, I have seen tanks made of ordinary lumber, with the cracks or joints covered with lath underlaid with cloth, that have done good service for years, aside from being very cheap of construction.

Both the forcing and the dripping pen are sided or fenced in with two-by-four-inch stuff, for in the excitement incident to dipping the cattle will crowd and jam against the sides more or less, depending upon their disposition and the environments of their growth or feeding. All of the side posts should be six by six inches, and six by eight would be better, deeply and firmly set.

The forcing pen, the floor, at "2," of which is raised some thirty inches from the ground level, to provide a slideway into the tank, spreads at the post just to the left of "1," as indicated in the drawing immediately below showing the floor plan. This forms the apex of the forcing pen. At "3" the slide is built of two-inch plank, covered with smooth galvanized iron, so that when the animal once sets foot on this floor it will provide no foothold, and it will perforce slide into the vat. A gate may be placed across this opening, but we have not found it necessary, since the animals do not go near the tank of their own accord. A guard of the same material as the sides is built at the end of the slide, as shown at "10," to obviate any attempt to jump over as the animal leaves the slide.

A guard is built at the sides the full length of the tank, as at "9," of matched boards, to prevent the animals climbing over the side while confined in the tank. Fig. "8" represents the post for sliding gate and manner of bracing. The plan of gate is shown in detail in the lower section to the left of group of drawings.

The post, "21," for this gate should be at least six by six inches, and six by eight would be better, and these are bound together at the top by "20," four by four inches, halved into top of post. The gate frame stands eight feet from upper edge of tank, or ground line, to inside of crosspiece.

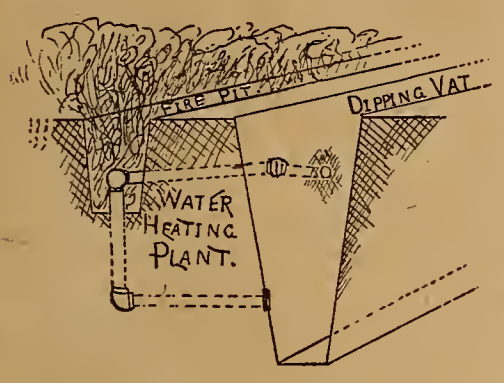
The top and bottom, "19," of gate is of two-by-six-inch stuff, cut three fourths of an inch shorter than distance between posts, to allow free play in sliding up and down on the iron flange guide, "22," fastened to post by screws on the right angle of the L. A notch half an inch wide and two inches deep is sawed into the ends of "19" to receive guide, and pieces of strap iron, "21a," are bolted on, as shown, to re-enforce the center of gate against the strain that is frequently brought to bear on it by some of the more excitable animals in trying to force their way out. The pieces, "18," are one-by-six-inch fencing boards. The lower part of the gate is made of just the right width to be admitted six or eight inches below the water line of the dipping tank, to prevent the animals from poking their nose or horns under gate to lift it and escape before thoroughly "dipped." No. "26" in this cut shows a sectional view of the tank, indicating the taper from top to bottom.

Another guard, "10a," is placed on either side of tank between gate frame

Live Stock and Dairy

and draining platform, the fence around which is shown at "11." The floor of this platform is sloped from outer edge to center, as in figure "13," so that the drippings from the animals may be run back into the dipping tank. The floor joist, "12," are two by eight inches, sixteen feet long, each sawed, by pattern, from full width at sides, or ends, to four inches at center. These are supported by floor timbers or brick pillars at frequent intervals.

There is but one gate at "14," and this swings on the post forming the end of the division fence, so that the animals as they come from the tank on the cleated incline, "24," may be run into one side of the dripping pen until that side has its quota, when the gate is swung to guide them into the opposite side, leaving the animals in "16" to drip until "17"

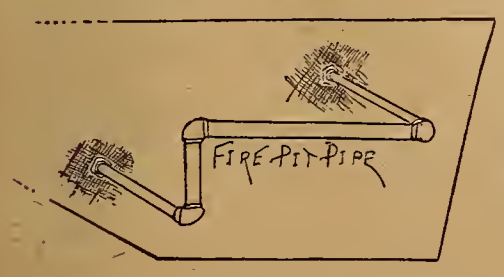


is full. By this arrangement a good many barrels of dip will be saved in a day's work. There is a gate, "15," at each side of the partition opening onto the incline, "25."

The floor of this dripping pen, "23," must be of matched lumber, and the joints made perfect and tight, to prevent leaking and rot of timbers. Before using our plant we give this floor a good coat of boiled oil, applied while hot, to seal the grain of the wood and avoid decay, while any cracks that may appear as a result of shrinkage are tightly caulked with oakum.

The cost of such a dipping plant will depend upon how much of the material needs be purchased, since nearly all of the work of construction may be done by the regular labor on the place, with the possible exception of coupling up the heating arrangement and the expense of a manufactured tank, if one is considered preferable, or the material for lining a wooden one, or for the cement to build a concrete tank. Our plant was built from timber cut on the place, so that the only expense, practically, for this was the sawmill bill.

In concluding it seems pertinent to say that no farmer or stock raiser who is looking to the greatest profit to be had from his work should neglect to dip his stock two or more times each year, for while none of the parasites common to stock may directly cause the death of the animal, they will, if no preventive measures are taken, cause more or less loss,



generally more, and will inevitably lead indirectly either to the death of the infected animal or to a condition of worthlessness, to the end for which it is intended, which is all one and the same thing, so far as profit is concerned.

This may be said to apply particularly to sheep in the case of scab, since, where unchecked, it will produce a loss of not only both flesh and wool, but the death of the sheep. The wool is lost by the frantic scratching of the animal against sharp corners wherever found, that destroys not only the fabric of the wool, but pulls out large quantities, sometimes, as I have seen in large flocks, leaving many practically denuded of wool on the sides. Because of the effects on the skin the animal cannot properly assimilate food, and often practically starves to death as a result, especially where the ration is not heavy and of a highly nourishing nature, thus opening another loss account, because the animal does not get the full benefit of the amount expended on it for feed.

With young animals there is generally a considerable loss from parasitic infection, no matter how much food they consume or are offered, for under such conditions they seldom, if ever, are thrifty, and will certainly lose flesh. The thousands of tormenting parasites on lambs, calves, pigs and colts cause so much irritation that they will often leave their feed to scratch and rub themselves. While this is of course true of the more advanced or aggravated cases, it should be remembered that where even but one animal in a flock or herd is infected, there is no knowing how far the infection may reach or how great the damage that may be caused. Immediately any of these pests appear in evidence radical steps should be taken to eradicate them and to prevent their spread, and dipping is the best cure for and insurance against them.

R. M. WINANS.

FEEDING COWS

I have never kept a large number of cattle at a time, but thirty-five years' experience with a limited number each year convinces me that the main trouble with the family and farm cows reported to have been ailing, and in some cases dying, was improper feeding.

A cow cannot be expected to do well, to winter safely, much less to give a good lot of milk, if fed nothing but corn stalks, or timothy hay, and perhaps straw, and a few ears of corn a day. The most essential part of the ration—the blood and muscle and milk forming material—is missing. Our milkmen around here understand this well enough. They buy great quantities of brewers' grains, gluten feeds, etc. It is more generally the cow kept for some style of butter making on some farms, and the family cow, that suffer. Some of these cows die, others manage to just live through the winter, and many have troubles with their udder, etc.

For the grain rations for my cattle I have to depend mainly on wheat bran and oil meal, which are among the safest things, with the addition of a little oat meal, to furnish protein to stock. If I could readily procure buckwheat middlings, I would use them largely. A pound of buckwheat middlings is known to contain more protein, this most important element of the ration, than three pounds of ground whole buckwheat.

To an inquirer who reported having the common early winter troubles with cows, and who was feeding ground buckwheat and corn largely or mainly as a grain ration, Dr. C. D. Smead, a reputable veterinary surgeon of this state, gave the following advise:

"Stop having the buckwheat ground; stop the cornmeal for your cow; trade the buckwheat for the buckwheat middlings, and the corn for wheat bran and oats, which last have ground, make up a mixture of equal parts, and feed your cows liberally upon it."

Since adopting my present method of feeding (bran, oil meal, oats) I have never had the least trouble with any cow, in good wintering, in calving, in the prompt expulsion of the placenta, or in milk production. The calves, too, are unusually strong.

I just now have one full-blood Jersey heifer, a little over a year old, which has been brought up mainly on oil-meal soup, with bran and oats, but very little milk, and she is a well-developed animal, handsome as a picture, and giving promise of the making of a fine cow.

T. GREINER.

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FARM AND FIRESIDE

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◈

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◈

Every farmer should have a well-kept lawn around his home. It will actually add dollars to the value of his place, and the added attractiveness will be a source of pride, if nothing else. Keep your grass mown and plant a few flowers here and there. You will be surprised how much more attractive your house and yard will be.

◈

David Harum once said some horses have as much sense as some people—and more than lots of people. "Horse sense" has long been a quality that most of us would be proud to have. This term originated on the farm, where, more than anywhere else, the people have "horse sense." As we have said before, it is something to be proud of. We are glad the FARM AND FIRESIDE family is made up of "horse sense" people. "Horse sense" is the plainest and best common sense there is.

◈

RAILROAD INVESTIGATION

Several weeks ago railroad manipulators and Wall Street stock gamblers were thrown into a frenzy of fear over the rumor that the federal government was going to make a thorough investigation into railway affairs for the purpose of squeezing the water out of all railroad stocks and making a true valuation of all railroad properties.

Of course they have the best of reasons for their dread of such action. Exposure of their methods might, as it ought to, break up their game of accumulating other people's money, but their greatest fear is that enforcement of law will take away from them what does not belong to them and restore it to the rightful owners. Being responsible for the stock and bond deals and knowing the inside of railway affairs and the vastness of the frauds practised on the public, they have reason to fear the storm that will surely follow complete investigation and publicity.

The Sundberg committee recently made a preliminary investigation of railroads in Minnesota, and reported its findings to the legislature as follows:

The actual value of all the railroads in the state is $215,000,000, while the capitalization and funded debt aggregate $400,000,000.

The roads are worth, on an average, $27,000 a mile, and are capitalized at $50,000 a mile.

Their net earnings average $5,000 a mile, or eighteen per cent on their actual value, though many of the lines are unable to pay dividends.

The water in the stocks of these companies is $185,000,000, much of it represented by bonds on which interest has to be paid before stockholders can get anything.

Reviewing a special case that illustrates the swindling features of railway financiering, the report says that the Chicago Great Western was built by A. B. Stickney, who raised the funds by acquiring, organizing, reorganizing and "Harrimanizing" divers and sundry corporations of Minnesota, Iowa and Illinois; and the committee found the capital stock and funded debt of this road to be $143,668 a mile, while its real value is about one fifth that, or $28,000 a mile.

The committee recommends that a "commission of three be empowered to investigate generally into the capitalization of the railroads of Minnesota and the relation the stocks and bonds bear to the value thereof, and the enactment of such appropriate legislation as the conditions disclosed demand."

Here we have outlined the probable course of events in every state in the Union—investigation, publicity, righteous indignation and railroad legislation.

It is not surprising that in the course of a year the paper value of the Hill and Harriman railroad stocks has shrunk $600,000,000. The real value of the railroads, however, actually increased, and the transportation business was larger than ever before. The shrinkage was all water, but not all of the water in the stocks.

But what does all this overcapitalization and stock-juggling concern the farmers? As a rule, they do not hold railroad stocks or gamble in them. They seem to be more interested in the green bug in the wheat than in the slump in stocks. In fact, farmers are vitally interested in reforming railroad management. Transportation evils injure them most, of all people. Railroad manipulation affects the value of every acre of land, and the home price of every farm product. Nearly all the interest on bonds, dividends on watered stocks and millions stolen by manipulators come eventually out of the pockets of farmers through high transportation rates. Under its system of controlling railways Wall Street milks the farm morning, noon and night.

Minnesota furnishes a good illustration of how the farm price of farmers' products and the cost of his supplies are affected by dishonest management of the railroads. The net earnings of nearly eight thousand miles of railroads in that state amount to nearly $40,000,000, or eighteen per cent of their actual value. Under honest management, with a fair dividend of six per cent on the actual value of the roads, the people would have saved in one year by lower transportation rates nearly twenty-six and two thirds million dollars that went to swell some stolen fortunes.

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THE PRESIDENT'S JAMESTOWN ADDRESS

At the opening of the Jamestown Exposition, held in honor of the three hundredth anniversary of the landing of the first English-speaking immigrants in America, President Roosevelt delivered an address that will be handed down as one of the greatest state papers in our history. It is more than a state paper or formal address—it is a finished oration of the highest order.

Reviewing briefly the critical eras in our national life, and drawing patriotic lessons from the Jamestown settlement, the colonial period, the struggles of the pioneers, and the Revolutionary and Civil wars, he leads up to the climax of the oration—the greatest problem of the present day—and says:

"In industrial matters our enormous prosperity has brought with it certain grave evils. It is our duty to try to cut out these evils without at the same time destroying our well-being itself. This is an era of combination alike in the world of capital and in the world of labor. Each kind of combination can do good, and yet each, however powerful, must be opposed when it does ill. At the moment the greatest problem before us is how to exercise such control over the business use of vast wealth, individual, but especially corporate, as will insure its not being used against the interest of the public, while yet permitting such ample legitimate profits as will encourage individual initiative. It is our business to put a stop to abuses and to prevent their recurrence, without showing a spirit of mere vindictiveness for what has been done in the past. In John Morley's brilliant sketch of Burke he lays especial stress upon the fact that Burke more than almost any other thinker or politician of his time realized the profound lesson that in politics we are concerned not with barren rights, but with duties; not with abstract truth, but with practical morality. He especially eulogizes the way in which in his efforts for economic reform Burke combined unshakable resolution in pressing the reform with a profound temperateness of spirit which made him, while bent on the extirpation of the evil system, refuse to cherish an unreasoning and vindictive ill will toward the men who had benefited by it. Said Burke, 'If I cannot reform with equity, I will not reform at all. . . . (There is) a state to preserve as well as a state to reform.'

"This is the exact spirit in which this country should move to the reform of abuses of corporate wealth.

SCANT MERCY FOR THE WRONG-DOER

"The wrong-doer, the man who swindles and cheats, whether on a big scale or a little one, shall receive at our hands mercy as scant as if he committed crimes of violence or brutality. We are unalterably determined to prevent wrong-doing in the future; we have no intention of trying to wreak such an indiscriminate vengeance for wrongs done in the past as would confound the innocent with the guilty. Our purpose is to build up rather than to tear down. We show ourselves the truest friends of property when we make it evident that we will not tolerate the abuses of property. We are steadily bent on preserving the institution of private property; we combat every tendency toward reducing the people to economic servitude; and we care not whether the tendency is due to a sinister agitation directed against all property, or whether it is due to the actions of those members of the predatory classes whose anti-social power is immeasurably increased because of the very fact that they possess wealth.

EQUAL OPPORTUNITIES FOR ALL

"Above all, we insist that while facing changed conditions and new problems, we must face them in the spirit which our forefathers showed when they founded and preserved this Republic. The cornerstone of the Republic lies in our treating each man on his worth as a man, paying no heed to his creed, his birthplace or his occupation, asking not whether he is rich or poor, whether he labors with head or hand; asking only whether he acts decently and honorably in the various relations of his life, whether he behaves well to his family, to his neighbors, to the state. We base our regard for each man on the essentials and not the accidents. We judge him not by his profession, but by his deeds; by his conduct, not by what he has acquired of this world's goods. Other republics have fallen, because the citizens gradually grew to consider the interests of a class before the interests of the whole; for when such was the case it mattered little whether it was the poor who plundered the rich or the rich who exploited the poor; in either event the end of the republic was at hand. We are resolute in our purpose not to fall into such a pit. This great Republic of ours shall never become the government of a plutocracy, and it shall never become the government of a mob. God willing, it shall remain what our fathers who founded it meant it to be—a government in which each man stands on his worth as a man, where each is given the largest personal liberty consistent with securing the well-being of the whole, and where, so far as in us lies, we strive continually to secure for each man such equality of opportunity that in the strife of life he may have a fair chance to show the stuff that is in him."

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NEW YORK ABOUT TO TAKE UP WOMEN'S INSTITUTES

A new woman's-club movement, for the especial benefit of farmers' wives, is about to be launched with the backing of the New York State government. For the past quarter of a century, it will be remembered, farmers' institutes have been in existence in a number of states, and have proved of valuable assistance in dealing with crops and stock. The new movement, due largely to the initiative of Miss Martha Van Rensselaer, director of the farmers' wives' reading course (inaugurated some years ago by Cornell University), contemplates helping the women of the farm in every phase of their home life. Women's institutes have been in operation in Canada for a number of years, and now have a membership in the Dominion of over thirty thousand. Their general purpose has been to aid the farmer's wife, living in remote regions, to educate herself in domestic science and in general culture—in short, to give her almost all the advantages enjoyed by the clubwoman of the cities. These institutes have been so successful in Canada, that in a recent speech the Dominion Deputy Minister of Agriculture said:

"No money that Canada has ever expended on agriculture has brought such large returns as that spent on the women's institutes, because when we educate the mothers we have educated the whole family of children. Personally I think it is destined to be one of the greatest educational factors of the future."

As to the plan and scope of the movement in New York State, Mrs. Helen Wells, of Syracuse, lecturer on farmers' institutes, said recently to a New York City journalist:

"As the farmer has found out what will best develop his stock, it seems quite necessary for the mother to understand what food will nourish the blood, bone, muscle, flesh, nerves of her family, and no one food will do it all. She must prepare a balanced ration if she will have the child obtain the needed nourishment. How many wives and mothers know this one thing, and where would the woman in the country learn it? When she was a girl she never heard of such a thing.

"In the cities and towns the women's clubs help to educate the girl wife. In the country they stumble on alone, trying to carry loads too heavy for them, often unnecessary loads, becoming discouraged, and often breaking down, faded, old before their time, and every one knows that a fretful wife does not make a happy home.

"They suffer, too, from the lack of women's society and sympathy. Women understand women and can help each other as no man ever did or can.

"And so our women's institutes are to be for the purpose of bringing the women together, so that at the meetings they may exchange recipes and patterns, plans and ideas, and may talk over the problems which puzzle them; they may receive sympathy and encouragement, so that they can go back home refreshed and take up the burden of life more cheerfully and better qualified to carry it."

EW

The Farewell Bugle Note

BY GEORGE DALLAS MOSGROVE

Blow, bugle, blow, set the wild echoes flying;
Blow, bugle; answer, echoes, dying, dying, dying.

WHEN, on Memorial Day, a soldier in blue and one in gray, victor and vanquished, their heads "o'er with silver spread," march side by side to the cemetery where the graves of fallen comrades are kept green, decorated with flowers, wreathed with laurel and crowned with immortelles, they hear in fancy the mournful and dying echoes of a bugle note sounded in the distant past, when

The pale moon rose up softly,
And calmly she looked down
On the red sands of the battle field
With bloody corpses strewn.

To the soldier in blue and the one in gray sad recollection presents to view a scene of combat far away, where

None linger now upon the plain,
Save those who ne'er shall fight again,

and they hear once more the bugle sounding "taps" over the body of a dead comrade, the echoes of the dying notes seemingly taking into their own all-embracing cadence "the tears, the memories, the shattered hopes and the long farewell."

To write of the Blue and the Gray marching to battle together is a pleasing, poetic sentiment. It is a fact, however, that their days of warfare are over. Thousands are sleeping in "the bivouac 'neath the grass, under the shade of the trees," and the survivors, with halting step, are marching with their faces turned toward the setting sun. With muffled drum and arms reversed they are following the comrades who, one by one, are swiftly "crossing the bar." Many of the dead sleep in graves unmarked—their names unrecorded, their sepulcher unknown. Many of them, without shroud or coffin, were left on the field of their glory. Some found sepulture on the mountain brown and bare; others in the deep tangled wildwood in the valley of a beautiful river; another is under the vestal vigils of mother, wife or sister, as he rests in a corner of the garden, where the rosebuds burst with imprisoned sweets—

Under the roses the blue,
Under the lilies the gray.

Undisturbed let them rest until the bugle sounds the "assembly" on the farther shore. A sunny sky smiles on them by day and sentinel stars keep watch by night. The weeping willow extends its protecting branches and the dews of heaven sparkle in tears on the flowers and waving grasses over the soldier's sepulcher. Soft and low the zephyr sings a requiem among the roses on the grave of the Blue and in mournful cadence stirs the lilies above the Gray, and

With an equal splendor,
The morning sun-rays fall,
With a touch impartially tender
On the blossoms blooming for all.

In England there is no longer a "War of the Roses," but, instead, the red rose and the white are emblems of peace. York and Lancaster, Cavalier and Roundhead, are reunited brothers, proud of their mother country. In America "every shade of gray has gone to mingle with the blue;"

And thus the brotherhood of man
Is grandly proven here—
It puts aside the Puritan,
Blots out the Cavalier.

TWO KENTUCKIANS

Fast friends were they, soldiers two—
The one in gray, the other in blue.

In a crescent-shaped valley bordering on the beautiful Ohio River lived two boys in old Kentucky homes, distinguished for beauty and grace and generous hospitality. Suppressing their real names, I shall call the youths David and Jonathan, they being close, confidential comrades, almost inseparable. The war cloud rolled over the land. Strolling by the riverside, or idly steering their little boat on the stream, the boys saw steamers crowded with Union soldiers descending the river—going to the seat of war in Dixie's sunny clime, then opulent in the mimic snow of the cotton, in the rich plantations of rustling cane, and in the golden robes of the rich fields. When the last steamer of the fleet had disappeared beyond a bend of the river, and nothing more was seen or heard of the "pomp and circumstance of war" except the dying echoes of bugle, fife and drum, the two friends were unusually quiet, thinking much, but saying little. Instinctively the one knew the other's thoughts—they had come to the parting of the ways. Silently they clasped hands while their eyes spake the gentle good-by. Turning sorrowfully away, they went in opposite directions—David marching to the music of the Union and Jonathan following a strange new flag—the St. Andrews' Cross of Dixie.

The cruel war was over. The farewell bugle note was heard in the Shenandoah Valley. A battalion of Kentucky cavalry, Jonathan a member of it, was marching away from the valley that had been the highway of armies. There were graves and desolation everywhere. The once fair valley was a Golgotha. When crossing the Shenandoah River the Kentuckians fancied that the stream, flowing on forever, murmured Stonewall Jackson's name. The bugle was silent, but here and there the negroes were still playing the banjo, pattin' juba, cuttin' the pig'n wing, and singing the old plantation songs. To them the day of jubilee had come. . . .

The "unpleasantness" being over, David and Jonathan again strolled along the banks of the Ohio, or idly steered their little boat on the quiet stream, then flowing unvexed to the sea. Between the two young men friendship's tie had not been severed, their differences having been political, not personal. David, who had poetry in his soul, quoted the lines:

Come, dear old comrade, you and I
Will steal an hour from days gone by—
The shining days when life was new,
And all was bright as morning dew—
The lusty days of long ago,
When you and I were boys, you know.

It was George Washington who gave utterance to a truth about farm work that is as true to-day as it was when it fell from his lips: "Agriculture is the most helpful, most useful and most noble employment of man."

The Section Men

IN THESE days, when we hear much about the wonderful accomplishment in railway building and equipment, most of the credit is given to the engineers who construct steel bridges, cross narrow and deep gorges, and cause long trains to trail their way through mountain passes almost at grade. Other praise is given the builders of powerful locomotives and palatial passenger trains. Not a word do we hear of the men who make it possible for travelers to have a great measure of the ease with which a long trip is made.

These are the section men who lay the ties and string the rails, and, above all, tamp and level the roadbed so that the swiftly flying train scuds along as if it was running on a surface as smooth as glass. Every working day in the year these gangs are found doing the same work—bringing up the low joints at some places and taking out a kink at another. They screw up the fish plates and fasten the guard rails. Unceasingly they keep watch on the hundreds and thousands of switches that line a right of way from one end of the road to the other. In scores of different ways they are either contributing to the pleasure and ease of the traveler or are safeguarding miles and miles of right of way.

There are few moments of the day from dawn to dark that these men are not working the pick, shovel or crowbar. The illustration shows them in midsummer taking the refreshment of the dinner hour. It is a typical group, showing faces of several nationalities, who come from all climes to build and maintain the great steel highways of our continent.

A SECTION GANG AT DINNER

Gardening and Forestry in Schools

IT IS indeed gratifying to note the great interest that is being manifested among educators in many of the states toward educating the children in gardening and forestry. In many of the big cities the progress made is really wonderful and the children take to the work with great enthusiasm. In some places simple vegetables, such as beans, lettuce, tomatoes, and ordinary flowers have been planted and are being cared for, while in other states, Massachusetts, for instance, special attention is given to forestry; and in this particular state the state forester has sent out to every school superintendent in the state a circular letter setting forth the desirability of further educating the children in caring for the trees. He offers seedlings and seed of white pine, white ash, red spruce, beech, chestnut and oak trees on payment of the actual expense of digging and express charges. The American children need a whole lot of enlightenment along just these lines, and it is to be hoped that the good work so auspiciously begun will continue.

Peary and the Pole

COMMANDER ROBERT E. PEARY, who has been granted another three years' leave of absence by the Navy Department, hopes to be on his way north by July 1st next to resume the work of Arctic exploration. The balance of sixty thousand dollars still needed to fully equip the expedition will undoubtedly be made up during the month. Peary will sail in the "Roosevelt," the same ship he used on his last dash for the pole. The "Roosevelt" was constructed of American timber in an American shipyard, upon plans which were the result of American experience, fitted with American machinery, and which on its previous trip behaved so marvelously.

Some of these days the attainment of the North Pole will come to pass, and it would be the pride of any American to know that its discovery was the work of some brave countryman. Speaking on the subject, Peary says that "for three centuries some of the best men in the best countries have devoted their lives to this quest, and without success. The conquest of the North Pole is the last great geographical prize which the world has to offer to adventurous man. For that reason I feel by every right that this great country of ours should be the winner.

"Once won there will be no future challenge. To the first conqueror belongs the spoils and the glory. Entirely regardless of any intrinsic value, the discovery of the pole will be as distinct a milestone in the history of the globe as was the discovery of America."

Department Gives Warning

A WARNING has been sounded by the Secretary of Agriculture to those manufacturers who have been improperly advertising that the purity of their products is guaranteed by the government under the pure-food law.

The Department of Agriculture allows manufacturers to file a general guarantee covering all their food or drug products. It then assigns a number to the guarantee and permits the manufacturer to print the number and statement that the article is guaranteed on the label of each package. The government, however, assumes no responsibility for the guarantee. On the contrary, as a glance at the law will show, the serial number is assigned to fix the responsibility where it belongs—upon the manufacturer and to protect innocent dealers who have a right, under the law, to rely upon this guarantee.

Secretary Wilson says that this form of misrepresentation must cease at once, and that if it is not stopped the department will publish the names of the manufacturers who are indulging in this kind of deception. In connection with this list, the department will state that it has not analyzed the products represented by the advertisements, and hence has no actual knowledge of their purity or impurity. The department will further advise the public to judge of the purity or impurity of the products by the false representations made as to the guarantee. In other words, the suggestion will be made that manufacturers who deceive the public about the guarantee will lie about the quality of their product.

Student Fire Fighters

THE fire-fighting organization of the State Forestry School at Mount Alto, Pennsylvania, gave an excellent account of itself recently in an all-night fight, saving thousands of acres of timber in the reservation.

All the students in the fire squad are mounted on Western ponies, and they led with them twelve extra ponies equipped with pack saddles. On each pack saddle, by means of the diamond hitch, are fastened two large kegs of water. The students fight mountain fires against the wind by building a number of small fires in front of the oncoming flames and forcing these smaller fires to burn back against the main fire in such a way that the principal fire finally reaches a stretch already burned over, and dies for want of fuel.

In fighting a mountain fire in a high wind it is difficult to prevent the flames from blowing over this back fire line and gaining fresh headway. It is here that the saddle ponies with their kegs of water are especially useful. They can move quickly from one threatened point to another, and by means of the force pumps attached to the kegs a small amount of water can be used with great effectiveness. When the kegs are emptied the ponies are hurried to the nearest water, where they can be quickly filled from the shallowest springs by means of flat canvas buckets.

The Whiskers of the Cat

THE cat's power of discernment, especially at night, is little short of marvelous, and it is perhaps not generally known that it is due almost as much to the whiskers as to the eyes. To any one who goes to a menagerie, and looks at the giant cats of the forest—the lion and his like—the purpose of these vibrissæ, as science names the hairs that project from the muzzle and from above the eyes, is evident enough, says "The Scrap Book."

They are delicate organs of touch, wonderful mechanisms of warning. Each one grows from a follicle, or gland, nerved to exquisite sensibility. Its slightest contact with any obstacle is distinctly felt by the animal, though the hair itself is tough and insensible. Those exaggerated whiskers on the muzzle often project to each side of the animal so far that from point to point they stretch to just the width of his body.

Imagine, now, a lion stealing through a jungle at night, tracking his prey, where the stir of a twig gives alarm. His long hairs indicate, through the nicest nerves, any object that may be in his velvet path. A touch stops him short before pushing through some close thicket where the rustling leaves and boughs would tell aloud his presence.

Alaska-Yukon-Pacific Exposition

PLEASED with the success of the Portland Exposition, the thrifty people of the Northwest have set on foot plans for another giant exposition, to be held at Seattle, Washington. The year set for the exposition is 1909, and it will be open from June 6th to September 30th. It is to be known as the Alaska-Yukon-Pacific Exposition, is to be international in its scope and is to be commemorative of the discovery of the Pacific Ocean by Balboa four hundred years ago.

A PARTNER IN INIQUITY

By William Forster Brown

"WHEN a woman that's been livin' from hand to mouth for years, helped by the town an' gittin' church aid more'n half the time—same's Har'it Taylor has—parades inter church a-flauntin' a bran'-new red bunnit she bought with money we donated her for groceries, I cal'late it's high time suthin' was done 'bout it!"

Mrs. Joshua Tebbetts rested her elbows on the worn arms of the minister's haircloth rocker and leaned back, every line of her aggressive countenance expressing unalterable conviction.

"I remember that Sister Taylor's entrance caused an unusual stir in the congregation, Sabbath morning," answered the Reverend Samuel Graves, regarding his caller dubiously, "but I was not aware that—"

"Stir!" snapped the president of the Fairport Ladies' Aid Society, the ostrich tips on her hat jerking indignantly, "'twas all I could do to keep from speakin' right out in meetin' when I seen her comin' up the aisle. After our workin' like Trojans gittin' up a Harvest Supper an' entertainment to raise money, it's more'n flesh an' blood kin stan' to hev' her waste it on a bunnit!"

"May it not have been a present from some generous neighbor?" suggested the minister soothingly.

"'Twa'n't no present!" declared Mrs. Tebbetts, wagging her head dogmatically. "The Gibson girls showed me the ten-dollar bill she paid 'em—the corner was tore off an' there was a strip of court plaster 'cross the middle—'twas the identical one we gin' her! The society's had a meetin', an' agreed she's got to hev' a good talkin' to—an' that it's more fittin' an' solemn for you to do it than for anybody else."

"If Sister Taylor has misused your benevolence, isn't the matter one for the Aid Society to adjust?" intimated the Reverend Samuel. "I feel hardly justified in attempting—" he paused, tentatively.

The stout, middle-aged, thoroughly self-possessed official of the Methodist Church Auxiliary stared at the shepherd of souls with emphatic disapproval.

"Well!" she ejaculated, after an ominous silence, "I didn't expect you'd uphold Har'it Taylor, Brother Graves. Ain't it your duty to rebuke sinful extravagance among your own church members?"

The minister promptly lifted a conciliating hand, for during his brief labors in the Fairport vineyard he had learned one lesson beyond forgetting: the futility of antagonizing the potent power behind the throne represented by Mrs. Joshua.

"I will speak to Sister Taylor," he said hastily, "and insist that she immediately return the bonnet and apply the donation rightfully; I am indeed surprised and pained to learn that she has been guilty of such a deplorable action, and you may rest assured that I shall have no hesitation in reproving her effectually."

"You jest tell her that if she don't, likely's not she'll be called afore the church committee an' disciplined—mebbe that'll scare her. I might's well be goin' now," concluded Mrs. Tebbetts, rising. "There ain't nuthin' more I want to say, 'cept that if I was you I wouldn't let no grass grow under my feet, Brother Graves. The Gibson girls are eloser'n the bark on a tree, an' I ain't sure but that they'll make a fuss 'bout returnin' all of the money if Har'it gits a chance to wear it another Sunday."

Mrs. Tebbetts departed with an unctuous rustle of stiff silken skirts, and after a decorous interval the minister put on his shabby hat and passed into the outdoor sunshine with a sigh, finally turning his reluctant feet into the sandy path that ended at the step of Mrs. Harriet Taylor's weather-beaten piazza.

"Come right in!" called a brisk voice from behind the patched screen door. "My land! if it ain't Brother Graves—an' me with an ol' caliker wrapper on; but I'm jest as pleased to see you as if I could dress up."

"The love of fine raiment has lured many unwary feet into the broad way of unrighteousness," remarked the minister, seizing on the fortuitous opening. "We must guard against the vanities of the flesh lest—"

"I don't know much 'bout fine raiment," returned Mrs. Taylor cheerfully. "Set down in this chair, Brother Graves—it's the only one I've got there ain't suthin' the matter with."

The Reverend Samuel complied, watching with troubled interest the white-haired, toil-bowed form of his parishioner as she bustled about the serupulously neat, scantily furnished room, laboring solicitously to open refractory window blinds. A wave of compassion swept the heart strings of the rebuker of extravagance—she reminded him pitifully of an aged, deserted cricket pathetically piping the tune of a long-dead summer; that this worn-out daughter of Israel had braved the wrath of the Ladies' Aid by devoting the proceeds of a harvest supper to the acquirement of incongruous finery seemed absurdly incredible.

"I hope you are well, Sister Taylor?" he remarked lamely.

"There ain't nuthin' fizzical the matter with me, 'cept the rheumatiz an' a lame back," Mrs. Taylor replied, seating herself cautiously on the edge of a rickety sofa, "but I've got suthin' on my mind that I sot out to come an' tell you 'bout the fust of the week, only I didn't git no chance. I'm gonter now! I'm an orful wicked woman, Brother Graves. I've been a-bullyin' God!"

"What?" ejaculated the astonished minister.

"I don't s'pose you'll b'lieve a church member could be as bad as that, but it's the truth—jest 'cause he hadn't seen fit to let me hev' a red bunnit! Mebbe you'll think that's orful queer, but there's a good deal to it you don't know.

"I ain't never had nuthin' but trouble an' misfortune an' hard work ever since I was a little girl knee-high to a toad—more'n any other woman, I guess. My mother died 'fore I was growed up, an' I jest slaved from then 'til the time I got married. Well, I hadn't more'n begun to think life was wuth suthin' when my husband's vessel was lost on the Banks with all hands. Seemed 'sif God had broke my heart; but I kissed the rod best I could, an' worked—Lord, how I worked—tryin' to bring up my boy. I got 'long somehow, an' after a while he got big enough to help—you ain't married, an' you don't know what it means to hev' little arms creep 'round your neck, when you're jest 'bout ready to giv' up an' die. Then, I'll never forgit that day, Billy was brought home to me, the bright curls I loved to call 'mother's gold' all wet an' snarled an' full of sand; his little white face set an' desprit where he'd struggled to git out from under the capsized dory. Some folks would hev' cursed God, I cal'late, but I tried to b'lieve 'twas all figgered out, some'eres, an' that when I awoke in His likeness it'd be all clear an' plain an' right.

"I've tried to be a Christian, best I could, an' not complain 'cause my cross has allus been 'bout as heavy as I could stan', but last week somehow ruther I jest got to thinkin'—an' I got plum discouraged an' desprit. I'd worked an' suffered an' put up with 'bout everything but bein' sent to the town farm over to Barstable—an' it didn't seem's if God had cared a cent!

"I went down on my knees agin' this ol' lounge an' told the Lord—plain's if we was face to face—that I couldn't stan' no more—an' I wouldn't, nuther! While I was prayin', it come inter my head about that red bunnit over in the Gibson girls' window, an' I says, 'Father in heaven, I ain't got no faith nor belief left; if you ever cared anything 'bout me, send me a sign by lettin' me hev' that bunnit 'fore Saturday—if you don't I'll jest giv' up an' be a ragin' heathen!'

"You see, Brother Graves, when William an' me was keepin' company, the girls all had a fancy for wearin' red bunnits—an' I was cal'latin' to be married in a better one than any of the rest of 'em had. Well, I wa'n't, after all, 'cause William thought we'd better take all the money we had an' pay down on a house, but 'twas understood that jest as soon as we got a little forehanded I was goin' to Boston an' buy the best one there was. The little while I had my husband, what with sickness an' the baby, we never got forehanded! The last letter I got from William he sent home by the Distant Shore, an' he said in it, 'When I git home next week, little girl, you're goin' to hev' that bunnit if we don't hev' another thing!'

"Mebbe you'll think I was wicked, but I never got over wantin' an' hopin' for that bunnit—kinder seemed 'sif Will couldn't rest peaceable if he knew I wa'n't never goin' to git it—he was the best husband! True as I live, Brother Graves, jest as I was gittin' off my knees, Mis' Baker's little Tommy walked through that door with a note from Mis' Tebbetts, sayin', 'For Sister Taylor's special need'—an' a ten-dollar bill in it! I tell you when I walked up the aisle Sunday mornin' I was so exalted it's a wonder I didn't sing 'All Hail the Power of Jesus Name' right out loud!

"I dunno what folks thought of me, an' I don't care," Mrs. Taylor concluded, wiping her eyes. "God sent that money for a purpose only Him an' me knew about—he meant me to understand that he hadn't turned his face away a mite—there couldn't be anythin' more convincin', Brother Graves."

The minister stared out of the window, beyond the tossing leafage of silver maples, to where the blue sky ended in a faint white line of breaking seas, an unaccountable tightness twitching at his throat, and in his ears the echo of words spoken long ago by the Master of all human hearts—"I have not found so great faith, no, not in Israel!"

Mechanically the Reverend Samuel pressed his hand over the pocket where rested a limp card case containing one solitary ten-dollar bill—slowly acquired by many sacrifices.

"No!" he said decidedly, "I haven't the least doubt but that the one who's cross you have borne so well and patiently sent the money for you to use in a way that would best comfort and sustain your sorely tried faith."

"But do you s'pose the society'll think it's queer I used the money same's I did?" queried Mrs. Taylor anxiously. "'Course I ain't told 'em nuthin'—an'—"

"And I should not," answered the minister quickly, as a mental vision of the outraged and rebuking face of Mrs. Joshua Tebbetts rose before him. "Providentially one of our church—a humble worker for the Master—has entrusted me with a mission of duplicating the sum given you; surely that will silence all criticism."

He robbed the worn pocketbook and extended the contents.

"Well I never!" exclaimed Mrs. Taylor, her distorted fingers closing over the price of the Reverend Samuel's new hat. "I'd like to know who 'twas? Couldn't hev' been Deacon Tuttle, 'cause he jest sent me a load o' wood an' a lot o' groceries. But I dunno's it makes any differenee, 'cause I'll tell you what I'm goin' to do with it, Brother Graves! I'm gonter ask you to give it to the Ladies' Aid, so's they kin help somebody else; I ain't likely to doubt agin' that the Lord'll look after me—an' I cal'late there's others that need comfortin' an' sustainin'—mebbe 'most as bad as I did!"

"'Mebbe you'll think I was wicked, but I never got over wantin' an' hopin' for that bunnit'"

The Old-Fashioned Settee

There's a quaint old piece of furniture
In a nook of our cozy hall,
With outstretched arms of carven oak,
And its back against the wall;
Like some good-natured mother's lap
Forever inviting me
To come and have a little snooze—
That old brown oak settee.

When the tempest raged, or the sun was hot,
Or bitter the winter day,
I nestled deep in that soft, warm lap,
And slept my fears away:
The fairest sights and the sweetest sounds
That a child may hear and see
Have come to me in the carven arms
Of that old brown oak settee.

And now, that I am eight years old,
When the time for study comes,
I hunt that same old cozy nook
To puzzle at my sums;
And sometimes, after school leaves out,
Grandma, she comes to me
And says, "Now, eat this cookie, dear,
On the old brown oak settee!"

Then papa he comes in, and crowds
Me over for a place,
And gathers up his knees, and puts
A paper on his face—
So we can't see him smile or frown
At the things he's sure to see
Whenever he settles down to nap
On that old brown oak settee.

I wonder when that worn old piece
Of furniture will go!—
I hope it won't be 'fore I'm old
Enough to have a beau;
Then I can snuggle up to him,
Like papa does to me
When he comes in and finds me there—
On that old brown oak settee.

And when I'm married, and I have
A house, like mama has,
With cushion rockers, velvet rugs
And 'lectric light and gas,
I hope some fairy kind and good
Will speak a wish for me,
And bring me, for a wedding gift,
That old brown oak settee!

—Aloysius Coll in McCall's Magazine.

Mill Owners

BY GEORGIAN GRIER

[BEGUN IN THE APRIL 10TH ISSUE]

CHAPTER VIII.

SCOTT & SON were bending over their desks, their faces full of satisfaction. It had been a great year, and another fortune had been piled up to their account. The junior partner's back was toward the door which opened into the outer office, and presently a shaft of light fell across his paper. He turned inquiringly, stared, then flung himself toward the door.

"Burke Kennedy!" he cried. "Here, take my chair. Don't exert yourself too much. Lord! but I'm glad to see you. After that telegram about St. Ledger you seemed to drop wholly out of existence. We kept the wires hot, but couldn't get a scrap of news, except that the St. Ledger quarantine was rigid. Then at the end of two or three weeks we found the checks were being presented at the bank, but still nothing from you. It was not until ten days ago that we understood the whole thing. Here, take this chair, I tell you, while I pour out a glass of water for you. You must take care of yourself old boy."

"Oh, tut! tut! Wilbur," expostulated Burke. "Don't try to mollycoddle me. I'm all right except for losing fifty pounds or so of flesh, and that is more to the detriment of looks than feelings. And really, I haven't much time to spare just now. You may remember my searching after a little girl I used to know. Well, I got a clue to her not five minutes ago, a copy of a paper I once put an advertisement in, which she answered. It was lying out on the sidewalk where she must have dropped it. But she had disappeared. There was no one except a tall young lady in a gray suit near, and she went into the restaurant next door. I started to follow her, but she got wedged in at the back of a table, with a jam in front; so I'll wait for her to come out. I've got a boy watching the door. She may have seen the girl drop the paper, you know. Don't look satirical," at the grin on Wilbur's face. "I've almost stepped on this girl's heels a number of times, and I don't propose to lose her now. If the young lady hasn't seen her, I shall call in the aid of the police to help in the search. It's really quite important that I should find her, because the girl is working for a living, with a big inheritance awaiting her which she knows nothing about."

"Oh, that alters the case entirely," apologized Wilbur, the grin leaving his face. "Of course you must find her, and we'll do all we can to help you. But a few minutes won't make any difference. There," forcing him down into the chair, "you sit quietly for a while, and here, drink this water. That's right. Now let me look at you. Lord! to think you have been through the yellow fever and come out all right, and twenty out of the thirty other cases died! That St. Ledger must be a topper. He didn't write anything about himself, but we could read between the lines. He and the black boy nursed you through the whole business, without the aid of a single doctor. I'm glad you made it all right with the boy. And I'm glad St. Ledger's coming North; I want to meet him."

"St. Ledger came up a week ago," said Burke. "He's down at Mill Run now."

"Well, bring him in—or no, I believe I'll run down to Mill Run myself for a few days. The name has such a watery, trout-fishing flavor, and I've heard you speak so much of the place, that I want to see it. No jumping, blaze-away ambition at all there, you say. Well, that'll suit me exactly for a few days. You'll want to stay there at least six months to get that flesh back. Yes, you may look for me. And now for the business side," the raillery disappearing from his face and leaving the keen, incisive business man. "It wasn't worth the risk, of course, and had we suspected your intention we would have headed you off some way; but now the risk is past, and all that, the reward is something tremendous. On all the early buyings we were to share the difference between what was paid and the figures we gave, you remember. That is a nice little sum in itself. But the St. Ledger business is where the real plums come on. The ten thousand and forty bales are worth considerably over half a million. We paid two hundred and forty thousand. The difference is to be divided between us."

Burke rose unsteadily, his face pale.

"No, no, not so much as that," he protested. "Even in my wildest moments I never dreamed of more than ten or fifteen thousand. Such a division is out of all reason."

"We are glad you are satisfied," said the senior member. "You have done well for us, and we would like you to be equally pleased. Of course the risk of so large a sum in the St. Ledger affair was greater than in the usual way, but our risk was less than yours. The money is at your disposal on call. And now there is another matter. You are familiar with Mill Run. Job Woodmansee is the magnate there, and his financial rating is unexceptionable. However, he is contemplating and even commencing extensive improvements, I understand—an addition to the mill, new machinery, and better dwellings for the help. He believes the times require it, and that when completed the property will be in condition to yield better interest, and I think he is right.

"But the improvements call for more capital than he has; and he wrote to us, asking that cotton be sent him for a year and a mortgage be accepted on the property in payment. This would enable him

"A declaration had been made, understood, accepted"

to use his money in the improvements. We consented, and so far have sent him thirty thousand dollars' worth, and will ship ten more this week. Now mortgages are not in our line, and it occurs to me that belonging to Mill Run, you might be able to handle this mortgage to better advantage. We could debit it to your account with us. Moreover—though this is but a passing thought, and not advice—perhaps the bulk of your money, say a hundred thousand, could be advantageously used in buying an interest in the property. It is making a fair profit, and your money would furnish a good working capital to go on with the improvements. Ah!" at the expression on Burke's face, "you were already contemplating it?"

"Yes, sir; all except the mortgage. I will be glad to take that."

"Now there is one more thing," said Mr. Scott. "Was the young lady you are searching for in the South?"

"Yes, but I missed her."

"Do you know whether she received any money on one of our checks?"

"Yes, I sent her fifty dollars, signing a fictitious name to avoid advertising my own, deposited the amount in a bank under that name and used one of the blanks from the firm's check book."

"That explains it, then," said Mr. Scott. "Some weeks ago a young lady came here asking for employment as a typewriter and stenographer. She said she was passing along the street and noticed our firm name, and remembered it had been across the end of a check she had received a short time before. Being a stranger in a strange city it struck her as a good omen, and she came in. She has been with us ever since. Just now she is out at lunch."

"Woman with gray dress," yelled a shrill voice at the door of the outside office; "comin' right into your place."

Burke rose quickly, and looked toward the door. But when she came in he did not know her at first. It seemed as if Anna Belle stood there before him—Anna Belle, grown more beautiful, more sweet and womanly, more stately, more fair and graceful, he knew in his heart, than Anna Belle ever could look. For an instant there was a feeling of regret that Meg, whom he had flouted and dodged, and of late knew that he had liked more than he ever realized, was gone, never more to return. Then, with the glad recognition also showing in her face, his outstretched hands went to meet hers. For a moment they stood there with clasped hands, looking straight into each other's eyes, questioning, understanding, answering, the color of it rising softly to their faces. A declaration had been made, understood, accepted.

"When did you come, Burke?" she breathed. "Are you going to work here? A whole lot has happened to me since I left Mill Run, and I haven't heard a word of anything there. Is the place the same, and Ben?"

"Ben was all right four months ago. Yes, a whole lot has happened, Meg—Marguerite, I mean. Some of it I have been chasing you over the country to tell. Here, sit down in this chair."

But before he finished, she was on her feet again.

"I must go to Mill Run at once," she cried, her eyes suffused. "To think it is my mother's old home, and I never knew it. No, I will go to grandmother's first; perhaps she will come with me. And there I was in her home all that time and never suspected. I can hardly realize it all."

"My advice," said Mr. Scott, beaming on them, "is for Miss Bannerman to go to my house a week or two. My daughter will look out for her. We will wire for her grandmother to come here. From what you say, the old lady is strong and energetic and perfectly able to travel alone. Then they both can go down to Mill Run together. In the meantime Burke will go there and have a talk with Mr. Woodmansee. Perhaps everything can be arranged amicably. What do you think?"

"That it is the best thing we can do," agreed Burke promptly. "I will go down in the morning."

When he arrived at Mill Run the next forenoon, and walked over to the village, Burke found the carriage in front of the office. Apparently the magnate was inside.

The superintendent saw him as he entered the door and whirled sharply from a group he was talking with. Burke noticed that he was looking downcast.

"You here again, Kennedy?" he called sourly. "Well, there's no work, as you ought to know."

"I wish to see Squire Woodmansee alone."

"Well, you can't. He's engaged—"

But at the sound of Burke's voice a young lady had left the group, and now swept in front of Mr. Derry, her eyes shining, both her hands outstretched.

"Oh, Burke!" she cried, "I have been wanting so much to thank you, to—to tell you I shall never forget what you have done! Mr. St. Ledger has told me all. It was so brave and—"

"That's all right, Anna Belle," interrupted Burke, as he took her hands. "What I did for St. Ledger wasn't half so much as he did for me afterward, and—"

There was a low laugh behind them, and St. Ledger came forward.

"So Anna Belle has proferred her hand at last," he said. "It was a long time coming, but was spontaneous and full-souled when it did. But we were just speaking of you, Burke. We are contemplating a good many improvements here. I have purchased an interest in the business, and this morning, before leaving the house, I suggested you as an additional partner. Mr. Woodmansee at first seemed astounded; but when I explained the amount of capital you could put in, and your knowledge of the work, he grew more favorable to the idea. I think we three could build up a fine business," laying his hand affectionately upon Burke's shoulder, "and our combined resources would furnish ample capital."

"That's partly what I came down for, to see if I could make some arrangement," returned Burke. "I think I made up my mind to have an interest in the business that day of the mud puddle. But I must see Squire Woodmansee about another affair first, alone."

The mill owner seemed surprised, but led him into an inner office. When they came out, a half hour later, the squire's face was pale, but composed. All could see that he had gone through a hard battle. Burke's face was also grave.

"I have been listening to some astounding—er, disclosures," the squire said slowly, as though weighing his words. "It seems my sister Marguerite, who is dead, left a little girl, whom I also thought dead. She turns out to be a child some of us used to know as Meg Collinton. The proof appears somewhat circumstantial as yet, but—er, Mr. Kennedy here—who, by the way, is coming into the firm as an equal partner—has said things that would seem—er, to make the proof only a question of time. So to avoid any—er, unnecessary legal measures—expenses—I have decided to recognize the claim. As her mother's heiress the girl of course owns half the property; but Mr. Kennedy assures me it will be allowed to remain in the business. They are to be married soon; but as Mr. Kennedy's own fortune now is about equal to Marguerite's that removes any suspicion of—er, mercenary motives. That is all, I believe, only I would suggest that their marriage take place at the same time as Anna Belle's. And oh, yes, as Mr. Derry will be in the city at the time purchasing new machinery, he may as well arrange to send down the flowers and other decorations for the church."

[THE END]

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Over the Telephone

IN A recent issue of "The Taylor-Trotwood Magazine" there was published the following and credited to W. A. B.:

DEAR TROTWOOD:—

Here is another true bill, taken down by one who heard Bob talking at the 'phone. Nigger Bob lives in Atlanta, and this was the conversation he held with Marse Henry Watson, several blocks away:

Ding-a-ling-ling-a-ling!

"Hello, Missy Telafome, pleas'm gimme Marse Henry."

"Yassum—a-wha' dat? O yassum, excuse me, I means Marse Henry Watson. He done lib in de big yaller house jes' back er de new schoolhouse—yassum—'bleeged—yassum!"

"Hello — yassah — hello — dis Marse Henry?"

"Yassah—dis Bob—yassah—Maud, dat ar mule, she done bawk!"

"Yassah—'bout two blocks out'n de stable—yassah."

"Yassah—yassah, we dun dun dat—we dun twis' her tail."

"Yassah—yassah—little ole trav'lun man f'um Bosson—he twis' her tail."

"Yassah—yassah—he's in de hosspittle—dey dun kerried him dar."

"Yassah—yassah—I'se feered he's hurt servig'us—but he's dar in de hosspittle—yassah."

"We dun dat, too, Marse Henry—yassah, we tied up her fore foot—yassah."

"Nawsah—nawsah—hit didn't wuck—she had two hind foots lef'."

"Yassah — yassah — nice man whut preeches—yassah, he said no mule could do it wid one foot tied up."

"Yassah—yassah—but she dun it, yassah—biffed him in de stummic—de p'leece pourin' water on his head now—yassah."

"Yassah—yassah—we dun dat, too—tied a horse hair 'round her year."

"Yassah—yassah—big fat man—yassah—jes' passin' by—don't kno' his entitlement—yassah."

"Nawsah—nawsah—not a very big piece—jes' bit a little chunk out'n his jowl—he ain't hurt much."

"Yassah—yassah—dey dun sewed up his jaw—he's all right."

"Yassah—yassah—we dun build a fiah under her, too, yassah."

"Burn part ob de cart—yassah."

"Yassah—yassah—dun burn right smart ob de cart."

"Yassah—yassah—dat's whut I've been tryin' to tell you, Marse Henry—dun burn de whole cart all up an' I wuz jes' a gwine to ax you when you gwine send a 'nurr cart down heah, sah—yassah."

Good Times

BY HILDA RICHMOND

Some people may doubt this, but there are homes all over the country that are never opened to company except the family visit and when friends drop in. There are various reasons for this. Some ladies consider their homes too fine for entertaining; some consider having more than four or five guests at a time a great lot of work; some never have time to enjoy life, and others think company a snare and a delusion. But the greater number of the ladies who do not entertain are the ones who do not know how, to speak frankly. They would be glad to invite their friends for an afternoon or evening, but they do not know what to do with them when they get them there. As one good lady expressed it, "As soon as folks get through eating, I think they stop having a good time."

There is scarcely a neighborhood in which enough "home talent" cannot be found to make any number of good times. The wise hostess plans to have certain young ladies play and sing—not at random, after long coaxing on the part of the company, but as a part of the simple program. Some young lady or gentleman is sure to be able to recite humorous poems and sketches, and others may be persuaded to play the piano. The program should not be long and tiresome, but interesting enough for all. Always discourage heavy tragedy and sketches not suitable for parlor readings, but persuade the entertainer to stick closely to short, amusing recitations. Often a quartet can be arranged to sing popular songs, or something in the way of clever acting amuse the company.

Then there are the dear family gatherings that ought to be more common. It is all right to gather together three or four hundred relatives and connections in a grove in the summer time, and have music and talks and a big dinner, but the little gatherings of the immediate circles are much more enjoyable. On Thanksgiving, New Year's, Christmas and other holidays get the families together and have good times. Actually there are homes that never have reunions, and the people who live in them are rich as far as worldly wealth goes. Takes time? Of course it takes time to get ready and to clear up afterward, but what are homes and families for? Keep the best of the turkeys and chickens for the family feasts even if the poultry money is cut short a little.

Aside from family gatherings, thimble parties are nice to entertain friends. Have the ladies come about two in the afternoon with their own work, or provide work of your own for them. Ask the gentlemen for six or earlier, and serve a good old-fashioned dinner of chicken pie, mashed potatoes, vegetables and pies. Or the thimble party may be given just after butchering a beef, and a great juicy roast with gravy provided. The food should be abundant and good, but there need not be a wonderful variety of it. Ask the ladies to bring enough patches of silk or calico or wool goods to make a quilt block, and then give a little prize to the one turning out the prettiest patch, if you want a little variety. Afterward the patches may be combined for a pretty quilt or comforter, that will be a lasting souvenir of the occasion. Knotting comforters, sewing carpet rags, making new garments and hemming sheets, towels and pillow slips are good occupations for an afternoon with the needles.

All kinds of games lend themselves to good times in the evenings. Prizes may be offered or not, just as the hostess wishes. An old-fashioned spelling school furnishes plenty of amusement for young and old and needs no preparation beforehand. Sometimes it is possible to borrow a magic lantern to amuse young people, and occasionally a visitor from a distance may entertain a whole circle by telling of the ways of his home folks. This latter is risky business unless you are sure the visitor is very entertaining; but when he is, a good time is assured to all. Hanging a number of articles (numbered) about the room and asking the guests to write the names of them on numbered slips, or put the correct numbers to the names, makes every one move about and destroys stiffness. You can easily find such lists in magazines or make them up yourself. "The staff of life" would be bread; "the house the Colonel lived in," an empty nut shell; "Horse Fair," an ear of corn; "the missing link," a link of sausage, and so on—anything foolish and funny to set people laughing and guessing.

For an evening party a regular supper is not needed. Hot coffee, cake, sandwiches, pickles, cookies, veal loaf, cold chicken, wafers, potato salad—anything that can easily be served on plates wherever the guests happen to be seated. Ask a few of your young lady friends to help serve, or let the gentlemen wait on the ladies. Make everything delightfully informal, for stiffness banishes all pleasure. Get rid of the notion that it is hard work to entertain, and find out how enjoyable and profitable it really is to have good times with your friends and relatives.

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Fruit Rolls

For luncheons the following recipe will be found excellent:

Mix and sift two cupfuls of flour, four teaspoonfuls of baking powder, one half teaspoonful of salt and one tablespoonful of sugar. Work in two tablespoonfuls of butter, using the tips of the fingers; then add gradually two thirds of a cupful of milk. Toss on a lightly floured board, pat, and roll to one fourth of an inch in thickness. Brush over with melted butter, and sprinkle with one third of a cupful of raisins, stoned and finely chopped, two tablespoonfuls of citron, finely chopped, one tablespoonful of sugar and one third of a teaspoonful of cinnamon. Roll like a jelly roll, and cut into pieces three fourths of an inch in thickness. Place on a buttered sheet and bake in a hot oven fifteen minutes. Currants may be substituted for raisins if one so desires.

ORANGE OMELET—Beat the yolks of two eggs for each person served, add a pinch of salt and a dash of pepper. Beat the whites of the eggs stiff and dry, then cut the yolks into the whites with a silver spoon. Sprinkle over this one teaspoonful of milk to each two eggs used, and pour into a hot buttered pan. When firm over the top spread the pulp of sweet oranges over, fold the omelet and slip onto a hot platter. Cut slits across the top and insert macaroons and orange slices. Decorate with orange slices that have been cooked tender in a thick sirup. Serve instantly as a dessert.

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One Mother's Day

A somewhat garrulous mother who was on the witness stand was asked by a lawyer to tell exactly what she did between six and nine o'clock on a certain morning.

"You want me to tell every little thing, do you?" she said to the lawyer.

"Yes, madam; every little thing. Don't omit anything."

Assuming a reflective attitude the mother said:

"Well, now, let me see. Of course I got up the first thing. The clock was just striking six when I was dressing myself. Then I went down to the kitchen and built the fire, for my husband isn't very strong and takes cold easily, so I never have him build fires. Then I took the ashes down into the cellar and sifted them and picked out all the unburnt coal. Then I took the broom and swept up the dirt I had made taking up the ashes and making the fire, and after that I got breakfast. I made cream-tartar biscuits and coffee and fried bacon, with cold sliced potatoes. Of course I had to set the table and skim the milk, and I had to sew a button on my little boy's trousers before he could put them on, and I had to dress my little girl a year old, and braid her little sister's hair for her and untie a hard knot in her shoe string. Then I had to wash the baby up before I took up the breakfast, and while the children and my husband were eating I worked over my bread, for it was baking day, and I didn't have time to eat breakfast, because I had promised to make a cake and three dozen rolls for a supper we were to have at our church, and I had to iron my little girl's white dress, for she was to speak at an entertainment they were to have that afternoon in her school. Then after breakfast I had to get the children off to school and— Oh, yes, I remember that I had to show my Willy how to do a sum in arithmetic before he went to school, and I had to hear my little girl recite her piece, to make sure that she knew it all right, and had to put a clean rag on a sore thumb my other little boy had, and fix up a gargle for Willy to gargle his throat with before he went to school, for he said his throat was a little sore. Then I had to bathe my baby and scald out her nursing bottles, and wash up the breakfast dishes, and tidy up the dining room, and sweep the two rooms I always sweep on Tuesday, and make four beds and put things to rights in four bedrooms, and then I ran into my next door neighbor's house and washed and dressed her baby for her, because she is down sick in bed and no one to do a thing for her after her husband goes to his work, and I think I ought to lend a hand when I can. Then I ran back home and put my bread in the oven, and made two cakes and a batch of ginger cookies, and got a pudding ready for dinner, and peeped into the morning paper, and ironed a while, and did a little sewing, and put my baby to bed for a nap, and made a cup of tea for a poor old woman that come to my door selling small wares, and who looked so cold and starved I felt I couldn't let her go away until I had warmed and fed her, and then I sorted over half a barrel of apples in the cellar and made sauce of the specked ones, and by that time it was very nearly nine o'clock and—"

"Most nine?" interrupted the lawyer. "Do you mean to tell me that you did all that between six and nine o'clock—or even before nine?"

"I sure did, sir, and I was just beginning to really get to doing something when nine o'clock came, and before the clock struck nine I had ripped the frayed braid off a dress skirt, and poured hot water over the fruit stains in a table cloth, and darned a stocking, and cleaned out the kitchen sink, and—"

"That will do, madam. I would ask you to tell the court what you did during the day after nine o'clock, but as the court must adjourn on Friday, and this is only Wednesday, there would hardly be time to hear it all. I would now like to ask you one or two questions having nothing to do with your household duties."

MAPLE BISQUE—Cook four beaten egg yolks with one cupful of thick maple sirup until boiling, stirring constantly; strain and cool. Beat one pint of thick cream, then add it to stiffly beaten whites of four eggs; add the cooked sirup when thoroughly chilled, and beat the whole mixture until light; pour into fancy cases set in can packed in ice and salt, and freeze four hours. Cover with rolled macaroon crumbs when serving on ice-cream plates.

EGGS AND BREAD SAUCE—Simmer twenty minutes in a sauce pan two cupfuls of milk, two tablespoonfuls of minced onion, a pinch of salt, a dash of pepper and one half cupful of fine bread crumbs. Then add one and one half tablespoonfuls of butter. In another pan brown in one half tablespoonful of hot butter one half cupful of coarse bread crumbs. Put white-bread sauce on a granite pie tin, break onto it fresh eggs, dust with pepper and salt, and set in a moderate oven until firm. Slip the sauce and eggs onto a hot plate, sprinkle browned crumbs over, and serve.

◈

Pointer for Baking Day

After taking bread from the oven, do not wrap tightly in cloth, as many do, but rub the top of the loaves with a little lard or butter, tip on edge on your kneading board so that all possible crust is exposed to the air, and if possible place outdoors or in the wind to cool quickly a few minutes, then remove to a convenient place and let stand until thoroughly cold before putting away in box or can, and you will have delicious crust.

◈

A French Loaf

To one quart of flour add one half teaspoonful of salt and four tablespoonfuls of fresh butter. Cream the butter and flour as for cake, but do not wash the butter. Beat three eggs very light, separately, and beat in them half the flour, creaming the other half with the butter. Add the beaten eggs and flour gradually to the butter and flour, beat well, then add one tablespoonful of sugar, and last of all stir in three tablespoonfuls of yeast. Let it rise in a buttered mold, and when well risen bake in the same mold. It requires the same length of time to rise and bake as sally-lunn.

◈

Hints for the Household

To make a nice and durable rug, cut gunny sacks into strips, sew the same as carpet rags, and weave with colored warp. Brown warp harmonizes well if the sacks are left in their natural color.

When ants become troublesome, sprinkle the infested localities with cloves or salt.

To secure a clear light from a lamp, place a small lump of gum camphor in the bowl with the oil.

To considerably lengthen the life of graniteware, pour shellac over the worn place and hold over the fire until thoroughly hardened.

To assist in finding the eye of the needle in your sewing machine, slip a piece of white paper under the machine foot when threading.

Combs should not be washed with water. This is apt to split the teeth. A stiff nail brush is a good thing to keep for cleaning them. After using the brush, take a damp cloth and wipe between each tooth with this.

If tartar has been allowed to accumulate on the teeth, caused by too infrequent brushing, three or four applications of the tooth brush moistened with warm water and then dipped in magnesia will prove effectual.

Enameled pans should not be washed with soda, which causes the enamel to discolor and crack. Sand also is too sharp; it scratches the glaze. The cloth should be dipped in some fine ash or crushed egg shells to remove stains.

To prevent blue spotting the clothes, put some out on a piece of white cloth, gather up the corners and tie together. Dip this bag in the water, and squeeze it until the water is blue enough. In this way the clothes will never become spotted.

To clean a copper kettle, first rub it with a cut lemon dipped in powdered bath brick. When all stains are removed, wash it in warm, soapy water, then dry, and polish it with powdered bath brick and a soft cloth. Powdered bath brick, mixed to a paste with oil may be used instead of the lemon.

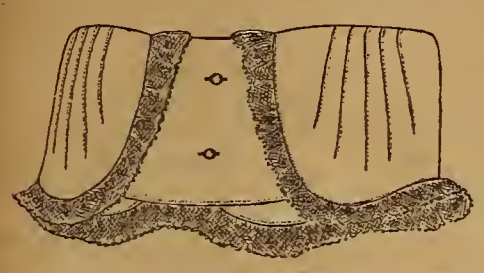
Some of the signs by which to tell good fruit and vegetables are here indicated: Oranges are sound and juicy when heavy, but not too hard. Radishes and turnips when spongy are not fit to eat. Pineapples are best when the edges of the top are smooth; in inferior qualities the tops are of the saw-edged variety. Celery is good when it breaks without much bending. Asparagus should be quite stiff. Nuts cannot be judged very correctly until they are opened, but they should be of good weight and not too hard to crack.

Collars for the Summer Shirt Waist and Blouse

BY CAROLINE WETHERELL

THE stiff linen collar, that fashion replaced with the stock, is to come into favor again, but "with a difference." There was always something distinctively mannish about the laundered linen collar, but its successor is characteristically feminine. These new collars are all of the turnover type, the inner section being of stiff linen, like the old-time linen collar, but the outside, or turnover, being sometimes of a single thickness of fine butcher's linen. What sets the new turnover apart from its predecessor is the fact that it is more or less elaborately embroidered.

Hemstitching or drawnwork is used to advantage in the decoration of the simpler collars, both sections of which are frequently made of double layers of linen, so that they may be laundered to a stiffness which is pleasing to the aggressively tailor-made girl. Embroidered dots are sometimes added to the hemstitching or



DEEP LACE-FRILLED LINEN COLLAR ADORNED WITH HEMSTITCHED TUCKS

drawnwork, and simple flower designs of all sorts are found worked in their corners.

A slightly more ornate collar is the one adorned with hand embroideries and bordered with insertions and edges of embroidery. Lace also is frilled about the edges of some collars, but these are not of the very stiff variety, but with the more easily manipulated thin turnover of butcher's linen or batiste.

Medallions of lace or embroidery are utilized in making up these charming pieces of neckwear. Eyelet embroidery is one of the most favored forms of work, as it is light and graceful in most of its designs, and can be combined well with lace or flat stitching.

Most of these collars open in front, which suggests that the day of the blouse buttoned in the back is about over. Ties of silk and lace are suitable for wear with the embroidered turnover, and a wide latitude of choice seems to be allowable, if one may judge by the variety of designs shown in the shops.

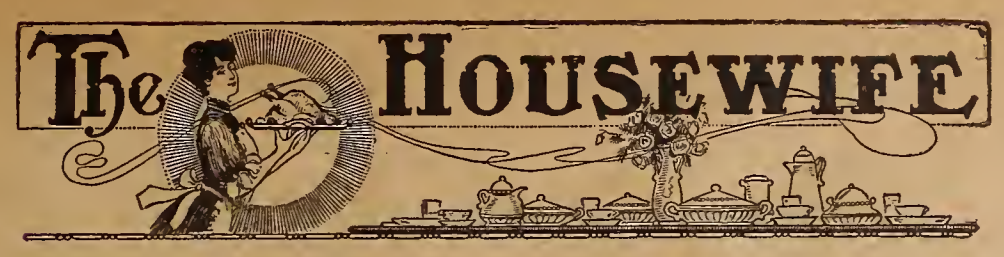
◈

Lingerie Collar Adorned with Tucks and Lace

FINE white linen and Valenciennes lace edging were used in making up the handsome imported collar which is sketched here. It is intended for wear with a white lingerie or shirt waist. The collar may be easily copied by the home needleworker. The work may be a good deal simplified if you have an old turnover linen collar, the inside half of which is good enough to serve as the inside or foundation half of this one. The outer half, or turnover, is cut from one layer of rather heavy but fine linen, what is known as butcher's linen is best. A strip of linen, rather deeper than the collar, is cut out. The middle of the strip is then pinned to the middle of the collar, and the position of the tucks marked off, so that they will come about where they are

EMBROIDERED LINEN COLLAR FINISHED WITH AN EMBROIDERED FRILL

shown in the picture. The strip is removed, and the five tucks on each side of the piece of linen are stitched up on the machine. Then the turnover is cut, with a wavy line around the bottom, along which is sewed a frill of Valenciennes edging. The foundation and turnover are stitched together, as done in making an ordinary linen collar of this shape. When laundered the collar is starched as stiff as possible. One of the bow ties mounted on a shield is worn with the collar, preferably one of lace or embroidery.



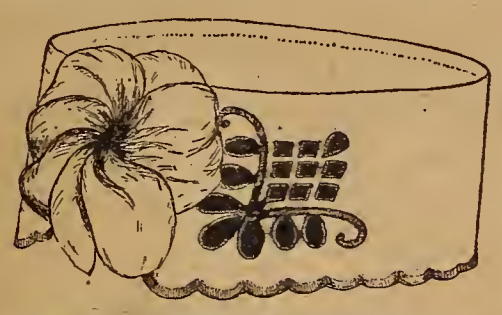
Hand-Embroidered Collar in Eyelet Work

A HANDSOME effect may be attained in the making up of one of the new turnover collars by combining eyelet work with lace or swiss embroidered medallions. A single layer of linen or batiste is used for the turnover, or outer half, of the collar. The home worker should be able to cut and shape this collar perfectly, by washing the starch out of one of the ordinary stiff linen collars of this shape, and if necessary ripping it apart to see how the sections are shaped and put together. In almost every house there is a plain old collar of this shape which has been cast aside by the men or women of the family. Round the piece of linen used for the embroidered turnover at the corners and mark the design and scallops with a lead pencil. The medallions should be basted to the ends of the turnover and then fastened into place by two very narrow rows of buttonhole stitching, the smooth, even side of one running around the outside of the medallion and the even side of the other around the inside. The linen is then cut away underneath each medallion and it is framed in a circle of eyelet work, as shown in the sketch. The very simple spray illustrated may be used for the rest of the design, or any one preferred may be chosen. The stems of the sprays in this case are worked in stem stitch and the scallops are finished in buttonhole stitch, the scallops being slightly padded.

◈

Lace and Linen Collar

THIS is one of the prettiest designs for the new embroidered turnover collars intended to be worn with the washable blouse of lawn and lace or the ever-useful shirt waist. The upper part of the turnover is embroidered on heavy linen



EMBROIDERED LINEN COLLAR WITH KNOTTED TIE OF SOFT SILK

or batiste in eyelet embroidery. The dots at the side are put on in ordinary flat embroidery, and the large and small scallops are done in buttonhole stitch. Lace is laid in scant box plaits and inserted under the embroidered scallops, so that its edge covers the stiff foundation of the collar when the turnover is stitched into place. The inner part, or foundation, of the collar is made of several thicknesses of linen, just as is an ordinary turnover collar. An old collar of this shape from which all the starch has been washed may be ripped apart and used as a model and pattern for this collar. When laundered, this style of collar should be starched stiff, with the exception of the lace. It is worn with a butterfly tie of lace mounted on a shield.

◈

Polka-Dotted Linen Turnover Collar

ONE beauty of the pliable linen turnover collar of this season is that any clever girl can make her own supply. The outside of the one shown in the sketch consists of a single layer of fine butcher's linen worked with large embroidered dots, white or tinted linen or cotton floss being used. The edge is hemmed, the top of the hem being finished with a row of hemstitching. A second row of hemstitching is applied just above the first one. If it is still presentable, the inside of an old turnover linen collar may be used for the standing part of this one. The old turnover must be ripped off and the embroidered turnover slipped into its place and stitched down on the machine. A bow tie of silk, lawn, lace or embroidery is the correct form with this collar.

◈

Nut Squares

BEAT well one egg with one cupful of brown sugar and a pinch each of salt and soda. Add one cupful of good nut meats chopped fine. Drop small portions of this on buttered tins, and bake about ten minutes.

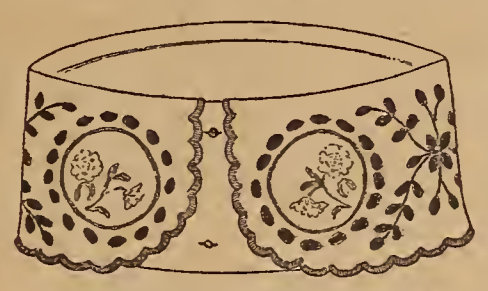
Collar Embroidered with Maltese Crosses

SOME of the smartest collars shown in the fashionable stores may this season be duplicated by those who are fairly successful needlewomen. Take the design shown in the sketch. It is one of the new turnovers, made with a foundation, or inner part, of three or four ply linen, so that it may be starched as stiff as the ordinary linen turnover. The outer half, or turnover, is made of a single layer of linen embroidered with fine white floss and finished with an embroidered frill, overlaid with a narrow band of embroidery. All this may be hand work or the embroidery for the frill and band may be bought for the purpose, care being taken that it matches the crosses as nearly as possible. There are many of the narrow swiss edgings that look almost like hand work. The wreaths enclosing the maltese crosses are worked in leaf and stem stitch. The crosses are padded and worked in leaf stitch, the outside being finished with a very fine buttonholing. An embroidered bow mounted on a shield looks best with this collar.

◈

Corn Bread

TO MAKE good thin corn bread, take one pint of soft ground white or yellow cornmeal, add one scant teaspoonful of salt and one large tablespoonful of shortening. Pour slowly over from the kettle sufficient boiling water to moisten thoroughly, stirring well. Cover, and let stand for at least thirty minutes; when this can be done much earlier, or at night if for the following breakfast, it is a decided advantage. Now stir in three well-beaten eggs, one or more tablespoonfuls of sugar (according to the sweetness desired), one pint of sifted flour and



STANDING COLLAR DECORATED WITH EMBROIDERED MEDALLIONS AND EYELET WORK

sufficient sweet milk to make a soft batter. Beat hard, add one teaspoonful of baking powder and beat again, then pour a scant inch deep in well-greased baking pans. Bake thirty minutes in a hot oven.

◈

New Linen Turnover Collar in Open Work

HEAVY linen with this simple scroll and diamond pattern worked in eyelet embroidery forms the turnover on one of the dainty new lingerie collars. The shape of the collar is so exactly that of the ordinary stiff turnover collar that the pattern may be cut from one of these. The outside of the collar consists of but one thickness of linen, and is scalloped and buttonholed about the edge. The arms supporting the cut-out leaflets at the side of the embroidered pattern are worked over and over in flat embroidery. A bow of lawn or lace or a silk scarf may be worn with this collar.

◈

Cottage Cheese

SOMETIMES, after draining the curds through a cheese-cloth bag, the curds are tough and lumpy. When such is the case, run them through the food chopper and they will become light and delicate. Then add cream, salt and pepper, and you will have a dainty dish.

◈

Corn Fritters

STEW one can of corn; strain off the juice, and press the kernels through a colander. Then add one half pint of milk, one level teaspoonful of salt and one saltspoonful of pepper. Add the yolks of three eggs and one pint of pastry flour sifted with one rounding teaspoonful of baking powder. Mix thoroughly, and fold in the beaten whites of the eggs. Drop by spoonfuls into extremely hot fat, and when sufficiently drained serve with maple sirup.

Hot-Weather Puddings

FRUIT PUFFS—Fill old cups or baking-powder cans to the depth of two inches with strawberries, sliced apples or any kind of berries, and cover with a layer of sugar. Put in each cup a small lump of butter, and completely cover the berries with a batter made of one egg, one pint of sweet milk, one and one half teaspoonfuls of baking powder and flour to make rather stiffer than for pancakes. Bake forty minutes in a steady oven.

CHOCOLATE PUDDING—Stir together one small cupful of sugar, four tablespoonfuls of grated chocolate, three tablespoonfuls of corn starch, two eggs and a little sweet milk to make a smooth, creamy mass. Have ready one quart of boiling milk, and stir the liquid into it as you would make starch, beating all the time, to prevent lumps. Flavor, and serve with cream.

APPLE TAPIOCA—Pare and core in halves ripe sour apples, and cook slowly in a granite pan to keep them whole. When

EMBROIDERED AND LACE-TRIMMED TURNOVER OF LINEN

half done add sugar to taste, and cook until clear and tender in the sirup. When done arrange in a glass dish and pour over them warm tapioca. To prepare the tapioca, stir into one pint of boiling water three tablespoonfuls of quick tapioca, add two tablespoonfuls of sugar, and boil until clear, taking care to keep from scorching. Eat with cream.

RED RASPBERRY PUDDING—Bake a common cake, using less butter than usual, and when done and still warm split as for short cake. A sponge recipe is good, or any cheap cake. Have ready one quart of red raspberries slightly mashed and sugared to taste. Spread the lower half of the cake, and then add the top layer, covering again with berries. May be eaten with whipped cream or plain.

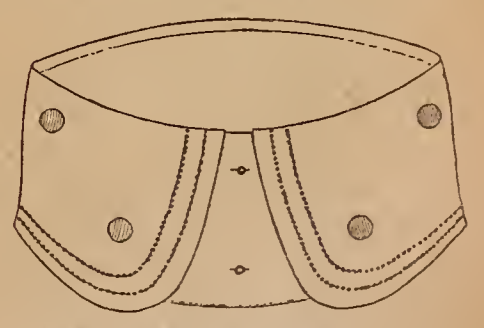
PEACH CUSTARD—Slice ripe peaches in a glass dish and sugar them well two hours before they are to be served. Make a boiled custard by taking three eggs, one and one half pints of sweet milk and one tablespoonful of corn starch and one cupful of sugar. Boil, after thoroughly beating together, in a double boiler until thick and smooth. Pour over peaches and serve while slightly warm.

PLUM PUDDING—Fill a deep baking pan to the depth of two inches with seeded plums, well sugared. Dot with bits of butter, and put over the top a thick, good light biscuit crust with holes, for the steam to escape. Bake forty minutes and serve with the juice from canned plums or cream. This is a good pudding, when canning is going on, to use up the surplus juice. Seeded grapes, peaches, apples or cherries may be used instead of plums.

◈

To Wash Curtains

I FIND a very satisfactory way to do up lace curtains in the spring is to wash and starch in the usual way, then take on the lawn where the grass is evenly



HEMSTITCHED LINEN COLLAR WITH EMBROIDERED DOTS

mowed. Sit down, and with a box of toothpicks straighten the curtains and points all out, and stick a toothpick through each scallop into the ground. Leave them in the sun to dry, then lift off or remove the picks, when your curtains will be beautifully laundered.

◈

We will be glad if you will get up a small club for FARM AND FIRESIDE. Have you many neighbors who do not take it? You will do them a kindness by sending us their subscriptions—and we will appreciate it, too.

Summer Clothes for Children

By Grace Margaret Gould

NO MATTER how many gowns you are making for your little daughter's wardrobe this season, don't forget the sailor suit. She will need it, and there is no doubt about her liking it. These common-sense costumes for small children owe their popularity to their comfort and to the fact that they are becoming to both slender and plump little figures, and may be worn by girls of almost any age.

The sailor suit is at its best this season, even though it is such an old story. It is made up not only in fine serge, but the new corded cottons, cheviots, mercerized madrases, unbleached muslin, piqué and heavy linens. It is trimmed very frequently with coarse white or colored linen, and often the collars, shields and wristbands are embroidered in heavy silk matching the dress in shade.

The smart sailor suit illustrated on this page in design No. 921 is what might be called an adaptable pattern, as it is possible to make several different dresses from this one pattern.

The pattern No. 921 may be ordered from the Pattern Department, The Crowell Publishing Company, 11 East 24th Street, New York City. Price ten cents. The pattern envelope contains ten pieces. Six pieces for the blouse are lettered as follows: Front (V), back (T), sailor collar (Y), pocket (I), sleeve (K) and wristband (J). The standing collar is lettered (L) and the skirt (E). The front and back of lining are designated by a large triangle perforation.

Smooth the pieces of the pattern out and pin to the material. One illustration shows the most economical manner of placing the different pieces of the pattern on material thirty-six inches wide.

In cutting, lay the edges marked by triple crosses on a lengthwise fold. Place the other parts of pattern with the line of large round perforations in each lengthwise of the goods. It will be noticed that a tiny piecing is made on the under of the sleeve. The skirt is cut with a fold in the center front, and then pieced at the sides. The joining in this case comes under a plait and does not show. If there is no up and down or nap to the material, the pieces may be fitted into each other, and fully one half yard less of material will be required.

Mark every perforation and cut out each little notch carefully before removing the pattern from the material.

Face the lining front between the lines of small round perforations with contrasting material to simulate a shield. Join the standing collar to neck of lining by notch. Turn hems on lining backs and collar by notches, and fasten with buttons and buttonholes.

Turn a two-and-one-half-inch hem at lower edge of skirt by line of large round perforations. Stitch this hem and press well. Finish a placket at center-back seam as far as notch. Form the plaits in the skirt by bringing the corresponding lines of triangle perforations together. Baste these plaits and press them flat. For children that are inclined to be stout it is well to stitch these plaits

No. 921—Girl's Sailor Suit

Pattern cut for 6, 8 and 10 year sizes. Quantity of material required for medium size, or 8 years, four and three fourths yards of twenty-seven-inch material, or three and three fourths yards of thirty-six-inch material, with three fourths of a yard of contrasting material for trimming

to a yoke depth. Before joining the skirt to the lining lap the plaits at the top, bringing the edge of each plait to the large round perforation. Now join skirt to lower edge of lining as notched, and fasten at the back. If the plaits are not stitched down, tape them on the under side at the second row of triangle perforations, being careful to have the tape loose enough to go around the hips with ease. If this tape is too tight it spoils the effect of the skirt.

The front of the lining is cut out at the neck on the line of small round perforations to make the sailor blouse. Join the pieces by corresponding notches. Join the sailor collar to neck by notch. Turn hems on fronts of sailor blouse by notches. Lap the fronts, bringing the corresponding lines of large round perforations together, and fasten with buttons and buttonholes. Turn up the lower edge of the blouse in a narrow hem or finish with a casing. Insert a tape or elastic to draw the blouse in closely around the waist and regulate the fulness. Face the lap of the pocket. Turn the lap over by line of perforations. Arrange the pocket on the left front of the blouse, bringing the upper edge to the line of small round perforations.

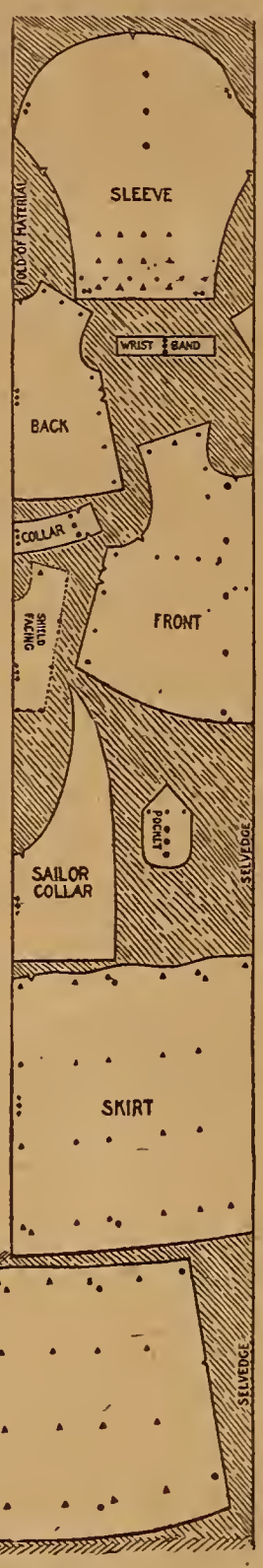
Crease the sleeve on lines of triangle perforations. Stitch one fourth of an inch in from the edge of each crease to form the tucks. Gather the sleeve at upper and lower edges between double crosses. Finish the wristband, and join to the sleeve, bringing lower edges of sleeve and wristband together. Arrange the sleeve in arms-eye, placing front seam at notch and top notch at shoulder seam. Pin the plain part smoothly into the arms-eye, and draw up the gathers to fit the remaining space. Distribute the fulness evenly, pin carefully and then baste.

The small back view of the waist shows the sleeve without the wristband.

One illustration shows a simple blouse suit (without sailor collar), which may be made by this same pattern with the following changes: The blouse is not cut out in front, but reaches to the neck and is finished with the standing collar. The sleeve is cut off on line of small round perforations and the tucks are not taken up. Gather sleeve at lower edge and join to upper edge of wristband. The skirt is gathered instead of being plaited, and may be finished with a belt or joined to the lower edge of an underwaist or lining made from the lining pattern. Buttons are sewn on this waist, and the drawers and petticoats as well as the skirt may be attached to it.

Of course it is not necessary to carry out either of these ideas exactly as they are illustrated. The pattern is particularly adaptable and may be made up in several other styles. The sailor blouse may be used with gathered bishop sleeves and a full skirt instead of a plaited one.

The shirt-waist costume would be particularly becoming to a plump little girl if instead of the gathered skirt (which will make her look stouter) the plaited skirt is used.



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This Simple Shirt-Waist Suit Can Be Made from the Sailor Suit Pattern No. 921

No. 896—Dress with Side Trimming, with or without Guimpe

Pattern cut for 6, 8 and 10 year sizes. Quantity of material required for medium size, or 8 years, five yards of twenty-two-inch material, or three and one half yards of thirty-six-inch material, with two yards of all-over embroidery for guimpe

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By Grace Margaret Gould

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Of Curious Interest

Illustrated Contributions to this Department Are Invited, and Those Accepted Will be Paid For

In Old Saint Augustine

QUAINT old Saint Augustine, in Florida, the oldest city in the United States, has come to be a winter resort of great popularity. Its antiquity fills it with interest. Ponce de Leon, in his quest for the fountain of youth, made a landing near the site of the present city in 1512, and a short drive from the gate posts, which were built by the Spaniards, is a well said to have been dug by the followers of the adventurer in 1513. The water is strongly impregnated with sulphur, so that while one glass may be drunk with pleasure, a second is apt to meet with much less favor.

The gates before spoken of show many signs of decay. In the early days of the city it was necessary to guard against the Indians at all times. At each side of the gate is a stone sentry box, where soldiers were always posted.

In order to strengthen the city, the Spaniards built a large fort, which is still

OLD SLAVE MART IN SAINT AUGUSTINE, FLORIDA

in fairly good condition, and was occupied by government troops before the recent war with Spain. This old fort was a hundred years in construction, the work being done by native Indians and Mexicans.

Another object of curiosity in the old town is the slave market. This is located in the plaza, or public park, in the center of the city, and is now used as a pavilion. The structure has doubtless been the scene of many tragedies in the lives of old-time slaves, and is viewed with interest by visitors, especially those from the North.

◈

All Fours Off the Ground

NOWADAYS there is a strong inclination among the camera people to take anything and everything that goes fast.

Here is the picture of a mare that at the time the picture was made wasn't touching ground at all. The animal was snap-shot at an instant when all four feet were off the track.

The picture shows the mare in the act of making a trotting race at Benton Harbor, Michigan, when she was twenty-three years old, and she won the race.

◈

World's Shortest Railroad

LOS ANGELES, California, claims the shortest railroad in the world. The line in question covers less than a block of ground, and probably carries more passengers daily than any other railroad in the world, distance considered. This remarkable railroad is at Third and Hill Streets, in the busy section of the city. It has long been a problem as to how to overcome the mountainous stretch from Hill to Olive Street, but after years

PONCE DE LEON WELL, DUG IN 1513 BY THE SPANIARDS, AT SAINT AUGUSTINE, FLORIDA

of experimenting Colonel J. W. Eddy found the solution of the problem. Describing this railroad, commonly known as "Angels' Flight," Catherine Robertson Hamlin says:

"The rails of the incline are laid in two loops, one car starting down the hill when the other begins its upward journey. Each car runs on two tables, an active and an idle one, the latter being by way of safeguard in case of accident. Fortunately there has never been the slightest mishap on this the shortest, most unique and most interesting little railroad in the world, and this is the more remarkable, as the Census Bureau at Washington, D. C., shows that last year the 'Angels' Flight' carried more passengers than any railroad in America, and therefore more than any line in the world, the minimum being one thousand and the maximum four thousand a day.

"The road terminates in a pavilion with wide balconies, from which a superb view of the city may be had, and from which a steep flight of stairs leads to a tower, 'Angels' View,' where it is claimed the best camera obscura in the world is installed, and where excellent field glasses are provided to aid the vision in taking in the 'Angels' View,' that is grand beyond compare, overlooking as it does, sea and mountains and near-lying city.

"Through a tunnel under the hill the city's heavy traffic finds its way, while the people adopt the pleasanter 'flight' up over the mountain."

◈

The American Brown Bear

PEOPLE generally know the African lion is the King of Beasts, but in reality he is not nearly so large or so powerful an animal as the large brown bear of sub-Arctic America, and, too, very few persons really know that the largest flesh-eating animals in the world are found in America.

The bears are not as ferocious or combative as the lions, nor are they nearly as vicious as they are given credit for being; but the largest of them are much larger and more powerful than any of the lions. It is safe to say that the largest of the brown bears of the North would weigh three times as much as the largest specimen of lion, and is beyond all question greatly superior in strength.

If brought together in combat, the bear

CAUGHT BY THE CAMERA—ALL FOURS OFF THE GROUND

would at first appear very clumsy, says "Scribner's Magazine." It would not be capable of the quick rush or the catlike spring of the lion.

It would not attack, but would remain entirely on the defensive, meeting its adversary with blows of such rapidity and terrific force as at once to illustrate its superiority not only in strength, but in action. I do not believe that there is an animal in the world that can act more quickly or effectively or can aim its blows with greater certainty than the bear.

The large brown bears of the Alaska peninsula, south of Bering Sea, are among the largest bears in the world, and it is evident that there is no part of the world outside of America in which such large flesh-eating animals are found. The bears are flesh eaters, or carnivorous, yet there are none of them that depend upon flesh for food, and with most of them flesh comprises but a very small percentage of their food.

◈

The Laziest Man

PERIODICALLY we run across stories about people believed to be the laziest in the world, but the following about a man named Thompson, who lives with his mother at Clare, Lurgan, in Ireland, probably "gets the cat:"

He went to bed in 1877, when he was a boy of eleven. He was waited on by his mother, and he would probably have remained in bed for the rest of his life had she not become ill two weeks ago and been taken to the hospital, leaving him alone. He was compelled to get up, and the work of squeezing him into the suit which he discarded twenty-nine years ago took three men a whole evening. Thompson told them he was too tired to walk, and an ambulance had to be summoned to carry him to the workhouse. There he reposed until his mother was well again. But the officials made him walk home. When Mrs. Thompson applied for relief to the poor officer an inquiry showed that several medical men had tried to stimulate Thompson out of his chronic lethargy. Irritating plasters were applied, but they were powerless to stir him. Electric currents left him unruffled, and finally he was left by the doctors to enjoy the serene calm they were unable to disturb. Thompson is in bed again, and his suit of clothes has been put away.

◈

The Big Bible of Tibet

THE Tibetan Bible consists of 108 volumes of 1,000 pages each, containing 1,083 separate books. It is said that each of the volumes weighs ten pounds. This Bible requires a dozen yaks for its transportation, and the carved wooden blocks from which it is printed require rows of houses like a city for their storage. A tribe of Mongols paid 7,000 oxen for a copy of this Bible. In addition to the Bible, there are 225 volumes of commentaries, which are necessary for its understanding. There is also a large collection of alleged revelations which supplement the Bible.

◈

Mice as Engineers

PROFESSOR BALLISON, according to the "Popular Science News," claims that mice are good engineers. In digging holes for telegraph poles one of the workmen became greatly interested in watching the ingenuity and perseverance of a mouse which had fallen into one of the holes. It was four and one half feet in depth and twenty inches in diameter. The first day the little prisoner spent in running around the bottom of the hole and trying to find a means of escape. The second day he had got over his hysterics and settled down to steady business. He began systematically to dig a spiral groove around the inner surface of the hole with a uniform ascending grade. He worked night and day. As he got further from the bottom he dug little pockets where he could lie and rest. The interested witnesses kept it well supplied with food. After a while the mouse struck a rock; he tried to get under, around, and over the obstacle, but without success. He therefore reversed the spiral, and finally reached the top.

◈

To Africa for Big Game

TIME was when our Western plains were visited by many titled foreigners in search of big game. In the sixties and seventies millions of buffaloes roamed these plains, and many there were that fell prey to the great hunters. To-day there are not more than six hundred buffaloes remaining. The titled foreigners now go to British East Africa for their hunting.

◈

The Sod House

THE early settlers in the western counties of Kansas and Nebraska either lived in dugouts or sod houses. The dugouts were built under ground, while the sod houses were constructed above ground. The dugout was generally a room made from an excavation in the side of a hill, and roofed over with boards or sod like a cave or cellar. But the sod house was put up on level ground. These early homes were cheap, easily constructed, and were a sure defense against the storms that often swept over the new country. Besides, they could be made cozy and comfortable, being cool in summer and warm in winter. The dugout is almost a thing of the past, but there are quite a number of sod houses to be seen on the Western prairies. Of course, as civilization advances and the West settles up, the majority of the new homes are being built from pine lumber. Yet as one spins over the prairies of the extreme western portion of Kansas or Nebraska his eyes will be greeted every now and then by a well-constructed sod house, in which lives a happy and prosperous farmer with his growing family.

The sod house is built in a very simple manner. The layers of sod are cut out eight inches wide, two and one half feet in length, and three inches thick. Often the layers for the bottom courses are cut a little wider than those for the top, so that the wall will taper inward, as it

OLD CITY GATES, SAINT AUGUSTINE, FLORIDA

will thus be made stronger. After the dimensions of the house are determined, the layers of sod are built up as if they were stone. No mortar is put between them, and the grassy side is turned down. With a trowel the builder keeps the top of the wall leveled off, and the crevices between the ends of the layers are filled with dirt. Spaces are left for the doors and windows, and after the desired height is reached, rafters are put up as in an ordinary house. When the rafters are sheeted with lumber, a shingle or a sod roof is made. It is claimed a shingle roof is the better, because the mice cannot burrow into it, causing it to leak in rainy weather. The inside of the walls are plastered with common lime or cement, and the rooms are cozy and clean. In fact, many prefer to live in the sod house, because it can be made just as beautiful as any home on the inside, and is much more comfortable in the summer and winter.

◈

The Squaw in Different Spheres

A SQUAW in a house is anything but a success, but put her in a tepee and she is the neatest of housekeepers, comments the Denver "Republican."

Everything in one of these big, roomy tents is in apple-pie order. The blankets are neatly rolled and stowed away under the edge of the tepee, leaving the center clear. Bright-colored blankets and fine fur robes are spread about, and a wonderfully beaded dance drum hangs from one of the poles.

Go into one of these frame houses and you will find the mattresses laid along the floor, with the whole family sprawling thereon. The cracked cook stove will be in the middle of the floor, with anything but agreeable odors coming therefrom while the meal is in progress. Outside

THE SOD HOUSE—COMMON TO THE EARLY WESTERN SETTLERS AS A PLACE OF ABODE

the bedsteads and springs will be used as chicken roosts.

But the squaw doesn't let her housekeeping shortcomings worry her. When she puts on an elk-tooth robe, valued at anywhere from one thousand five hundred to three thousand dollars, and rides to the fair or to the agency on a Sunday astride a beaded saddle, she is a picture of contentment that any of her white sisters might envy.

SUNDAY READING

John Wesley's Rule

Do all the good you can,
By all the means you can,
In all the ways you can,
In all the places you can,
At all the times you can,
To all the people you can,
As long as ever you can.

◈

True Charity

"THE good things men do lives after them" is beautifully exemplified in the disclosure, brought about by the death of Sir Francis Tress Barry in England, of a touching secret of twenty-three years duration.

The custom of distributing toys and giving a little show at Christmas to the thousands of poor children in the London workhouses and workhouse schools has been maintained by the editor of the "London Truth" for nearly a quarter of a century. Twenty-three years ago a messenger visited the office of "Truth" two weeks before Christmas, bearing a heavy bag and a letter. The bag contained five thousand new sixpence, fresh from the mint, and the letter requested

MRS. LILLIAN M. N. STEVENS
President of the Woman's Christian Temperance Union, and who has succeeded to much of the influence of the late Frances Willard

that they be given to the workhouse children. Every year since then, just before Christmas, the incident has been repeated, and although the editor of "Truth" has frequently expressed to the messenger the wish that the generous donor would make himself known, the answer has always been that he preferred to remain unknown. For several years the number of the new sixpence distributed has been eleven thousand. Think of the amount of happiness they have conferred, and of the modesty and simple-hearted kindness of the giver! Sir Francis' family revealed the source of the gifts only after his death.

◈

The President on Sunday Closing

WHILE serving as police commissioner of New York, President Roosevelt was instrumental in closing the saloons on Sunday. Immediately a great cry went up that he was afflicting the poor man. Replying, Mr. Roosevelt said:

"Many of the demagogues who have denounced us have reproached us, especially because we took away 'the poor man's beer,' and have announced that, law or no law, the poor man had a right to his beer on Sunday if he wished it. These gentry, when they preach such doctrine, are simply teaching lawlessness. If the poor man has a right to break the law so as to get beer on Sunday, he has a right to break the law so as to get bread on any day. It is a good deal more important to the poor man that he should get fed on week days than that he should get drunk on Sundays. The people who try to teach him that he has a right to break the law on one day to take beer are doing their best to prepare him for breaking the law some other day to take bread.

"But, as a matter of fact, all the talk about the law being enforced chiefly at the expense of the poor man is the veriest nonsense and hypocrisy. We did not hurt the poor man at all. The people whom we hurt were the rich brewers and liquor sellers, who had hitherto made money hand over fist by violating the Sunday law, with the corrupt connivance of the police.

THEIR NEWSPAPER ALLIES

"There is small cause for wonder that they should grow hot with anger when they found that we had taken away the hundreds of thousands of dollars which they had made by violation of the law. There is small cause for wonder that their newspaper allies should have raved. But it is a wonder that any citizen, wishing well to his country, should have been misled for one moment by what they have said. The fight they have waged was not a fight for the poor man; it was a fight in the interest of the rich and unscrupulous man, who had been accustomed to buy immunity from justice.

SUNDAY CLOSING HELPS THE POOR MAN

"As a matter of fact, we have helped the poor man, and, notably, we have helped the poor man's wife and children. Many a man who before was accustomed to spend his week's wages getting drunk in a saloon, now either puts them up or takes his wife and children for a day's outing. The hospitals found that their Monday labors were lessened by nearly one half, owing to the startling diminution in cases of injury due to drunken brawls. The work of the magistrates who set in the city courts for the trial of small offenders was correspondingly decreased. All this was brought about by our honest enforcement of the law."

◈

The Folly of Sin

"THERE was once a man on a ship, standing near the rail, tossing something up into the air. It was a diamond of rare and wondrous beauty. He had sold all his property and invested it in this gem. A companion warned him that he might lose it. 'But I have been throwing it up this way for fifteen minutes, and have not missed catching it. See how it sparkles.'

"It was a beautiful thing, and as he threw it up again it sparkled and splashed and blazed with splendor. But the ship gave a slight lurch. The man reached frantically for it, but it merely grazed his fingers on its way to the water.

"You may think this is not a true story, but it is happening every day. You are that man. That ship is life, and the sea is death, and that rare jewel you are so carelessly tossing about is your soul. Repent before it is too late.

"How do you know you may not die to-night? I have no faith in this theory of death-bed repentance. Have you any guarantee that you will have a lingering death? Some people do not have a chance to repent at the last minute. Do you know that you will have? I was called very hastily to see a man who was notoriously out of the church. I came into the room and talked to him as rapidly and as earnestly as I could. But I had talked to him only a minute, when there was a slight noise, and I was looking into the face of a dead man."—Doctor Torry.

◈

Somewhere To-day

Somewhere to-day the woods are green
And moist and sweet with shade,
Somewhere to-day the thrush doth sing
From secret leafy glade—
Somewhere to-day.

Somewhere to-day the water gleams
And glistens in the sun,
As if a thousand jewels rare
Upon its breast were flung—
Somewhere to-day.

Somewhere to-day the strawberry
Doth ripen on the hill,
The cattle clip the juicy grass
And wander at their will—
Somewhere to-day.

Somewhere to-day the pathways wind
Along the singing brooks,
By open fields and then again
Through fragrant vine-hung nooks—
Somewhere to-day.

Somewhere to-day the wild flowers bloom,
The insects hum and sing,
The clouds like dream thoughts come and go,
The birds pass swift awing—
Somewhere to-day.

Somewhere to-day a rich life stream
Doth pulse from Nature's heart
And I in fancy o'er its brink
Do lean and sip a part—
Somewhere to-day.

—Jane Dransfield Stone in Boston cooking School Magazine.

Of Friendship

He was my friend because I seemed to be
Somehow responsive to his changing mood;
I chanced to help, once, when he needed me,
And lost his friendship for his gratitude.
—Kenneth Wilson in Appleton's Magazine.

◈

Good Rules

THE longer I live, the more I feel the importance of adhering to the rules I have laid down for myself in relation to such matters.

1. To hear as little as possible to the prejudice of others.
2. To believe nothing of the kind till I am absolutely forced to it.
3. Never drink in the spirit of one who circulates an ill report.
4. Always to moderate, as far as I can, the unkindness which is expressed toward others.
5. Always believe that, if the other side were heard, a very different account would be given to the matter.—Carus' "Life of Simeon."

◈

Don't Slouch

DON'T slouch along in your gait, as though you were afraid to raise your feet. Show by your carriage that you are worth considering. Step lively, as though you had some business in hand, even if you have not. Never allow your physical standard to drop. Keep up your vinegar. Walk as if you were going to do something. Don't shuffle like the failures we see sitting around on the park benches with their hands in their pockets.

Don't give people the impression that you are discouraged. Hustle right along. The boy who thoroughly believes in himself walks with his head up, his chin in, his shoulders back and his chest out. Stand erect. Be a man. Don't slouch. You cannot aspire to accomplish great and noble deeds if you assume the gait of a tramp. You were created to walk upright. Put character, energy, strength and rustle into your walk, and after a while you won't have to walk.—Western Christian Advocate.

The Young People

Every Boy His Own Carpenter

BY JOSEPH H. ADAMS

[Second Part—Continued From May 10th Issue]

Fig. 7 shows a beveled edge, Fig. 8 a rabbet, and Fig. 9 a tongue and groove, or matched edges, which are cut on boards that are planed on one side, and used for floors and small buildings. This edge makes a good union between boards, and at the same time brings two surfaces together evenly. A very simple union can be made with a rabbet and groove, as shown in Fig. 10. Fig. 11 is a dovetail, used for corners of boxes, bureau drawers and chests.

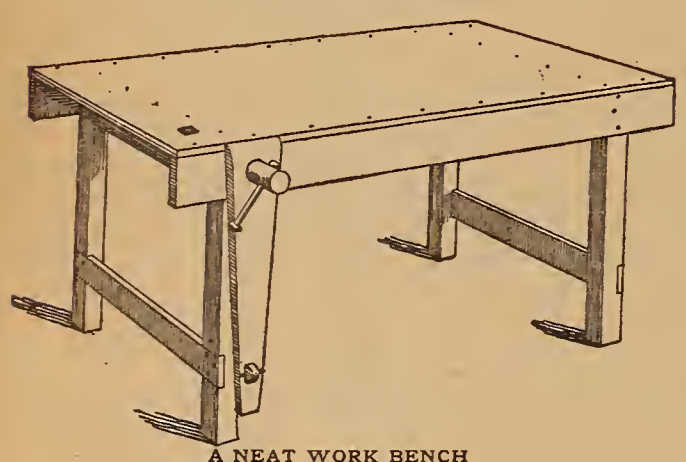
All of these joints are used in construction, and to become a good amateur carpenter it is necessary to master them and be able to make them.

A TOOL RACK

The tool rack shown in the illustration consists of a pine board of convenient length and width, on the face of which stout straps of leather an inch wide are secured, with loops between the fastenings sufficiently large to admit the tools they are designed to hold. The loops may be fastened in place with three-fourths-inch round-headed brass screws.

A WORK BENCH

For the average boy a work bench (see illustration) should measure five feet long, three feet high and two feet six inches



A NEAT WORK BENCH

wide. Pine or whitewood is best for its construction. The top and side aprons can be of tongued and grooved boards seven eighths or one and one fourth inches thick. For the legs take four sticks of yellow pine or ash three inches square and thirty-six inches long, and plane them on all sides. Then get two pieces of clear pine six inches wide and thirty inches long, and two pieces four by thirty inches. These pieces should also be planed on all sides, and be free from knots and sap places.

From one side at the end of the four legs cut out spaces six inches long and deep enough to receive the six-inch pieces of wood; ten inches up from the other end cut out places four inches long, so that the four-inch pieces may fit in nicely. Lay two of the legs thirty inches apart on the floor, and into the depressed places fasten the six and four inch pieces of wood with stout iron screws having flat heads, so that as a result one set of legs will appear as shown in Fig. 12. Repeat this with the remaining two legs and boards, and then proceed to build the bench.

Get two boards ten inches wide for the side aprons, and one foot from either end bore holes to receive screws. Fasten these boards to the top edge of the legs, taking care when doing so to have the edges of the boards at right angles to the legs. This can be guided by the square, so that an accurate and satisfactory construction will be the result. The boards for the top can be driven together and securely screwed to the crosspieces connecting the legs at the top, and along the sides to the upper edge of the aprons.

A bench screw can be purchased at a hardware store, and arranged in place with a board to act as a jaw. An iron bench vise will prove the most satisfactory. When the vise is arranged in place near a leg at one end of the bench, with a shifting pin at the bottom of the jaw, and a plane stop on the top, the complete bench will appear as shown in the illustration.

A PIGEON COTE

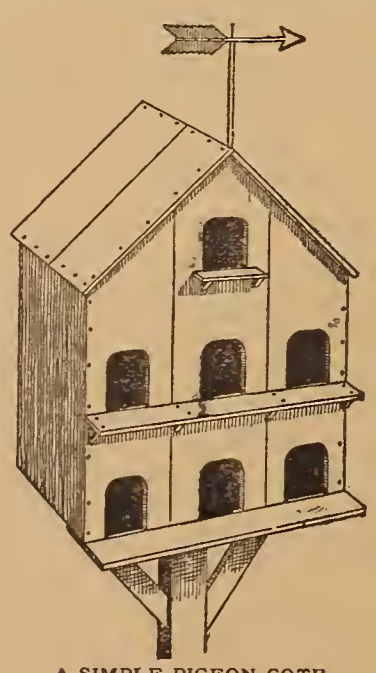
Boxes with holes cut in them will answer very well for pigeons, but they are not so attractive as a cote like a small house, such as you see in the illustration.

This one can be made from thin boards and a few nails with simple tools. Get two large boxes, and break them apart, taking care not to split the thin boards. Make a front and back for the cote of corresponding size, about twenty-four inches high at the sides and twenty-eight inches high to the top of peak. It will require two or three boards for each of these, and to hold them together place strips or battens across the inside, into which the nails are to be driven. Then make a bottom and two sides. The sides should be twenty inches high and ten inches wide, and the bottom the same width and about twenty-two inches long.

In the front of the cote make seven openings with a bit and keyhole saw, large enough for the pigeons to pass in and out, and arrange the interior of the cote so that each opening may lead to a compartment. The seven compartments can be made with thin boards, and the body part should be put together and fastened securely with wire nails and screws.

A roof of thin boards, made water tight with tongued and grooved boards if possible, can be nailed to the top of the cote. To provide landing places for the pigeons, cut six small angular brackets, and with them support the top and middle shelves, that should be three inches in width, and arranged in the positions shown in the illustration. To hold the bottom shelf in place, nail strips to the under side of it, and extend them under the cote, where they may be secured in turn with nails or screws. From a smooth shingle cut an arrow, and make it fast to the top of a small stick with a long, slim steel-wire nail. This stick should be fastened to the front of the cote at the peak in an upright position, as shown in the illustration.

The cote can be painted any color, and fastened to the head of a stick, on the side of a barn or in any other convenient place. If care is taken with this piece of work, the result will be very satisfactory.



A SIMPLE PIGEON COTE

Tom Tripp and His Baby Oxen

BY JOAN RACHEL

Little Tom Tripp was "harrowing in" his field of buckwheat with his yoke of calves, Jack and Robin. His father had given him a patch of rich ground about as large as a good-sized kitchen garden to do with as he chose.

Tom had been somewhat at a loss to decide what to raise upon it. Aunt Polly thought sunflowers and poppies and marigolds would be just lovely! But he thought it was "girls' work" to raise flowers.

Uncle John suggested potatoes. But, oh, dear! he would have to "tug" the heavy things in a bail basket all over the patch to drop. Then he must hoe them when the sun was hot enough to scorch him, or when he would want to go a-fishing. They would have to be "hilled up," too, like enormous ants' nests. It would take heaps of dirt to do that, and it always did make his back ache so to hoe! Besides, there were the tormenting potato bugs! Ugh! He wouldn't plant potatoes, that was certain.

Then grandma proposed catnip for Major (Sister Nan's cat), and sage for sausages and turkey dressing for Thanksgiving. This latter allusion did make little Tom's mouth water, but after much thought he settled upon buckwheat. It made such delicious griddle cakes!

And here he was this morning, the last of May, with Jack and Robin in their little yoke, and hitched to a diminutive harrow that Uncle John had made for them, pulling their best, and Tom tugging at the yoke to help them along; but the little harrow would get a big turf in its teeth, or get hung up on a stone, and Tom thought it too hard work for Jack and Robin, so he harnessed Towser, the great, good-natured dog, in front, tandem.

"Things had to march" then. But Jack did not like Towser, and kept hooking in his hind legs so much that he could not pay attention to his harrowing. So Tom had to cut Towser's traces and let him go. Then Robin and naughty Jack had to do the work alone.

But by this time Robin was awfully hungry, and so was Jack. Besides, they were just discouraged. And in spite of Tom, Jack would lie down in the furrow and chew his cud as fast as he could—poor little ox!—while Tom scolded, pulled at the yoke, fanned himself with his ragged hat and prodded him with his brown great toe.

But Jack didn't mind the toe, nor the scolding, if he could chew his sweet cud of clover.

Just then Aunt Polly came out of the shed with a tin pail of sour curds for the young turkeys. Now Aunt Polly had been in the habit of feeding sweet milk to Jack and Robin—it made them grow so fast—and as soon as they heard her call: "Turk! Turk! Turk!" up jumped Jack like a "Jack in a box," and away scampered both baby oxen toward Aunt Polly, jerking the little harrow over stones, through Uncle John's great beds of onion sets, cutting down a whole row of Aunt Polly's tender "pie plant," and getting hung up in a great gooseberry bush at last, where they bawled so loudly for their milk that Aunt Polly clapped her hands over her ears and hastened to the milk room for "something to stop their mouths."

Tom was angry and discouraged; but he persevered, and at last got his buckwheat harrowed in, and he raised nearly a bushel, which served for cakes the whole winter, besides giving the bees a delicious feast in blossom time.

The Slave Trade

Ask the studious-looking boy who gets a mark of 90 in his history class, when the slave trade was stopped, and he will probably tell you anywhere from thirty-five to forty years ago, comments the "American Boy," and if the young gentleman should find a cross instead of an O. K. at the end of his answer, he would probably be very much surprised. As a matter of fact, however, the slave trade has never been checked, and still more amazing, it is actually in progress, on a large scale, in the world to-day.

Hundreds of blacks are annually being sold into slavery in this progressive age of ours. Not in this country, true—the principal slave market of to-day is located in that grim old seaport of Tripoli.

Tripoli? our friend of the history class repeats. Why, that is where Commodore Decatur made himself famous in the war of 1812! Of course, you lads remember his dashing exploits in pirate waters, and how you held your breath at the story of some of his midnight expeditions over there on the African coast! Well, Tripoli to-day hasn't any better character than Tripoli of a century ago.

Negroes are still gathered from the interior of Africa, and herded into great groups for the highest bidder.

And the slave craft which ply between Tripoli and the outside world, it is stated by those who ought to know, find a pretty busy task, year in and year out.

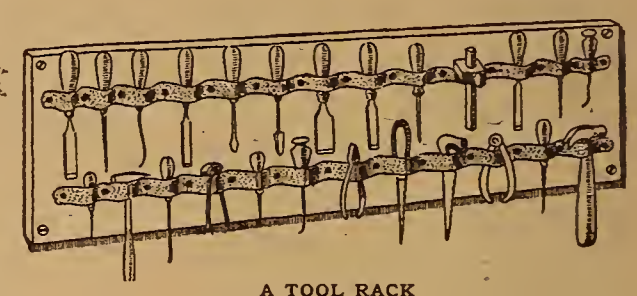
Turkey is the principal market, and its demand, it is said, is always greater than the supply. Any attempt to check the slave traffic would mean a clash with the Sultan, and while England and other nations maintain rigorous guard against the passing of slaves across the frontiers of their possessions, no one has as yet shown a wish to throw down the gauntlet to the mysterious old man, who rules the Turkish empire. And in the meantime the slave vessels of the Mediterranean continue to wend their stealthy ways back and forth over its rippling waters, with their human cargoes chained between decks.

What of It!

There may be more than one just cause for pride in the soul of the small boy at the close of his first day at school.

"How did you get on with spelling?" Bob's mother asked him. "You look so pleased I'm sure you did well."

"No'm, I couldn't spell much of anything," admitted Bob. "And I couldn't remember the 'rithmetic very well, nor the joggerp'y."

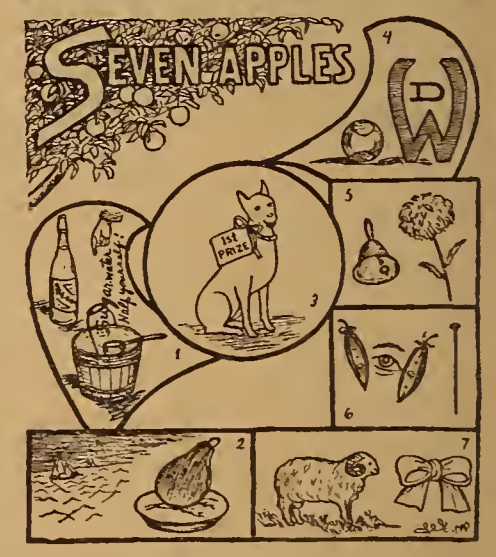


A TOOL RACK

The mother's face wore a look of disappointment, but Bob had reserved the choice morsel which was sure to raise a sensible parent to heights of appreciative joy.

"But that's no matter, mother," he said, bestowing a bear's hug upon her; "the boys all like me, and I've got the biggest feet in the class!"—The Epworth Herald.

The Puzzler



CHARADE NO. 1

"My Johnnie's at the door," said May,
"And wishes to come in,
And hopes if you'll but let him stay,
Your favor he may win."
"What is his business, pray? A WHOLE
With work enough to do;
He owns a shop, owes not a soul,
A house well furnished, too."
"Well, I'll not FIRST, at your request,"
Quoth I, and hurried past,
Opened the door (I thought it best),
And said, "Friend, you may LAST."

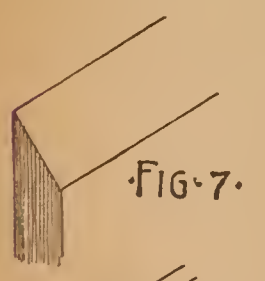
CHARADE NO. 2

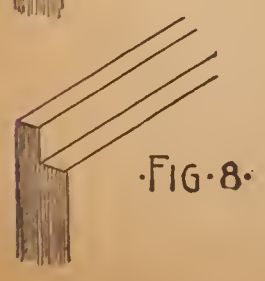
One morning Mary and I rode
Across the dreary heather;
It was in Scotland, and it snowed,
'Twas very bitter weather.
How SECOND is the day, said she,
My FIRST is surely freezing;
And such a ride, you must agree,
Is anything but pleasing.

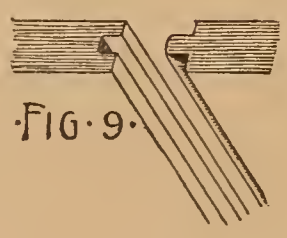
My THIRD, an article, though small,
Already has been quoted;
It don't effect this tale at all,
Although it must be noted.
But to proceed, a suit of fur,
My TOTAL muff and tippet;
Next morning I presented her,
Through snow she now can trip it.

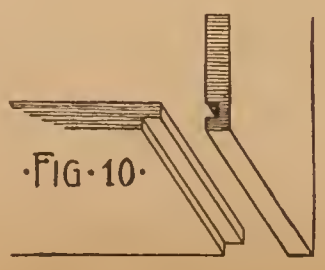
Answers to Puzzles in the May 10th Issue

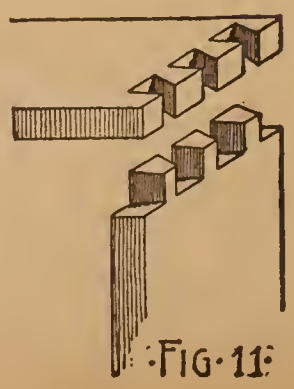
Implements and Machinery—Binder, Separator, Harrow, Roller, Drill, Windmill.
Charade No. 1—Garbage—garb-age.
Charade No. 2—Patriot—pat-riot.
Charade No. 3—Toys—t-o-y-s.
Charade No. 4—Piano—p-i-a-n-o.
Collection of Rivers (Hidden Words)—1. Ganges. 2. Indus. 3. Rhone. 4. Seine. 5. Irtish. 6. Ebro. 7. Tagus. 8. Severn. 9. Wye. 10. Missouri. 11. Thames. 12. Danube.

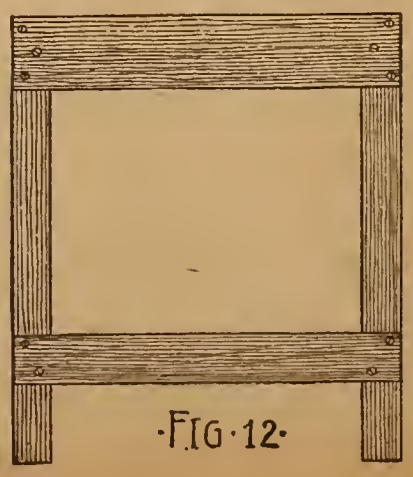












The Impossible

MRS. TITTLE—"That photographer's wife always goes to some other chap's studio to have her photographs taken."

MRS. TATTLE—"Of course; she never could 'look pleasant' when her own husband was about."

◈

A Fine Distinction

THE POLITICIAN (speaking with some warmth)—"No, sir—a thousand times no! I didn't sell myself. They bought me."

◈

The Real Driving Force

"It is love that makes the world go round, you know."

"Perhaps; but it is money that keeps the axle greased."

◈

Just When the Train was Due

"Do you consider kissing dangerous, Cousin Jack?"

"Most certainly! See how often it brings on marriage."

◈

No Bad Judge

HE—"Be mine, and I will lay the earth at your feet."

SHE—"It's already there! I'd rather have a three or four story house over my head."

◈

Winding Up

A little three-year-old lad had often watched with much interest his grandfather stirring his coffee before drinking it. One morning, on his grandsire's omitting to do so, he inquired, "Why don't you wind up your coffee, grandpa?"

◈

Stung

"You certainly look better; you must have followed my advice and had a change."

"Yes, doctor, so I have."

"Where did you go?"

"I went to another physician."

◈

Present but Wasn't

A French barrister, whose client had the misfortune to be found guilty, appealed on the ground that during the trial a juryman was asleep. The court of cassation has held that the juryman, being asleep, was technically not present during the hearing, and has quashed the verdict and ordered a new trial.

Implied

BRIDGET—"Yis, mum, an' Oi made the chicken broth."

MISTRESS—"What did you do with it?"

BRIDGET—"Shure an' Oi fed it to the chickens, mum."—Everyday Housekeeping.

◈

It Broke

"Freddy, you shouldn't laugh out loud in the schoolroom," exclaimed the teacher.

"I didn't mean to do it," apologized Freddy. "I was smiling, when all of a sudden the smile busted."—Harper's Weekly.

◈

A Suggestion That Came Too Late

LADY—"To-day I am thirty years old. Oh, why didn't my parents postpone their wedding for ten years!"—Fliegende Blaetter.

◈

Correcting the Mistake

CUSTOMER—"You've given me morphine instead of quinine!"

DRUGGIST—"Is it possible? In that case you owe me twenty-five cents more."—Petit Parisien.

◈

Had Her Hands Full

TEACHER—"Who was it supported the world upon his shoulders?"

TOMMY—"Atlas, sir."

TEACHER—"Who supported Atlas?"

TOMMY—"The book don't say, but I 'spect his wife did."—Ally Sloper.

◈

The Luck of Simon Cobb

Simon Cobb, a butcher in a small way of business, was in the habit of sending his son out with a wagon to deliver orders.

The lad was a careless driver, and one day he knocked down an old lady.

The inevitable lawsuit followed, and the butcher had to pay heavy damages.

Shortly after this the son was the cause of another accident, which had a similar result, and the drain on Simon Cobb's resources brought him to the verge of ruin.

A few days after the second case had been settled, he was sitting in his shop thinking over his hard fate, when a neighbor came rushing in breathless with the information that the butcher's wife had been run over by a motor car and was lying in the hospital.

"Thank goodness!" exclaimed Simon; "my luck's changed at last."—Popular Magazine.

AMERICAN FARMER—"THERE! TAKE THAT INSTEAD OF MY VOTE!"

HONOR ROLL

Of Farm and Fireside's Great Four-Pony Contest.

The following contestants are already prize-winners. They have each won two prizes by getting on the FARM AND FIRESIDE Honor Roll, and their names will be seen and honored by nearly **three million** people. This Honor Roll is complete up to date of going to press, May 10, 1907.

Mrs. S. A. Allen, Iowa
Scotty Auk, Pa.
Bernice D. Andrews, Mass.
Paul H. Aepple, Ohio
Fern Atkins, Pa.
Josie Anderson, Ohio
Glynn Anderson, Okla.
Ruth Anthony, Va.
Holland B. Alexander, Tenn.
Arthur Adcock, Ohio
Robert J. Burns, Ohio
Ormond Blunt, Mo.
Amelia Burns, Ala.
Gertrude Boardman, N. Y.
G. W. Burton, Ark.
Hazel Boyce, N. Y.
Arthur Beard, Kan.
Clarence Bailey, Pa.
Leonard H. Brubaker, Ohio
Gwendolyn Bowles, Mo.
Loree Burwell, Ohio
Violet Brown, Wis.
Louis Branchet, Mont.
Paul F. Beam, Ohio
Junius C. Ballard, Tex.
Ormond Blunt, Mo.
Charlotte Blankenbeker, Ky.
McKim Buckley, Pa.
Leonard M. Beachley, Md.
Ellis W. Burrows, Ohio
Robt. Bremer, Pa.
Harrison Burkett, Pa.
Florence M. Boyer, Pa.
E. W. Burruss, Ark.
Helen M. Beal, Ohio
Alice Brown, Pa.
Henry Blake, Mass.
Lucien W. Bingham, Vt.
Mary A. Buchanan, Va.
Rozella Bughtler, Ohio
Mary Bockes, Iowa
Mrs. F. C. Bradley, Wis.
Harvey J. Brackin, Del.
Wilmer Beck, Pa.
Albert Brant, N. Y.
Everette Biset, Mich.
Mrs. E. A. Chapman, Cal.
Ruth Cotton, Ohio
Hazel Cubberly, N. J.
Ernest Collins, Iowa
Beulah Crane, Kan.
Myra Cassidy, Ohio
Johnson Cannon, Ohio
Mrs. E. Churchill, Ala.
Roy E. Cowgill, Ohio
Frank Calkins, Ore.
John Clark, N. Y.
Fay M. Conley, Ohio
Fern Childress, Mo.
Harold Caldwell, Ohio
Ethel Carpenter, Ill.
G. Woodford Connell, Canada.
Wesley Colby, Iowa
Irene Campbell, Ohio
Herbert A. Campbell, N. Y.
Leonard Coutts, Canada
Paul Clay, Okla.
Thomas Crickman, Ill.
Marie Carothers, Ohio
Lottie L. Crawford, Neb.
Abbie Chambers, Ohio
Mildred Comins, Mass.
Margaret Carter, Mass.
Henry Clausen, Ind.
Archie R. Cook, N. Y.
Mrs. Laura Courter, Ill.
Foster Colgrove, Pa.
Mary E. Cahill, Ill.
Matilda Colston, Va.
Chas. Claus, N. H.
Zita M. Carroll, Mich.
Fay Keneth Cotauch, N. Y.
T. V. Downin, Md.
D. De Young, Ill.
Merriman Dodd, Pa.
Earl Denison, Canada
Mary Douthit, Okla.
Floyd Disterdick, Ohio
Irene Duff, Ala.
Lucy Dudgeon, Neb.
Lucinda Dillavan, Ill.
Bessie Dobson, Wash.
Essie Dillard, Ky.
H. T. Duncan, Pa.
Edna Davis, Ohio
Lou M. Duke, Tenn.
Lester M. Donaldson, Iowa.
Mrs. C. W. Downar, Ohio
Mrs. Snell Davis, Ohio
Thomas V. Downin, Md.
A. S. Dewitt, Pa.
Fidelia Edgar, Cal.
Mattie Eustace, Mo.
Geo. Erickson, Mass.
Grace Evans, Ohio
Ruby L. Emlet, Ohio
Carl H. Egge, N. Y.
Geo. Ericsson, Iowa
Lorena Ernst, Neb.
Mildred Eckenrode, S. Dak.
Donnie D. Euliss, N. Car.
Mrs. J. D. Friedline, Ind.
Oscar Fairey, Ala.
G. W. Fox, Wis.
Glade Fuller, Pa.
Roy Frankenberry, Pa.
Gladys Ferlen, Wis.
Leonard Foreman, Pa.
Grover C. Freeze, Ohio
Marie Finzel, Md.
Harry Giesen, Mich.
Wyneta E. Gibson, Ohio
Weir Goodwin, Jr., Va.
Wm. Gilson, Pa.
Carl Gregg, Ore.
Isabel Graham, Ohio
John S. Gibbs, Ohio
Arthur B. Gill, Va.
Bernice Gilliland, Ohio
Grace Gindice, Mont.
Anna Gilbert, Cal.
J. E. R. Goodman, S. Car.
Rosa E. Gray, Neb.
Rhoda R. Green, Pa.
Arthur Gardner, Iowa
Mrs. I. T. Good, Va.
Hazel Higginbotham, Fla.
Dorothy Hamm, Neb.
Ruth Hartsock, Ohio
Mrs. F. A. Hall, Ohio
Lucy M. Heckard, Ore.
Orrin E. Hill, N. Y.
Kathryn Harrison, Pa.
J. E. Hoffman, Ohio
Lucy M. Heckard, Ore.
Reginald G. Hawley, Vt.
Mabel M. Hannum, Ohio
E. E. Harrison, Ky.
Williard Hipsher, Ohio
Chas. Holden, Ohio
Jesse Hecke, Ill.
Margaret Heavner, W. Va.
Hubert Hull, W. Va.
E. Page Harris, Ala.
Genevieve Haun, Wash.
Marjorie Hiberling, Pa.
Margaret Husted, Ind.
Jessie Hoover, Ohio
Geo. Harris, Mo.
Master Lewis P. Hassel, Pa.
Glenn Hoffman, Mich.
Mrs. W. S. Hart, Ala.
Laura E. Holt, N. Car.
Willie A. Hoogbruin, Mont.
Ethel A. Hathaway, Ohio.
Marie Hugues, Va.
Arthur Ives, N. Y.
Clifford Irving, Canada
Ellsworth Jillson, R. I.
Wallace H. Johnson, Conn.
Beryl Johns, Ark.
Dott Jay, Ill.
Gladys Johnson, Ill.
Bernice Johnson, Ohio
Irene Johnson, Ohio
Johnny L. Johnson, Mo.
Lonetta Jones, La.
Glynn Jordan, Colo.
Angie Johnson, Ohio
Howard Jones, Ohio
Mrs. B. E. Jefferies, Utah.
Florence James, Ill.
Arter Klingensmith, Pa.
Lyall Kingsbury, Ohio
McClellan Kline, Ill.
Milnor Kauffman, Pa.
Leland Kreig, Ohio
Beulah Klein, Okla.
Marguerite King, Ohio
Mrs. N. A. Keene, Mass.
Mabel Kintner, Pa.
Charles W. Kingsley, Mass.
Mrs. Rosa Kannel, Ohio
Russel Kreiter, Ohio
Artie Klingensmith, Pa.
Levi Ray Kellar, Vt.
Leonard Knox, Tex.
Dervey R. London, Ohio
Lucy M. Leishman, Ala.
Howard G. Laidlaw, N. Y.
Ruby Leopold, Neb.
Carey Lackey, Tex.
James W. Lott, S. Car.
Clarence Lee, Pa.
Louise H. Lowe, Conn.
Herman H. Light, Mass.
W. A. Ludwig, Pa.
Harry A. Leeman, Ind.
Frank W. Lynn, Ohio
Julia M. Lyons, Mass.
Muriel J. Leonard, Wis.
Margaret Lawson, Ky.
Renel Lavanway, Mich.
Faunt S. Le Roy, Ind.
Georgie Leonard, Mich.
Glenn H. Long, Pa.
Nora M. Myers, Ind.
Herbert McQuern, Ind.
Carl McMurray, Canada
Harry Merck, Fla.
Ella McClellan, Ky.
Willie F. McKay, Ill.
Ruth Kate Mills, Mich.
Lottie McMichael, Ohio
John Magill, Cal.
Paul C. Martin, Md.
Carrie Mann, Tex.
Arlow G. Marsden, Wis.
Hazel McWilliams, Wis.
H. R. Milligan, Ohio
Francis M. McCartney, Pa.
Chester M. McNeil, Ill.
Anna Mendenhall, Ind.
Henry Miller, Pa.
Russell Maxwell, Pa.
Joseph Moses, Mo.
Floyd M. McCartney, Mo.
Erwin Mayer, Wis.
Ruth Katie Mills, Mich.
D. L. Madray, S. Car.
Ruth Morgan, Ky.
Lettie Martin, Mo.
Edna McQuillen, Iowa
Viola Miller, W. Va.
Mercedes Martindell, Ohio
Merle Mayfield, W. Va.
Ida A. Munson, Wis.
Stanford Miller, N. Y.
Ella Matthews, Mont.
Lourine Moore, Tenn.
Pearl McFarland, Iowa
Eddie Michaels, Ohio
Randolph Metzler, Pa.
E. A. McNight, Ind.
Jay A. Melious, N. Y.
F. Ray McKenzie, Pa.
J. E. Murphy, R. I.
Wiley Martin, Ky.
Earl Martin, Iowa
Mary Martin, Mo.
Susie Meyer, Canada
Elizabeth Meacham, N. Mex.
Jno. B. Mastoff, Wis.
Ruby Moose, N. Car.
Ellen Norene, Ky.
Ernest Newman, Ind.
Ruth Niles, Pa.
Worthy Nash, Mass.
Allen Neal, Colo.
Williard L. Neese, Ohio
Agnes Neuscheter, Ohio
Mrs. J. C. Oestergard, Cal.
J. B. O'Bryan, Ind.
F. V. Ogden, Va.
Mark Osborne, N. Y.
Leonard Owen, Mo.
Jesse W. Oren, Va.
Leonard Owings, S. Car.
Lucy Pratt, Mass.
Mrs. Roman Pickens, W. Va.
David Barr Peat, Pa.
Odell Piersol, Ohio
Mabel Patrick, Ohio
James B. Parks, Pa.
Ara C. Potter, N. Y.
Lawrence D. Pelton, Wis.
Gladys Payton, Kan.
Virginia C. Patterson, N. Car.
Samuel H. Page, N. J.
Crissie Powers, Conn.
Helen Pressly, Pa.
Wm. T. Pearson, Va.
Edward F. Poss, Ohio
Waldo E. Pletcher, Ohio
Archie Parmely, Iowa
Hazel Quintmyre, Iowa
Charley Ross, Mont.
Earl Robinson, La.
Wm. M. Reichenbach, Pa.
Maytie Rowe, Pa.
Fay W. Rohrer, Ohio
E. K. Renck, Cal.
DeMerville Robords, N. Y.
Henry Reinke, N. Y.
Daisy Reed, Wash.
Christine Reaves, I. T.
Mrs. Jeanette Reehling, Ohio
Eugene G. Ryan, Ky.
Myrtle Rogers, Tex.
Harold Roes, Maine
Hazel Ridlen, Mo.
Minnie M. Reehling, Ohio
Hazel Rea, Ohio
Stanley Roberts, Pa.
Mabel Rowland, Mass.
Raymond P. Ream, Pa.
Margaret Reehling, Ohio
C. L. Rowland, Va.
Charlotte Rogers, Pa.
Ruth Mary Sala, Neb.
Earl G. Spurch, Ohio
Rodney Sutherland, Utah
J. W. Shirley, Neb.
Florence Seymour, Ohio
Cecil Stauder, Ohio
Arthur Smith, Pa.
Glenn W. Strenick, Ohio
Clarence Shobe, W. Va.
Kitty Shepherd, Cal.
K. B. Saunders, Va.
Essie J. Seal, S. Car.
Helen Scarborough, Ohio
Mrs. S. R. Smith, Va.
Mrs. H. B. Sizer, Va.
John Sims, Ark.
Floyd Sheley, Mo.
Maud Stewart, Ohio
Neil Scoles, Iowa
Hester Sexton, Ill.
Ed Stoker, Tex.
Elizabeth Shumate, Va.
Alta Simpson, Neb.
Harold R. Savage, R. I.
Laura B. Snyder, Pa.
Oliver L. Smith, Ohio
Henry Schladenski, Wis.
Freddie Scherbacher, Neb.
Helen Siegfried, Ohio
Ralph Smith, Tex.
Howard Shout, Ohio
Mrs. P. V. Savage, Ohio
Ray Sherrill, Neb.
Joy Smock, Iowa
Mabel Spangler, Ill.
Will L. Snedeker, W. Va.
Omar G. Shaffer, Pa.
Paul Spencer, Iowa
Edgar Sanders, W. Va.
Julia Spautin, Ky.
Ruth Sarver, Pa.
Hannah Scott, Ohio
Martin Sander, Ohio
Frank Streipert, N. Y.
Lela Shambaugh, Ga.
J. P. Tribbett, Va.
Ada Trosper, Neb.
Ray Thatcher, N. Y.
Floyd P. Tucker, Ill.
C. D. Townsend, N. Y.
Marie Temple, S. Car.
Glenn Tompkins, Ohio
Geo. Taylor, Ohio
Annie Tandy, Ky.
Georgia A. Turrill, Kan.
Lula Tennant, N. Y.
Lola Thacker, Ohio
Rudolph Thesen, Ill.
Lowell Troyer, Ohio
S. S. Turner, Ill.
Marie Temple, S. Car.
Olney Thompson, Ohio
Harold B. Thompson, N. Y.
Roy W. Utz, Mo.
Helen Van Lehu, Ohio
Julia Violet, Ohio
Percy H. Wigg, Canada
Ernest W. White, Vt.
Lillian Wickens, Ohio
Cora Mae Wallace, Ohio
Verna Wright, Iowa
Ernest R. Wintermute, Ohio
Milton Walpole, Ohio
Robert S. Withrow, Pa.
Grace Wellman, Wis.
Edna M. Wilson, Pa.
Lilly Waldeck, Neb.
Amy Webber, S. Dak.
Bernice Walbridge, Neb.
Mrs. J. E. Weaver, Ohio
Pauline W. Walker, Ohio
Chas. E. Wilbee, Mich.
Donald E. Weaver, Ohio
Maud Ward, Wis.
Ida Wegener, Pa.
Fred White, Pa.
Ralph Bonnell Walker, Ind.
Mrs. W. L. Wise, Pa.
Ethel Wood, N. Y.
Ethel Woods, N. Car.
Edna Walker, Ohio
Loree Winslow, Va.
Pearl Wickwire, Iowa
Phebe Woodson, Va.
Neath Wilson, Ohio
Wm. Arthur Woods, Neb.
Lucile Welch, Kan.
Ralph Boswell Walters, Ind.
Dora Young, Ind.
Mabel Young, Cal.

NOW IS YOUR LAST CHANCE

to get your name on the FARM AND FIRESIDE Honor Roll. The Great Four-Pony Contest closes May 31, 1907. A few days still remain for you to win **two prizes** and **perhaps a pony.** If you get your name on the Honor Roll before June 1st, we will print it in the June 25th FARM AND FIRESIDE and send you your prizes immediately Don't let this chance—your last chance—go by.

"GET IN THE SADDLE!"

The Grange

BY MRS. MARY E. LEE

CAMPAIGN CONTRIBUTIONS

THE exposures made concerning campaign contributions show the source of much of the corruption in public life. "We pay the fiddler and should choose the music," say the great corporations. There is something ridiculous in our partizanship when we complain at extortions practised by those who maintain the existence of the parties. They buy up brass bands, eloquent speakers and newspapers, and keep alive the partizan spirit that would die were it not for these fireworks. They celebrate victories of the party as a victory of a nation, and the voters in the prevailing party lean back and feel their country is saved for another year, and only rouse themselves to grumble at abuses foisted on them by these same campaign contributors.

Were these contributions given for patriotic purposes instead of to inflame prejudices and partizanship, and, under cover of these, practise all sorts of devices to extract hard-earned earnings from the people, they would have been given to our common schools, the foundation of all patriotism; to the establishment of schools, where all could study public questions in their ethical and economic applications, and not in the light of special profit to the contributors; to our churches, that men and women who have the ability to sway humanity might lead the religious instinct into channels of helpfulness, into roads over which a happy and prosperous people might travel in search of happiness and prosperity; to practical improvements, that would enable tired bodies to find rest and time to enjoy the beauties a beneficent Nature has bestowed in such abundance.

There is very little difference in the vote bought directly with money and that bought indirectly through inciting the prejudices, inflaming the passions and arousing the partizanship of people. The result is the same. If the present disclosures will lead a step toward the discussion and consideration of public questions from their economic and ethical standpoints, it will be a great thing for the public. Drastic laws are not so much needed as intelligent and honorable public sentiment.

CO-OPERATIVE ENTERPRISES AMONG KANSAS PATRONS

We are operating some very successful co-operative enterprises in our state. One of the best known is the Johnson Company Co-operative Association, located at Olathe, Kansas. It was organized in 1876 with a paid up capital of $800 and sixty members. We now have a paid up capital of $100,000, a surplus fund of $25,000 and nearly one thousand members. The holdings of stock are limited to $1,000, and each stockholder has one vote. In 1903 the building which this company owned and its entire stock of goods was burned. It was a general department store carrying a large stock and assortment of goods. The Kansas "Patron," the Grange paper for Kansas, was entirely destroyed, and has not been replaced. The disastrous fire occurred Saturday night. The stockholders met Sunday morning and decided to rent rooms and carry on business until another building could be erected. Tuesday morning the association opened up business in rented rooms.

We erected a new building on the old foundation, which is up to date in every particular. Since that time we have accumulated a surplus of $25,000 in addition to the capital stock of $100,000. We have no outstanding debts.

We invoice and make a settlement every three months. Each quarter's business since 1876 shows a gradual increase.

We also have four branch stores in the county, each carrying about $10,000 stock of goods. We own all our buildings. Our total sales since being in business have been $6,599,878.97; gross profits, $906,574.18; dividends paid to stockholders, $535,194.18.

I had the honor of obtaining the charter for the association and have been one of its directors and its secretary for thirty years.

Another enterprise that is successful is the Patrons Co-operative Bank, organized under the banking laws of Kansas in 1883. Its holding of stock is limited to $1,000, and each stockholder casts one vote. Its capital is $50,000 and its surplus fund $50,000. It had been paying a semi-annual dividend of five per cent ever since its organization until January 1, 1907, when it declared a dividend of ten per cent. The bank inspectors pronounce it the safest and best conducted bank in the state.

I had the honor of procuring the charter for this bank and have been its secretary since its organization twenty-three years ago.

Our latest enterprise is the Patrons Fire and Tornado Insurance Association, of which J. D. Hibner, a Past Master of Kansas State Grange and one of the executive committee, is secretary. Its total risks are $4,967,340. The increase in risks during 1906 was $1,017,940. The average cost on the risk to the policyholder has been $5.86 for each five years per thousand dollars. There has been no assessment for nine years.

The Grange has another very successful co-operative store at Spring Hill, under the able management of Mr. Ed. Blair. It has been in operation about twenty-five years. Another is located at New Lancaster, in Miami County, under the management of Mr. Lemen. It is doing well, but is not so old as the other stores. Another very successful store is located at Cadmus, Linn County, managed by Mr. McIntyre, which has been running for nearly a quarter of a century.

I have given you the outline of the work we are doing in a business way in Kansas. We feel proud of what we have done and want to do more.

Fraternally yours,
GEO. D. BLACK,
Master Kansas State Grange.

THE OBSERVATORY

There is as much need of attention to the expenditure of funds as to the collection. Tax payers alone are not to blame because of the large class who vote, but pay no taxes. Yet if those who pay the bills would examine them closer, insist on a strict accounting for every dollar collected and spent, have this published and accessible to all, the weak points could soon be found and remedied.

We are all groaning under the burden of taxation, yet the trouble lies not so much in the amount needed to carry on the governmental projects as we now have them, but in paying many times over for what we receive. It is safe to say that not ten per cent of the public business has been transacted with the economy and wisdom given to private enterprises. Yet private enterprise must bear its own burden and that of the public also.

When this issue reaches our readers there will be in the hands of every Lecturer of the state a pamphlet, "Something for Tax Payers to Think About," which the executive committee ordered sent out. It is the report of the addresses on taxation at the State Chamber of Commerce. Read what our friends in other callings have to say about the subject of taxation. The other pamphlet sent contains the addresses of State Master Derthick on "Taxation" before the Ohio School Improvement Federation, and the address of Supt. S. K. Mardis.

Extra copies of these pamphlets may be secured by addressing Allen R. Foote, Columbus, Ohio, for the former, and F. A. Derthick, Mantua, Ohio, for the latter.

A. owned a farm worth five thousand dollars, on which he paid a two-per-cent tax on sixty per cent of its value, or sixty dollars. He sold the farm for five thousand dollars, and paid tax, at the uniform rate, two per cent, or one hundred dollars. Those favoring the elimination of the uniform rate and the substitution therefor of a flexible rate say it is unfair to tax a man on forty to sixty per cent of his property when in land and on one hundred per cent when in money or intangible property, and that such unfair conditions have led men to conceal intangible property; and that by concealing it a heavier burden has been placed on tangible property. They maintain that if a reasonable rate were placed on intangible property it would be returned for taxation because of the security given. Think it over, brothers and sisters, and discuss it in your Grange. Get the standpoint of justice to all, not prejudice, and a solution will be found.

WHAT THE LAST CONGRESS DID FOR AGRICULTURE

THE Agricultural Appropriation Bill usually receives more attention in Congress than that for any other executive department, although such attention is not warranted by the amount of money involved. The greatly increased interest in agriculture in a national sense and in the department's work has grown out of an increased realization of the importance of agriculture as a great basic industry, largely contributory to wealth, production, commerce and other industries, and touching the interests and prosperity of the country and the people as a whole. At any rate, such is the opinion of Mr. A. C. True, editor of the "Experiment Station Record." In an editorial summing up the results and significance of the work done by the last Congress for the development of American agriculture, Mr. True highly approves the federal meat inspection law, the increased oversight of forest and grazing lands by the national government, the increase in appropriation and the general increase in department salaries at Washington. Speaking of the increase in the appropriation for colleges of agriculture and mechanic arts, Mr. True says:

"This reaffirms the policy of the general government to favor and develop these land-grant institutions, legislation for which has now extended over a period of forty-five years. The act of 1862 donated to the states and territories lands from which over $12,000,000 has been realized as a permanent endowment, with over $4,000,000 worth still unsold. The supplementary act of 1890 has given them $1,200,000 annually for more than a decade past; and the present act, known as the Nelson act, increases the amount to each state $5,000 a year for five years, when the appropriation will be double that at present, and will be continued permanently at that rate. The appropriation was carried through on the merits of agriculture. The law itself mentions the agricultural work prominently, and the discussion in Congress hinged almost exclusively on the value and growing importance of agricultural education, and the needs of developing that phase of our educational system. These needs in connection with our colleges are very acute, as every one will admit who is familiar with the relatively meager equipment in men and materials for instruction in that branch. Now that the methods of instruction have been worked out on a broader and more efficient basis, and the desire for instruction in agriculture is more widespread, it is fair to expect that the land-grant colleges the country over will recognize the opportunity presented by this new appropriation to develop and strengthen agricultural education."

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GOOD SEED AND GOOD SOIL

Good seed is vastly important in the production of any crop. We have come thoroughly to appreciate this fact. It has paid us handsomely to take time and special pains in selecting and testing seed corn. It has profited us to grade and clean our oats and wheat by running the seed through a fanning mill. Experience has taught that we cannot be too fastidious about the quality of the seed we plant. But we have also come to know that good soil is equally important. In fact, I am personally disposed to accord the soil first place in the list of fundamental factors in crop production.

Three years ago we accepted the teachings of the agricultural college men as to seed-corn selection. We picked it according to their directions, kept it in an attic during the winter and tested each ear in March and April. Six kernels were taken from different sections of each ear and placed in a home-made germinator. Each ear had a number assigned to it. All the seed ears were placed in rows upon a large table, and with a piece of chalk we made a number on the table at the butt end of each ear. For example, in one row there were forty ears, numbered from 1 to 40. We made a germinator in which we could test kernels from two hundred ears. A piece of cloth was marked off into one-and-one-half-inch squares; the lines were made with an indelible pencil. Each square was numbered, beginning with 1 in the upper left-hand corner and running to 200 in the lower right-hand corner. From ear No. 1 six kernels were placed in square No. 1, and so on. If any of these kernels showed weak sprouts or failed to produce sprouts the ear from which they were taken was discarded as seed. We insisted that every kernel produce a strong sprout in order to warrant the use of the ear for seed. Having made the germinator and gone to all this work, we felt that we could be extremely particular. As a result we did not plant a single ear of inferior germinating power. It is surprising, however, how many we had to discard. Ears that looked sound and would pass as merchantable in many cases failed absolutely to come up to the requirements. We were surprised at this, because we had always supposed that any practical corn grower could tell with considerable certainty from a mere physical examination of an ear whether it would grow. This is a delusion. An ear does not reveal its weakness or strength to the eye; but put it in the soil and it will make a confession.

For three years we have made it a rule to test each ear of seed corn. We have had a better stand each season than we usually had before we did this work, although I cannot say that the improvement has been sufficiently marked to pay us more than fifty cents a day for the time we have devoted to seed testing. We have derived the increased profits, however, in larger yields an acre. I figure that five sixths of a stand from carefully selected improved seed will yield more corn to the acre than a perfect stand from ordinary nondescript corn. My experience has taught me that a perfect result in the germinator does not mean a similar outcome in the field. The conditions in a germinator and in a corn field are different; kernels may produce vigorous sprouts in the former and fail entirely in the field. We cannot say, therefore, that we shall have a perfect stand simply because we have planted seed whose germinating power has proved perfect. Nevertheless, the chances are materially improved if we use first-class seed of the highest germinating strength.

Good seed must have a good home if maximum crops are to be produced. Hitherto we have allowed the seed question to overshadow the soil question. So insistent and persistent has been the preaching and harping about good seed that hundreds of farmers have neglected their soil. Gradually they are learning that they have been putting the cart before the horse in this matter; results would have been more satisfactory if soil improvement had preceded seed improvement. I hold that ordinary seed in fertile, well-prepared soil will produce a larger crop than highly bred tested seed in average soil. In other words, taking it one year with another and averaging the conditions in different agricultural communities, better results are obtained from good soil than from good seed. It is a comparatively simple matter to solve the seed problem; it is quite different as respects the soil. However, soil improvement can be accomplished by any intelligent farmer, and if we go about the work in the right way marked results can be secured in a few years. In the grain-growing sections of the country there are very few farms that have not been badly worn; many of them, in fact, have been cropped so heavily that they no longer yield profitable crops. Farmers have naturally been disappointed at the results derived from expensive seed on such farms. Good seed has, in fact, received a "black eye" because it has not "made good" in this poor soil.

It is now apparent to many of us in the Mississippi Valley that we have got to turn our attention to soil improvement. We have sapped this fat soil until it is ridiculing us with increasingly light crops. We have robbed it of phosphorus and nitrogen until it rebels; we have exhausted so much of its humus that it is quite impossible to work up a satisfactory seed bed. There are farms in Illinois that have grown corn and oats in succession for more than fifty years. Although these farms are still faithful in their performances, yielding fairly good crops, they are doing far less than they should do for their owners. Not many of them are averaging thirty bushels of corn an acre. They should regularly exceed that output by at least thirty bushels. Good seed can make these lands do but little better than they are now doing. Neither can improved methods of cultivation materially increase the net result. It is a more vital flaw that must be corrected before they can be expected to produce the yields that progressive farmers should demand.

Most of our soils are deficient in one or more of the elements of plant food; phosphorus probably is the one most commonly and most largely wanting. Nitrogen also is inadequate in many soils for the proper feeding of agricultural crops. Experiments show that potassium is present in sufficient amount for maximum crops except in peaty or swamp soils. In Illinois and Indiana soils of this character were absolutely barren until potassium was applied. Applications of this element increased yields from less than a bushel of corn an acre to sixty and even eighty-five bushels an acre. Very few farmers ever will need to purchase potassium, and none need ever buy nitrogen, as it can be obtained from the atmosphere simply by growing clover, alfalfa or cow peas. There are other legume crops that will secure this element, but those named are the most cosmopolitan. Some of them can be grown in almost every farming section. In growing such crops the farmer enjoys a two-fold return: he enriches his soil, and secures valuable pasture, hay or seed. Legume crops, through the micro-organisms that inhabit the nodules, tubercles or "knots" on their roots, derive nitrogen from the air and fix it in the soil. So long as we can grow clover, alfalfa or some other legume we shall never have to purchase nitrogen. We have in recent years experienced some difficulty in securing a stand of red clover, and our success with alfalfa has been only partial, but we believe we are on the way to a solution of the problem. Our soils have become acid, as the litmus-paper test has shown, and we are planning to apply lime.

We cannot obtain phosphorus from the air, as the air does not contain phosphorus, and we cannot get it from the subsoil in sufficient amounts and with requisite rapidity; this element must be purchased in some form, either bone meal or rock phosphate, and applied. Corn-belt farmers have begun to make large use of this fertilizer, having been convinced by the experimental work done in Illinois by Dr. C. G. Hopkins of the University of Illinois that its use would pay them. Live-stock farmers of course will be slow to accept the doctrine that they will ever need to buy fertilizers of any sort. They have been told by animal-husbandry men that if the crops, especially the grain grown on the farm are returned to the land through live stock practically no plant food is removed, and hence the fertility of the soil can be maintained indefinitely. This is not true; even if every grain or bit of forage grown on the farm were fed back to it through animals, in time the soil would be deficient in phosphorus, from the fact that the element phosphorus is used quite largely in the building of bone and tissue, especially in young stock. Only a small percentage of the phosphorus taken in their food is given back to the land in their droppings. Live-stock farming therefore does not safeguard the farmer against soil depletion—that is, as respects phosphorus.

DEWITT C. WING.

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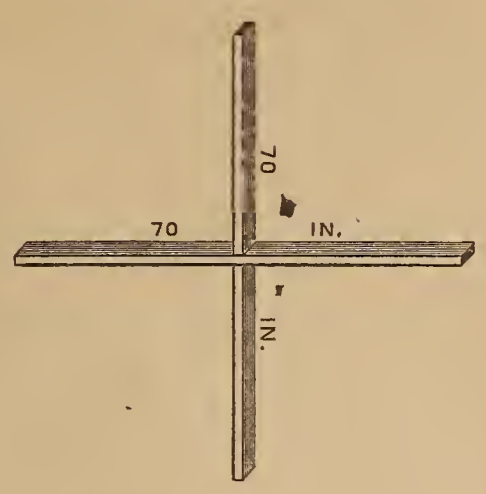
A SIMPLE LAND MEASURE

The farmer often wishes to know the distance from one point to another on his farm. It may be that he wishes to build a new fence or replace an old one. He may wish to know the distance from



a spring of water to his house or barn. Here is an easily constructed and useful measure:

Take two boards or round sticks seventy inches long, and fasten them firmly together at the center.

When this is rolled over the ground like a wheel, each revolution measures one rod.

JOHN UPTON.

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WATER GATES

Many of our farmers experience great trouble in keeping fences and water gates across the little streams or brooks on their land. One of the best gates that can be constructed over such places is built in the following manner:

Set a good locust post on each side of the branch, just opposite each other. Then take common rails, and build them across the stream in the style of the rail fence—two panel, or length, is all that would be necessary for any ordinary stream—and wire the ends to the post on each bank by boring holes in each rail.

When the water gets high it will spread the rails apart in the middle of the stream, but the ends being firmly secured, the rails cannot float away, and in a few seconds can be laid up again.

L. C. SUFFRON.

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SPUD FOR POST HOLES

One of my handiest tools for post holes, etc., is a carpenter's smoothing chisel three and one half inches wide mounted on a six-and-one-half-foot handle. For use in gravel, shale or roots it is excellent, or in cutting through frost. With the chisel on one end and the other end squared off, it will also make a good tamping stick. This spud cost me eighty cents and about fifteen minutes' work to make.

W. B. ELLSWORTH.

BEETS FOR STOCK

J. B., of Sumner, Illinois, wants to raise both sugar beets and mangels for stock this year, but knows nothing of their culture. Whether to sow in rows or transplant them is one of his questions, and when to sow the seed another.

Not having a silo, I find beets indispensable. I always raise a good lot—in fact, all I have room for in my vegetable cellar—and I feed them liberally all winter to fowls, pigs and cattle, and always with great satisfaction. But I seldom raise sugar beets, as I can raise three or four times the bulk when I sow such stock beets as Yellow Globe, Yellow Tankard, Gatepost or Jumbo, or any other of those very large mangels, and do it with as much ease.

I select a rich and clean piece of ground, such as would produce a good yield of corn, but free from stones, rubbish, etc., plow and harrow this thoroughly, possibly applying a dressing broadcast, of fertilizer (acid phosphate and potash, or perhaps bone meal in place of the former) after plowing, or just before sowing. The surface should be made smooth and fine.

Then I mark off rows with an ordinary corn marker, say two and three quarters or three feet apart, preferably using one with rather flat teeth, so as to make wide and shallow marks.

I then sow the seed, say four pounds to the acre, with the garden drill, letting it run in the marks and taking pains to have the seed covered well. For safety's sake I may go again over the patch with hoe or rake, so as to cover the spots where the drill left the seeds uncovered. Sometimes, when the surface happens to be a little lumpy, such extra attention with hoe or rake may be needed for short sections here and there all over the patch.

Usually I mix a few radish seeds with the beet seed. They come up quick and soon show the rows, so that we can run the hand wheel hoe close to the rows, on each side, even before the young beet plants have broken ground. Late in May or June 1st is about the right time for sowing the seed.

An occasional application of nitrate of soda, say seventy-five pounds to the acre two or three times during the earlier stages of growth, usually has a very striking effect on beets, producing a remarkably thrifty growth.

The next tool to use is a spike-tooth cultivator. In short, the spaces must be kept loose and free from weeds. The plants in the rows also must be kept free from weeds, by hand and thinned to eight or twelve inches apart. That is about all.

I usually harvest this crop late in October. The beets are hauled to the place of storage, and the tops cut or twisted off before the beets go into the root cellar.

My pigs have had a daily mess of these roots all winter; so had the fowls. For small pigs and fowls the beets were cut up on a hand feed cutter with corrugated blades, cutting them in strings, and mixed with meals, bran, etc. The pigs have done remarkably well, and the hens also have eaten quantities of this "green" feed.

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THE LATEST ABOUT WATER GLASS

A reader in Santa Cruz, California, writes that in April of last year he put thirteen dozen eggs in a water-glass solution—one part to eleven parts of water—and used the last of the eggs in February of this year. These were as good as the first used, and all as good as newly laid. The vessel with the eggs, a stone jar, was kept in a cool room. I have had many more reports telling me of the successful preservation of fresh eggs by the same method.

One of our experiment stations (Washington) has recently made some comparative tests, and reports the results in bulletin No. 71 of that station. It was found that the eggs keep in better condition in a ten-per-cent than in a five-per-cent solution, but that the stronger solution is likely to be weakened by coagulation of the water-glass. A middle course is therefore suggested as likely to give the best results. Instead of making the solution one to ten parts of water, or one to twenty parts of water, we may make it one to fifteen, in the expectation to have the eggs keep in first-class condition, and this at less expense than by using the older, stronger formula.

It is estimated that a pound of water glass properly diluted will cover twelve to fifteen dozen eggs. If bought in larger quantity, the cost of the preservation would be less than a cent per dozen eggs. It was also found (an experience reported from a number of others, too) that eggs will keep quite well for some time, at least up to four weeks, after being taken out of the water glass.

T. GREINER.

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There are states in the Union whose entire population is far smaller than the FARM AND FIRESIDE family. Did you ever think of that?

HOW EUROPE PRESERVES ITS ROADS

We Americans have a great deal to learn from Europe as to the making and preservation of roads. On the older continent there is a constant solicitude for the public highways, which would perhaps surprise most Americans. In England, for example, the country roads are cared for by the county council of each shire, an elective body numbering about fifty. Our consul at Nottingham, Rev. F. W. Mahin, says of the care exercised by these bodies:

"The official in immediate charge is the county surveyor, an appointive officer, who serves during efficiency, and is an expert engineer. All the roads are macadamized, or similarly treated, and for ordinary traffic are very satisfactory. In recent years automobiles and heavy traction engines and motor wagons have created new and serious problems. Automobiles not only cause stifling clouds of dust, but loosen the macadam by suction, while heavy engines and motor wagons crush and destroy the surface smoothness of the roads. The result has been to heavily increase the expense of road maintenance and to exercise the ingenuity of county surveyors in devising means of suppressing dust and constructing roads suited to present traffic conditions.

"The Nottingham County surveyor, after experimenting for many years, has apparently solved the problems of both dust and durability. Ten years ago he tried tar washing, a process now much talked about for roads, but found it only a temporary palliative. The tar was chiefly absorbed by the joints of the paving, and only partially adhered to the material, and after a few months a dust resulted which he considered worse than ordinary soil dust. He next tried tarring slag, granite and limestone by the roadside, but the heating of the material to a point necessary to make the tar adhere made it brittle and not suitable for heavy traffic, and the process was, besides, very slow and a public nuisance. He then removed his apparatus to an iron foundry and tried hot slag taken from the furnace, the first attempt of the kind. The experiment worked to a charm, and with the mixture of a toughening adjunct a waterproof road material was created. He has patented the process. Not only is the former work of heating dispensed with, but the material is not brittle, and being uniformly hot to the center it sucks in the tar. The process of artificial heating leaves the center of the material relatively cold, and the reverse effect ensues, the tar being in a degree rejected. The preparation is styled 'tarmac.' It is applied to a road without any digging or grading beyond mere leveling. Two layers are used, the lower two and one fourth and the upper one and one fourth inches thick. Steam rolling reduces the thickness to three inches. A five-mile section of road between Nottingham and Radcliffe was used to test the preparation. It lies near the Trent River and a canal, is below the level of both and has a gravel bed. Consequently, water could seep through upon it. It was a notoriously bad road, dusty in dry weather and almost impassably muddy in wet; at the same time, one of the most important and most used roads in the county. It therefore offered a supreme test to the efficacy of a road-paving material. This stretch of road is now one of the finest in England. It is smooth as asphalt; mudless in wet weather; in dry weather dustless with ordinary traffic and nearly so with the swift passage of automobiles. A dry road absolutely dustless when traversed by automobiles is an utter impossibility. The 'tarmac' road is impervious. Surface water flows to the sides, and no dust is possible, except what is dropped or blown upon it."

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LEAVES FROM A FARMER'S NOTE BOOK

Something may be gained in the weight of grass by letting it stand till it is fully ripe. Then no doubt the stalks are heavier than if cut earlier in the season. But what we gain in one way we surely lose in another; and that is in the goodness of the grass. There is not much nutrition in a stalk of fully ripe hay. Chew it for yourself and see. Then compare a stalk of grass cut when the first bloom is on the head. See how sweet and full of juice that is, and then make your plans to cut your grass early. All that you gain in weight you lose in substance. The cattle will eat and enjoy the early-cut grass much better than they will the later-cut hay. They will give more milk on the greener-cut grass and it will be of a better quality. At the same time the cows will keep in better flesh than they will on dry, ripe hay. There is only one thing that will warrant us in cutting grass late, and that is where we sell it on the market. There is no doubt that we may cut more hay from a given number of acres by letting the grass stand till well matured; but the man who buys must suffer for it, after all, and is that just the right thing to do?

We are having a sharp tussle with some quack grass that has somehow or other gotten into our corn field. Queer where that stuff comes from. You think your fields are free from it, and then all of a sudden there it is, and it is there in full force, too. If there is anything that we dread more than another in the line of farm pests it is quack grass. The seven-year itch is nothing compared with it. Wild carrot you can kill by mowing a couple of years or by pulling a few times. Daisies are good for something as hay; cattle and even horses eat them fairly well, although I must admit that I would a great deal rather feed my cattle good timothy or clover hay. But quack grass—well, that is a sticker and no mistake. We have just about been down on our knees before the stuff. We have been hoeing the field, or the part of the field where it has come in, by hand, digging every single root up and carrying it away. We have in this way raked the earth over with our fingers. They are just about worn down to the quick, and it does seem as if we must have gained something of a start on the stuff. Simply plowing and harrowing it will not do a particle of good. The roots will stay in the soil and take hold wherever they may happen to be. We have not been successful in smothering it with buckwheat or any other crop. If anything will kill it, it must be this kind of thorough culture.

Speaking about buckwheat a moment ago made me think that there is a crop that we might well sow more of. There is money in it. This past season it has sold at one dollar and thirty cents a hundred with us quick. The mill men cannot get enough of it. I know there are those that call buckwheat an uncertain crop; and it is a fact that some years it will blast and give us back little besides chaff. Besides that, it makes heavy drafts on the soil. Nevertheless, if properly put in and cared for it is a good crop. A good many make mistakes in thinking that buckwheat does not need much, if anything, in the line of fertilizer, just sow it and let it do as it will; and I have known men not to use a thing in the line of manure, just trusting to the fertility that may happen to be in the earth. But it will pay well to manure the land to be sowed to buckwheat. No crop responds more readily to the stimulus of fertilizer than buckwheat. And then, the time of sowing is important. Every one must determine that for himself, according to his latitude and longitude. The main thing is to get it in so that it will not be heading out just when the sun shines hottest. That is what blasts buckwheat. If it can be sowed a little early or a bit later than these hot, muggy days and nights, we may be reasonably sure of a good crop. With us, in southern central New York, these days come along in August. If buckwheat is setting then, it is likely to blast. I know of one man in this section that sows his buckwheat about the same time he does his oats—that is, along in April. He tells me he always has a good crop. There is something in this worth trying. Surely buckwheat is getting to be a great crop in this country. Think of the stacks of cakes eaten all over the land every winter! A young fellow that went out into a rural neighborhood to teach school said after he went back in the spring that he had eaten three million pancakes that term. I have no doubt he enjoyed them, too.

Edgar L. Vincent.

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PITHY PARAGRAPHS

Watch your neighbor, and if he is doing well, imitate him. But rather, make it worth while for your neighbor to imitate you.

If you are located on a rural free delivery you owe it to Uncle Sam to increase your mail a little. Subscribe for more papers and magazines, and write more letters.

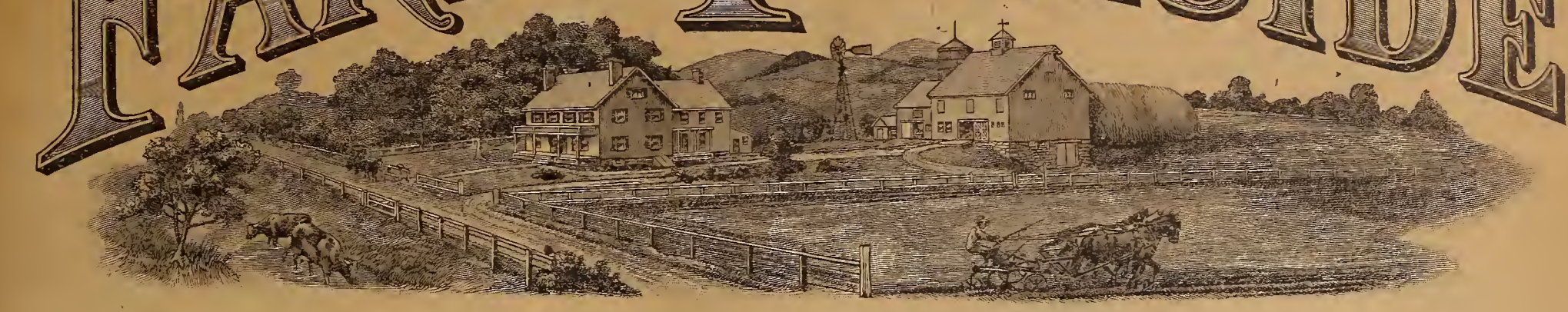
In a few days begin whitewashing the fences and smaller buildings—and paint the house if it needs paint. You have perhaps put it off long enough. Now is the time to put it on.

Before going to town or calling on a neighbor, shine your shoes, brush your teeth, clean your finger nails, and surround the four corners of your mouth with a broad smile. Everybody will be glad to see you, and hear you as well.

All Nature is joining hands these days in an effort to make man happy—the trees are putting on their best spring dress, the birds are singing their latest and sweetest popular songs, and the sun smiles and laughs from the time it rises with a bounce to the time it reluctantly hides its face in the west. The man who isn't happy under such surroundings is out of harmony with the world, somehow.

W. J. B.

FARM AND FIRESIDE



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The Spraying of Fruit Trees

By Prof. C. S. Wilson, Instructor in Horticulture, Cornell University

THE spraying of fruit trees is one of the most important problems confronting the fruit grower of this country at the present time. In the last ten years great advances have been made in spraying operations. The next ten years is destined to record a change equally important.

It is true that the fruit grower to-day is surrounded by a cloud of doubt. He hardly knows which way to turn. The insect pests and fungous diseases are becoming more numerous and destructive, thus subjecting crops to greater dangers. The grower feels that he must spray harder if he protects his orchard. And yet, on the other hand, considerable injury to foliage has followed the application of certain sprays. In some orchards more injury has resulted from spraying than from the insect pests and fungous diseases. The fruit grower vacillates. On the one hand he fears the orchard enemies, yet he trembles to spray on account of the injury which may result. What is he to do? How will the problem solve itself?

In the first place let me explain the injury resulting to the foliage from the spray. It is known that Bordeaux mixture when applied to certain fruits burns the foliage. This is probably caused by the copper sulphate, and is greater in some years than others, due possibly to the different climatic conditions. Moreover, the injury is more noticeable on some fruits than others. The apple suffers badly, as is also the case with the plum. The injury is less noticeable on the pear and quince. Again, certain varieties of these fruits are more susceptible. In the case of the apple, for example, the Northern Spy, Canada Red, Alexander and Esopus Spitzenberg are injured but little, whereas the Baldwin, Greening, Twenty-Ounce and Wagener are badly injured.

The injury has been more noticeable in recent years than formerly. This is due chiefly to the fact that now we have more efficient machinery than formerly, and therefore put on much more material.

This spray injury is a serious matter, but the orchard diseases are infinitely worse, and therefore we cannot afford to give up the use of Bordeaux as a means of protecting our orchards against these diseases. Moreover, we can lessen the amount of spray injury materially by using weaker and properly mixed solutions. Although it is probable that in some years Bordeaux as weak as 1-1-50 will cause slight spray injury, stronger solutions than this can safely be used. From the results of careful experiments carried out by the Geneva Experiment Station, it is believed that Bordeaux of the strength 3-3-50 is adapted to the apple. This will produce but slight injury and at the same time hold scab in check. It is safe for the apple growers to use Bordeaux of this strength.

On the other hand, the insect pests and fungous diseases are becoming more numerous and serious, and the fruit grower must fight harder and harder to control them. The apple scab is still destructive in the apple-growing regions. The codling moth gives the grower no peace. The San Jose scale is threatening the orchards everywhere. The black rot is destroying entire crops of the grape, and the vineyardists are at the point of despair. I might mention other pests which damage the fruit crops to the extent of thousands of dollars yearly.

All these conditions combine to make the fruit growers tremble. They hesitate to spray, thinking that the good done will not pay for the trouble, or, in order to ease their conscience, they spray in a half-thorough manner. They believe this ought not to produce much damage and may do some good. Nothing could be a greater mistake. Spraying is one of those operations which if effective commercially must be done thoroughly. I believe the greater per cent of failures in spraying is due to the lack of thoroughness. Practical growers do not realize what "thoroughness" means. They themselves fail in thorough application, yet attribute the failure entirely to the spray, and discard it as being of no value. If the reader is impressed with no other thought than "be thorough," this article has fulfilled its mission.

What does thoroughness mean? To answer this question let me refer to the nature of diseases and insects. The spores of a fungous disease may germinate on any portion of the fruit, foliage or branches. Some, of course, develop on only one of these, according to the nature of the fungus. In order to have the fruit, foliage or branches completely protected, it is evident, then, that these parts must be entirely covered with the spray mixture. Any portion exposed is subject to the attack of the disease. The same is true of the insects. They may eat the fruit or the foliage, or suck the sap from the branches of the trees. Any exposed portion is subject to attack. Thoroughness, then, means application of the mixture in such a manner that it will come in contact with all parts of the fruit, foliage or branches, as the case may demand.

But does the practical grower apply the mixture in this way? No, far from it; yet he wonders why the mixture is not effective. The writer recalls the case of a certain vineyardist whose crop was infested with black rot. This grower thought he had sprayed thoroughly, yet the Bordeaux specks on the fruit and foliage were few and far between. He wondered why the fruit rotted so badly. On the other hand, Mr. Albert Wood, of Carlton Station, New York, had faith that he could control the dreaded San Jose scale if he did the work of spraying thoroughly. The trees were sprayed with scalecide twice in the fall and again in the spring. So marked were the results that during the following summer Mr. Wood offered one dollar for every living scale found on the treated trees. In spite of the closest scrutiny by several entomologists and horticulturists, Mr. Wood lost no dollars. This is an example of the result of thoroughness.

It is an easy task to do thorough work with the improved machinery of the present day. High pressure gives a fine mist-like spray, which distributes the mixture evenly over the foliage and fruit. This high pressure, which was difficult to obtain by means of the hand pump formerly in vogue, is secured now by means of the power sprayers. Also, most of the modern sprayers have a tower attachment, which enables the operator by the use of an extension rod to direct the spray to all parts of the tree. The illustration shows a sprayer with this tower attachment. The operator is able to get directly at the foliage on the high branches and also in the center of the tree.

Photo, Craig. Courtesy of Horticultural Department, Cornell University

A GASOLINE SPRAYER WITH TOWER—A TYPE COMMON IN WESTERN NEW YORK

The fruit grower may desire more definite information in regard to the methods of combatting the different fungous diseases and insect pests. The following directions are designed to furnish this information, and if the grower will do the work thoroughly he need have no fear of the results.

SAN JOSE SCALE

The grower should spray twice to control the San Jose scale. The first application should be made in the fall as soon as the leaves have fallen. Lime and sulphur is the most efficient and cheapest spray. For the average grower, however, it is rather difficult to prepare. If desired, this fall application may be made with scalecide or one of the reliable miscible oils. The second application should be made in the spring just before the buds start. Preferably this should be lime and sulphur, since an application of lime and sulphur made at this time is equally efficient as a fungicide, and answers for the first application of Bordeaux as well as an insecticide for the scale. Care should be taken to cover all parts of the branches.

THE CODLING MOTH

The eggs of the codling moth are laid on the surface of the apple. These hatch, and the larvæ crawl into the apple at the

[CONCLUDED ON PAGE 5]

GOLDEN OPPORTUNITIES, OR FARMING FOR MONEY

As a business proposition farming compares very favorably with other occupations. Few farmers become millionaires and there are few who die in the poorhouse. There are as good prospects for the average man to make a living and lay up some money by farming as at any other occupation.

Farming should not be one-sided. If you have all your eggs in one basket you perhaps cannot save them even if you do watch the basket, and to use more than one basket you must have more than one egg. This is plain to one who has tried exclusive grain raising for a few years. Look at the man who has kept no live stock, cattle or hogs for a term of years, simply raising grain.

You will find that when he has the largest crop he must take the lowest price, and when the price is good the crops are small and nearly all fed up to the team.

It takes some work to keep stock, and means closer attention to business than grain raising. It is the man who has several fat hogs and some cattle to sell each year who is getting ahead.

Go where you will; study the condition from any and all sides, and one year with another you will find that the man who has stock has money. The island of Jersey contains sixty-two head of cattle for every one hundred acres of the total cultivated area; Guernsey and its dependencies, sixty-six head to the one hundred.

Look at the small farms of five, ten or twenty acres. We have some in this country, thanks to having learned something from Europe, and you will see that the farmer who carries a good amount of live stock, be it hens, hogs or cows, has ready money on hand at all times of the year, every day a little, no waiting till an annual harvest. and then perhaps a failure either in crops or price, but a steady income or increased value each day, and at any time an opportunity to realize cash if needed.

Hens are always salable if one needs some money. Butchers are looking for fat calves, beeves and hogs. A colt, if a good one, brings quite a bit of money.

Do not change too much nor too often—either your location, by moving about constantly, or making too radical changes in the kind of stock, as keeping cows one year, sheep the next, then hogs—for you will be buying at high prices and selling at low. Stick to one kind till it proves a success or a failure, and make haste slowly in changing.

I have in mind two brothers. Their father left them each a good farm. One has his farm yet and has moved into town, letting another work the farm on shares. The buildings are in good repair, there being a new silo, tool shed and granary. The stable was built a few years ago with cement floor, and there is a good dairy on the farm.

The other man sold his farm, and moved to another farm, working it on shares. He stayed a few years, moved back and built a house, sold it and moved again, then bought another farm, and in fact has been constantly changing. Perhaps he has as much money, but think of the wear and tear, to say nothing of the expense. JOHN UPTON.

FEW IMMIGRANT FARM LABORERS

In a daily paper last week I saw that ten thousand immigrants had landed at Castle Garden the previous day, and that five ocean liners loaded with almost as many more were expected in a day or two. The daily jubilantly called attention to the reports received from foreign countries that not less than a million will come this year, and that factories and farms will be fairly well supplied with laborers.

The percentage of this army that will go into the factories may reach fifteen or twenty; onto the farms, probably five. Those going to the farms will come from the English-speaking nations, and from Sweden, Norway and Germany. All the rest will go to the "foreign quarters" of the cities, into the mines and along the railroads. The bulk of them come here to make a few hundred dollars to take back to their native lands and live at ease the rest of their days, exactly like the Chinese. The unions have succeeded in excluding the Chinese and Japs to a large extent, but "corporate interests" prevent them from checking the hordes of southern Europe. Farmers desiring more help need not expect to get it from these immigrants.

I have known of several instances where farmers have tried to induce this southern Europe element to work on the farm, and after doing double work a month or two teaching them how to manage implements and teams have had them pick up their clothes and depart for the cities right at the time they were most needed. One farmer told me that he had tried six of them, and all had skipped after he had wasted two weeks to two months teaching them how to do farm work. After having two leave him one season he succeeded in securing an intelligent young German who had worked on farms two years and fully understood farming, and he said it was like getting a square meal after going hungry two days.

"Why," said he, "I could lie in bed an hour longer in the morning, and go to town twice a week, and then get three times as much work done, and done right, as I could with those other fellows about. I could sit at the table and tell this man what I wanted done, and how I wanted it done, and know that it would be done that way as well as if I had done it myself. I gave the other fellows twenty dollars a month, and they did not earn five. I gave this man thirty dollars a month, and compared with the others he was worth sixty."

He said his experience taught him a good lesson. He would have nothing more to do with ignorant foreigners. It was worth twice what they earned to teach them the English language and how to do the work. He would hire experienced, intelligent men and pay them good wages, and not work them to death. He had found he could secure plenty of help, such as he desired, by following this plan, and he could do much better farming, and be at peace with all mankind. "Pay big wages if you want big help," said he. "Pay half wages and you get half help."

GARDEN CROPS IN PLACE OF FRUIT

A young farmer writes that he is going to have very little fruit this season, the late spring frosts having killed almost all he had in prospect, and he would like to grow something to take its place. He is a little late with his query. But, as he says, the killing was done late, and he had not thought the matter over, nor made any preparations for such a contingency. Next to lots of good fruit there is nothing better than an abundance of well-grown vegetables. The usual method is to plant a lot of seeds in the early spring, and when the crop is gathered that is the end of garden truck.

I plant early, and again at different times along through the whole season. One can have radishes and lettuce from early spring till hard freezes come if he will plant a small quantity of seed about two weeks apart. The soil should be stirred deeply, made very fine, and the seed sown in little furrows two or three inches deep. From the first of June to about the first of September I make these little furrows the width of a hoe and at least two inches deep, and sow the seed thinly along the center of the furrows and cover lightly. If the weather is very dry I sprinkle the rows every evening until the plants are well started, then keep the surface loose and mellow with a rake. A good wetting about twice a week, done about sunset, never fails to make tender radishes and crisp lettuce the summer through. They should always be gathered for the table early in the morning, and be kept in a damp, cool place until dinner or supper time. A wash tub set inside a building or on the north side of one is a good thing to keep them in. Put in two or three inches of water, lay the radishes in it, and set the lettuce so the roots are in it, and cover with wet gunny bags or a board cover, and the stuff will come out in fine condition for the table. Then one can grow lots of good cabbage with little trouble, while celery is not difficult to grow after one learns how to manage it. He should not overlook the turnip crop. He will have time to grow tomatoes, and he should have an abundance of them. All that are not used as they ripen may be canned.

Then it is not too late to grow some good melons, squashes and pumpkins. I plant the seed in three or four inch pots or in old fruit cans, set them on a shelf behind the range, and keep the soil damp, and it is surprising how quickly the plants appear. Place them in the full sunshine, and as soon as the third leaf is well started, carefully take plants and soil out of the pots or cans and set them in well-prepared rich soil and they will start off at once and grow rapidly. I have set melon, squash and pumpkin plants, that were started this way, during the first days of June, and had ripe fruit off them a week before that on early set plants was ripe.

Then he has plenty of time to grow a good supply of sweet corn to use while fresh and for canning or drying for winter use. A farmer is not half bad off for something good to eat, even if the fruit is badly injured. He can have a bountiful supply of the best vegetables all the summer and fall season, when vegetables and fruit taste good, and lay up a supply of such as keep well in winter to mix with his pork and beans when snow flies, and do this without the aid of greenhouse or hot beds.

SAVING THE HAY CROP

This same young farmer states that he will have quite a nice crop of hay this season if nothing extraordinary happens, and he wants a few pointers on harvesting the same. One of the main points is to have his machinery ready when the crop is ready for it. He should have an extra sickle for his mower on hand. See that all bolts are tight and every part in good trim. A little dab of fairly thick paint is one of the best things to prevent loss of bolts. If the machine is not fresh painted, go over it and dab a little on each end of the bolts. Have plenty of oil on hand. Examine the horse rake and tighten up and paint the bolts. Inspect all the tools required in gathering the crop, and have them all ready for business. The harvesting will depend on the weather. If it is steadily fair one can go ahead and cut all he can handle in a whole day. But if it is sunshine and showers alternately he will be obliged to watch closely and cut only as much as can be cured and gotten up between showers. Heavy showers damage hay so badly that he should not cut a swath if there is danger of rain before it can be dried and gotten under cover. It is better to put it in the barn a little green than to have its feeding and selling qualities injured by rain. If the weather is just right when the grass is barely ready for cutting, go ahead and cut anyway. Nothing of any consequence will be lost, while much may be gained. I have seen men lose the best value of a whole crop by waiting for the grass to get just the ripeness they imagined was perfection. The palatability of hay that is cut a little early is very much greater than that cut a little late, and palatability is a large factor in its nutritive value. A full half of the hay crop goes up in a more or less damaged condition through a lack of knowledge or intelligent action on the part of the growers. FRED GRUNDY.

Courtesy of Horticultural Department, Cornell University

AN EFFICIENT AND INEXPENSIVE HAND SPRAYER WITH TOWER

ALFALFA

J. A. M., of Pennsylvania, asks: "When would you advise me to sow alfalfa, and how?"

To give my personal experience, I have found sowing in late July or the first week in August preferable. My numerous spring sowings of alfalfa have not been satisfactory, on account of the weeds taking possession and choking out the alfalfa. I now have a very fine stand of alfalfa, from which I cut four crops of hay last year. It was sown about the first of August, 1905, after a crop of ripened wheat was harvested. The ground was manured and plowed immediately after the removal of the wheat, and harrowed thoroughly and frequently till time of sowing. The later harrowings were shallow, for the purpose of securing a compact sub seed bed with a fine surface, to encourage the germination of surface weed seeds and secure their destruction. The alfalfa made a good growth the first season, but was not clipped.

My sowings this year will be after wheat and after early sugar corn, to be grown as a soiling crop for cows and swine.

The ground should be well drained and fertile; if acid, corrected with lime, and under no imaginable conditions will a liberal application of phosphoric acid and potash work any harm, and will likely do much good.

Lecturers of the West are inclined to discount alfalfa growing in the East, but as our state of Pennsylvania has some of the best corn crops in the world our possibilities in alfalfa growing are sufficiently encouraging to inspire us to keep at it. W. F. MCSPARRAN.

SHARE OF THE UNITED STATES IN THE WORLD'S COMMERCE

Just what is the share of our people in the entire commerce of the world—that is, the trade from one country to another, and including all agricultural and manufactured products—is shown in a carefully compiled table in the report of the United States Bureau of Statistics. The total imports of the countries of the world for last year were valued at $13,739,697,000. The total exports of domestic products (not including the re-export of foreign products which had been modified or were simply in transit) reached a value of $12,496,419,000. All the countries other than the United States together drew fourteen per cent of their imports from this country, and sent nine and one half per cent of their exports to us. The percentages for all the principal countries of the world are given in the following table:

Countries	Percentage of total imports drawn from the United States	Percentage of total exports sent to the United States
America:		
Canada	59.59	30.41
Mexico	65.99	68.60
Central America—		
Honduras	73.70	.....
Nicaragua	52.09	53.21
Costa Rica	51.65	47.14
Guatemala	39.55	34.9
Salvador	31.18	21.72
West Indies—		
Cuba	45.34	86.53
Santo Domingo	71.65	65.16
Haiti	35.56	8.84
South America—		
Columbia	34.15	54.01
Venezuela	30.22	31.11
Ecuador	28.86	27.32
Peru	17.98	9.34
Argentina	14.10	.....
Brazil	10.33	41.00
Chile	9.92	15.20
Uruguay	9.67	.....
Bolivia	8.45	.....
Asia:		
Japan	21.35	29.48
Philippines	16.80	36.28
China	16.68	11.86
Korea	6.19	.....
Java	1.66	8.25
India	1.47	6.13
Australasia:		
Commonwealth of Australia	11.70	.....
New Zealand	11.21	.....
Europe:		
United Kingdom	20.45	7.25
Denmark	16.08	.....
Germany	13.91	9.46
Italy	12.48	11.95
Spain	11.21	.....
France	10.70	6.00
Russia	9.66	.....
Austria-Hungary	9.49	2.36
Netherlands	9.38	.....
Belgium	7.98	.....
Sweden	7.22	.....
Portugal	7.13	.....
Switzerland	.....	12.90
Turkey	1.00	2.76

FARM NEWS-NOTES

The production of beet sugar in the United States in 1906 amounted to 433,010 tons of 2,240 pounds.

Seed exhibitions and scoring contests in Iowa are rendering valuable aid in increasing the average yield an acre in that state.

Prof. L. H. Bailey of Cornell University, Ithaca, New York, is now engaged in editing an "up-to-date" Cyclopedia of Agriculture.

GREAT INTEREST IN POTATO CULTURE

Not in the past ten years has there been so much interest in potato production as there is now in the Middle West, Northwest and Southwest. Some of the most extensive operations in growing this popular food are being carried on in what was known a few years ago as the "cut over" regions of both Wisconsin and the lower peninsula of Michigan. The timber had been cut off years ago, and great wastes of land were marked by stumps and charred trunks of trees that once stood in raging fall fires. The brush and trash of this land has been cleaned off, the stumps have been pulled and great tracts of it are now used for growing potatoes.

In Indiaha, where large tracts of land were redeemed from the overflow of the Kankakee River, and in many other sections of the state, farmers are producing crops of this kind. In White County one farmer planted one hundred acres in potatoes and built a stone house to hold the entire product. This is but a single instance of Hoosier interest in the subject.

Recently a Michigan man left his home near Benton Harbor, where he, along with some other progressive men, had been known among the leading fruit growers of the state, and went to Texas, where he is one of the owners of thirteen thousand acres of land. On this big plantation he has put in three hundred acres of potatoes.

Out on the Chicago and Northwestern railroad in Sheridan County, Nebraska, potatoes already have taken a wonderful start. Great tracts of rich land are given up to their production, and a great variety of machinery is used to plant, cultivate and harvest the crop. To a considerable extent the Indians are made use of in planting and gathering them, being paid one dollar and a half a day for their work.

In one section of Illinois, in Will County particularly, the potato growers formed a "Potato Growers' Association" for the protection of the farmers who are now giving attention to this crop. The object of the organization was to uphold their interests in selling the vegetable direct to the consumers. The town dealers had put their heads together to fix and hold prices. They worked the scheme so that the price to the farmer was run down, and then when the crop was bought up they would bleed the town consumers. It is claimed that one year the price was run up to ninety cents a bushel. Then the town dealers undertook to have the town council pass an ordinance to prohibit farmers from selling direct to the consumer, and then the fight was on in earnest. The growers got together, formed the Potato Growers' Association, and announced their purpose to fight the ordinance to the state supreme court, and further if necessary. To-day the ordinance is a dead letter, and no official of the town attempts to enforce the obnoxious measure.

J. L. GRAFF.

THAT IRON COW PEA NEWS

People who knew me and people who didn't wrote me about the Iron cow pea which was the subject of an article of mine in FARM AND FIRESIDE some time ago.

I want to answer a few inquiries as briefly as I can. All who are interested will please paste them up for reference.

They require ordinarily one hundred days to make a good crop well matured.

The yield of cow-pea hay varies from one thousand to five thousand pounds, with an average of a ton under proper management.

The yield of seed is from ten to twenty-five bushels an acre, but very fertile land does not produce the best yield, as the growth of vines is too rank.

The value of hay on our farms to-day is twenty-five dollars a ton, in comparison with No. 1 timothy at twenty-eight to thirty dollars a ton.

The method of planting may differ and equal results be obtained. Where sown in drills they should be in rows about three feet wide and twenty-four inches in the drill, with three to ten seeds in the hill, according to the quantity of seed on hand. Five to eight seeds is preferable.

Sown broadcast, a bushel an acre is a liberal quantity. This method has been used for growing hay here until this year, when seed is so high and scarce. In most cases they will be drilled and cut this season.

They may be planted from the time of late corn planting till the middle of July in most localities, though it is usually best to plant by the first of July, however. In the South they will be profitable up till the first of August.

I have no seed to sell.

It is not absolutely necessary to get Iron pea to experiment with. Try the Whippoorwill or New Era if you can get them. They are quick growers and usually do well.

The Iron resists all diseases and retains foliage the best of all peas.

The average price at this time of year is about two dollars and fifty cents a bushel, and Iron peas are worth a dollar more.

J. C. MCAULIFFE.

THE LABOR QUESTION

The heavy and incessant draft by the various industrial establishments in this vicinity on every desirable class of labor, and the fairly good rates of pay offered by them, has drained the whole section of help, such as might otherwise be suitable for farm work, to such an extent that really little else but specimens representing brute force are left available for farm helpers. The intelligent working man goes to the factory rather than to the farm, not because the factory work is more congenial or more wholesome, but because the factories can afford to pay higher wages than the farmer.

SAMPLE POTATO PRODUCT OF THE KANKAKEE BOTTOMS

Just as soon as the young fellow is beyond the reach of the compulsory-education law he starts with his dinner pail for the factory. We are left without the good help of former days. We then had fairly intelligent and fairly well-bred young men to live with the family. They got up in the morning in good season to do the chores, and worked along at anything that needed attention, and in emergencies even till a late hour in the evening. Our "hands" now work by the day and board themselves. Not every one that can now be had for farm work is fit to be with the family, especially the young boys. The "day hand" plan is preferable for many reasons, not the least of which is the saving of labor to the women of the house. Domestic help is scarce, and we must avoid all unnecessary cooking, washing and making beds.

I have come to the conclusion that I must expect nothing in the way of skill or intelligent action of my helpers. What I want is simply their physical force. I use them for pitching and hauling manure, handling team or horse in plowing, harrowing, cultivating, etc., and rely on my own work in anything requiring skill and the exercise of good judgment, and am in constant and close supervision.

As an offset for the higher wages we have to pay, or for the poorer class of work we get, we must raise more valuable crops or raise crops with less labor. Nothing is surer than that we cannot hire labor in raising average potato or average grain crops without loss. We can afford to use fertilizers just as freely as ever, even at their advanced cost, provided we use them in their proper place, and without waste, but we cannot afford to be in the least wasteful with labor. To expend costly labor in trying to raise a crop of potatoes, or corn, or any cereal, or onions, on land not in proper condition of fertility or tillage, on land from which we cannot expect more than sixty or seventy bushels of potatoes, or twenty bushels of corn, or ten bushels of wheat, or twenty bushels of oats, or two hundred and fifty bushels of onions, is simply a waste of labor and a losing proposition. But when you plant early potatoes on good soil, with a reasonable certainty of raising two hundred and fifty bushels or upwards an acre, and of being able to sell them at seventy-five cents or more a bushel, all the labor that one might use in the production of that crop, even at two dollars a day, will be abundantly repaid. The crop would return a good profit even if you pay two dollars a day for man's mere brute force, and charge five dollars a day for the owner's supervision and skilful direction of the work. But there are many classes of work on the farm, and especially in the garden, such as seed sowing, and planting, and spraying, etc., which I do not like to trust to the average workman, and which I invariably try to do myself, even if I cannot afford to work at two dollars a day.

LABOR IN THE ORCHARD

In western New York—or at least in many localities of that district—the call for extra help during the fruit-picking season is very large and pressing. At the last meeting of the Western New York Horticultural Society, Mr. Collamer, when asked about his way of securing labor, said: "You won't have a bit of trouble. Use your help well and they will come back to you year after year."

This may be true if you can employ your help pretty regularly during the entire open season. A near friend of mine employs a dozen or more men from early spring until winter, and they are usually the same set of men who come back to work year after year; and even an extra dozen or half dozen helpers, during the pear and apple harvest in September and October, are easily secured by him. But this is an exception. Usually the men desire more steady work. I treat my helpers as well as anybody, but at times find it extremely difficult to secure even an extra hand or two.

Mr. Albert Wood, in answer to the question "How are we to feed and sleep the small army of help needed to harvest an apple crop?" said: "My wife has got all that figured out. She says you must build a boarding house and hire a chef or a man clerk. And in that way through the busy season we get along with a class of help we don't want in the house, and we get work out of them. It is a serious question, feeding and taking care of help when you live twelve miles from town, and we are obliged to do that more or less."

DIGGING THE CROP ON THE GLOVER POTATO FARM

Mr. W. T. Mann's plan is probably one of the most feasible. His custom for some years has been to arrange with one of his tenants who has a house large enough for the purpose, and whose wife boards the help, Mr. Mann paying the bills. Mr. Page stated that he has harvested his crops for the last ten years by using Polish people mostly. He put up a building for them, and they board themselves. He always tries to have a foreman or one of their number above them, and in that way he gets his apples picked. These are some of the ways in which people hereabouts try to solve the help problem.

T. GREINER.

Reports from Washington, D. C., indicate that the experts of the Department of Agriculture have invented a process of removing the fuzz from cotton seed so that the seed can be accurately planted with drills now in common use. No royalty can be exacted from those using it. *

DISKING ALFALFA

It has been customary to recommend disking alfalfa fields to destroy weeds and grass. There needs to be some careful experimental work done in order to determine whether this is really the best practise. I have never been able to bring myself to believe that it is. One difficulty with alfalfa is that as a field grows older there is a tendency for plants to die out here and there and leave the stand quite thin. I do not see how the disk harrow can fail to cut out a great many plants, and thus reduce the stand. Alfalfa does not spread like blue grass, or brome grass, and hence every plant killed leaves a vacant spot.

It is true that when weeds and grass, especially crab grass, and in the South Bermuda, get a start in alfalfa, they smother it out unless some treatment is given. The plan which I favor, and which I have seen used with success, is to use a common smoothing harrow. For this purpose the teeth should be sharpened and set vertical, and the harrow should be used just after a crop of hay has been removed from the alfalfa field. Three or four good harrowings will destroy all surface-growing weeds and grass, and will not seriously injure the deep-rooted alfalfa. Last summer I saw one field that looked like it was entirely taken by crab grass, and suggested to the owner that since it was gone anyway, he harrow it until he had torn out all the crab grass. He did this, and about a month later wrote me that he had a nice growth of new alfalfa entirely free from weeds and grass. I think he harrowed the field five times in rapid succession. He had let the grass grow too long, and the stand of alfalfa had become thin in consequence of this. While I am not certain that the suggestion here made is the best practise, I certainly believe that those of your readers who grow alfalfa will be justified in trying it, at least on an acre or two of alfalfa. If they do, I hope they will let us hear from them later in the season.

I am inclined to believe that some of us have made mistakes by sowing too much alfalfa seed. Two years ago, on our farm, we prepared twenty acres of land for this crop, plowing in July after wheat, and harrowing it eight or ten times, getting it into the finest tilth imaginable. This made an ideal seed bed. We sowed twenty pounds of good alfalfa seed to the acre, and I am confident that the stand was entirely too thick. There is a distinct relation between the amount of seed to use and the state of preparation of the land. I think that on land prepared like that above described ten pounds of seed would have made an excellent stand. However, if the land is cloddy or otherwise in bad condition, it may be necessary to use even as much as thirty-five pounds of seed. Usually it will be cheaper to put the land in an ideal condition of tilth and use a smaller quantity of seed.—W. J. Spillman in Hoard's Dairyman.

GRAIN FOR SUCKLING FOALS

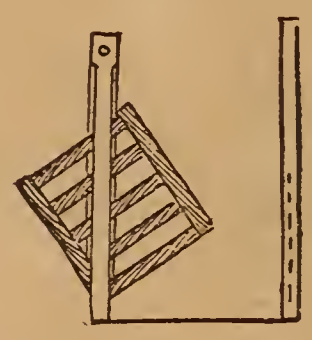
It would probably be correct to say that nine out of every ten foals grown on the farms of this country go without grain until the weaning season is past. This is certainly a great mistake. Most persons recognize the advisability of pushing young pigs with reasonable quickness from the first, and the same holds good with regard to the growing of cattle. Why, then, should the growing of horses prove an exception? True, there is a difference in the end for which the animals are grown, but when relatively large development is desired it can only be obtained by liberal feeding from the first. The great matter to be studied is the adjustment of the food to the needs of the animals so that the quantities fed shall be correct and the kinds suited to the needs of the animals. In addition to the milk of the dam, young foals will, at a comparatively early age, commence to eat oats, or oats and bran, if the opportunity is given them. When fed together, these two foods are excellent for supplying material for bone, and also for aiding in securing large development in every way. It is certainly best to feed the foal such food as soon as it will begin to take it, and to feed it in fairly liberal supplies. Of course, where the dam proves to be a good milker, such food will not be so necessary, but in many cases when colts are reared on the farm it can doubtless be fed with more or less advantage. It will not be as economical to feed the grain to the mare as to give it direct to the colt. The writer knows of no experiment that can be cited to prove this fact, but it is easy to believe that the result would be the same as in the case of lambs. Experiments have been conducted in feeding lambs which proved conclusively that better results are obtained by feeding the grain to the lambs than to their dams. It should not be understood by this that grain is not to be fed to the dam, for it is necessary to feed her more or less liberally, according to the conditions.

Review of the Farm Press

These will depend largely on the character of the pasture and the other food given. But the point the writer wishes to emphasize is that grain should be given to the foal during the period of nursing. A place should be corraled off for them, either in the pasture or barn, as the case may be, where they can take this food apart from the dam, and the eye of the master should see to it that they receive this attention regularly.—L. R. Cooch in the Practical Farmer.

SHEEP-PEN GATE

The accompanying sketch shows a sheep gate in use on several sheep stations, for wool-shed pens and outside pen gates. It works on a stout bolt at the foot of one of the uprights, and runs between the post and an upright fastened as shown. On the opposite side the gate as it shuts drops



in a similar groove. This is said to work more easily than the guillotine gate, and is less liable to get out of order. The gate as shown is half open. When fully open it is thrown quite back, and to close the gate it is thrown forward till it falls into its place in the opposite groove.—The Leader.

LABOR LOST

Work enough is done on most farms to make the owner rich. It's the blundering, misdirected labor that takes away the profits. This old pasture is crisscrossed with a dozen needless stone walls that even at one dollar a day must have cost more than the land would sell for. The swamp near by was ditched and cleared, filled and leveled with immense labor, but has relapsed into sour grass because there is no good outlet. The neighboring farm is dotted with deserted, tumble-down poultry houses built by a man who knew nothing about the poultry business, and sold at a loss to a man who cares nothing about it. Almost every piece of land in sight shows monuments, or at least traces of labor lost. Sometimes it is no more than a patch of land left in furrow all the season or a half-grown crop abandoned to weeds, but there are mistakes in sight, plenty of them, and it is to be feared the blunderers are not all confined to this locality. This is the time of year when many such errors are begun. After a winter's restraint the farmer feels equal to "tackling all creation." He fails to measure his planted field by the size of the manure heap, and he tacks on all sorts of odd jobs without thinking fully of the high price of labor and the shortness of time. Then comes the rush of midseason, and something has to be half done or not done at all. He has been caught this way every year as long as he can remember, but no matter. The worst of it is that some of the work need never have been started had the farmer stopped long enough to think it all over. Choose the most important line of work. Figure it all over again, to make sure, cut it down to what one reasonably ought to do, then do it.—The American Cultivator.

PEAS AND BEANS AS FERTILIZERS

While clover is the preferred crop for increasing the fertility of the land in the way of nitrogen, and for a supply of forage, as well as increasing the amount of vegetable matter in the land in the middle states, and alfalfa the preferred crop for these purposes west of the Missouri, there is a field for both peas and beans in accomplishing the same purpose. All these plants are legumes.

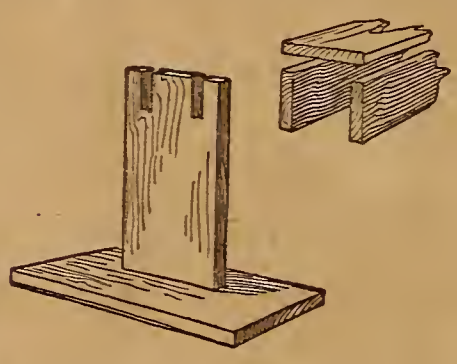
South of the clover and alfalfa country the preferred crop is the cow pea, which is a misnomer, as we have often pointed out, not being a pea at all, but a bean. It therefore germinates at a high temperature, the same as corn, sorghum, pumpkins and beans. For the Northern and Western sections that have a high elevation, the field pea answers the same end, whether it be grown as a forage crop or for seed. It has become in recent years the preferred feed for sheep in Colorado and Wyoming; while in Canada, Wisconsin and Minnesota it is grown by those who understand the business for the seed rather than for the forage. Where farmers engage in a large way in growing them as a seed crop, it is economical to secure a bean harvester.

We see it stated that the average yield of seed in the North last season has been about sixteen bushels to the acre, which at the average selling price yields a larger revenue than raising corn, but costs perhaps two or three dollars more an acre. South of the clover country there is nothing that so fully fits into the condition of agriculture, particularly on lands that need building up, as does the cow pea.

The subject of growing peas and beans is well worth investigation by farmers who have difficulty in growing clover.—Wallaces' Farmer.

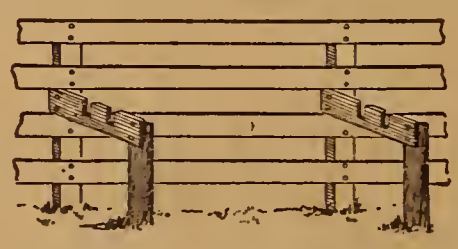
MAKING BOARD DRAINS

Drainage is a live subject with the farmers in the Northwest, and many would be glad to do a great deal more of it if they were in a financial condition to do so. While tile drains are considered the best, board drains will give very good service for a number of years, and will enable the farmer to raise better crops, and thus provide himself with the means for buying tile later on. Board drains, especially where the ground is so wet that they are kept constantly saturated with water, will last for years. Farmers living in the districts where timber is cheap will find that such drains will answer the purpose



very well without much expense. Such drains have been known to last twenty or twenty-five years, at which time they seemed to be in just as good a state of preservation as on the day they were put in.

To make wooden drains it usually requires two men—one to hold the boards in place and the other to nail them together. This method of making board drains can be improved upon by the use of a "standard." This consists of an upright board three feet high, having notches



cut into it six inches apart, one inch wide and several inches deep, to hold the boards firmly. The boards are laid in the notches, when the top board can be quickly and evenly nailed on.

Another method consists of two posts driven into the ground about three feet from the fence, with notched boards nailed across from each post to the fence. With such a rig as this troughs can be quickly and easily made by one man alone.—The Farmer.

CROPPING YOUNG ORCHARDS

Cropping young orchards as a means of partly defraying the cost of growing is a common practise. The crop in most favor with orchard owners for the purpose is corn. This brings about cultivation of the land which otherwise would not often receive proper attention, so while the corn takes from the land part of its fertility, the loss is in a measure compensated for by the tillage. There is usually enough available fertility in the land newly planted to orchard to support both crops for a few years. But the practise is robbing the future trees of elements which will be needed for the production of apples. We cannot cheat Nature. The practise amounts to discount on commercial paper—we get the use of the money earlier, and likely spend it, and do without it later.

When crops are grown in the young orchard it should be the settled purpose of the orchardist to supply plant foods to the bearing orchard, to compensate for that removed by the cropping. It seems to be generally understood by orchard growers that the growing of any other than the cultivated crops in the young orchard is a practise to be rigidly avoided. —Ernest Walker in the Southern Fruit Grower.

MARKETING STRAWBERRIES

One can retail to private customers, wholesale to grocers, ship to commission merchants, hotels and restaurants, depending on his situation, acquaintance and business ability. More money can be taken in by retailing to private families if one has the time and patience. To deal with commission merchants is often hazardous, and few are so situated as to deal safely with hotels and restaurants. My best way has been to sell exclusively to the leading grocers in my own city. I had but two miles to haul, and with a wagon equipped with soft springs I could deliver twice a day and have the fruit in prime condition. Reaching my grocers at or before eleven o'clock in the morning, they could make a dinner delivery of berries fresh from the vine, with some of the morning dew upon them and their fragrance perfect. Another delivery between four and five o'clock in the afternoon gave a supper delivery of fresh fruit. If the haul is to be not more than five or six miles over smooth roads, this method, upon the whole, will be most satisfactory. But in any case an understanding should be had with customers in advance, so that one is not caught peddling—wandering around with a load of fruit and not knowing what to do with it. I seldom load a crate that is not sold in advance. Shipping them by rail is more hazardous and expensive. I want to keep in sight of my customers. By selecting the best market varieties—that is, large, uniform berries deep in color throughout, sweet and fragrant, growing them in hills to intensify these qualities and ripen them evenly, assorting and handling them as I have indicated, never disappointing my customers in the time of delivery—I soon secured the inside of the trade, and not only had advance orders for all I could harvest, but received a good advance in price over the general market. The first item, securing steady, reliable orders, is of as much importance as the securing of a good price.

I like to run a "side line" in the form of fancy berries for fancy people on fancy occasions. It gratifies one's pride as well as his patrons, and adds more rapidly to the little bank account. When one can sell a bushel of berries for five or six dollars instead of two and a half it is worth the pains it takes to produce them. Of course, such trade is limited; but in every town of considerable size and wealth there are those who would purchase them; and when one can secure a few orders from the "400," the "200" will soon follow. And since there are so few who will try to produce such fruit, those who do will be amply paid.—I. A. Thayer in the Rural New-Yorker.

PLANT FOREST AS WELL AS FRUIT TREES

In the writer's mind few things so attach the farmer to the soil as the planting of long-lived trees for direct use as well as for fruit and ornament. Economical conditions are such that the demand for forest products constantly increases, while the supply diminishes. The substitution of steel and cement for large constructions will give only partial relief. There will always remain a thousand minor uses for wood and timber, constantly increasing with the density of population, that cannot be met with other material. The "wood lot," whether natural or hand planted, bids fair to become an indispensable and profitable portion of every farm, and will in time be indispensable to those portions of the country not naturally well forested. Aside from any considerations of gain or the advantages to be derived from windbreaks, shelter belts and similar climate improvers, there is great satisfaction in the growth and development of congenial trees. Among the many and diverse plantings on the Rural grounds few give more pleasure than the progress of the red pines and other forest conifers set out within the past eight years.—W. V. F. in the Rural New-Yorker.

You can always judge a paper's standard by its advertisements. "Cheap" and questionable advertisements denote a step backward. Farm and Fireside is going forward.

The kind of advertising a paper carries is the best gage of the quality of the paper itself, and of the intelligence and prosperity of its readers. Therefore it is our policy to make "honest advertiser" and "Farm and Fireside advertiser" synonymous terms.

Gardening

BY T. GREINER

BROAD OR HORSE BEANS

VERY interesting plants they are, these English "broad beans," and I have tried a number of varieties, and enjoyed the chance to renew my earlier acquaintance in Germany with this class of food plants. In their climatic preferences, however, these "beans" are more like peas than beans. They like a cool season, and are quite hardy, but cannot endure our hot and dry summers. Some of the varieties are often called "horse beans" or "sow beans," and are mostly grown for stock food. As a boy I used to raise the smaller sorts for pigeon food, and my pigeons were extremely fond of the beans.

In England some of the selected sorts are much used for human food, and seem to take the place of the lima bean, which will not thrive in the cool and moist climate of the British Islands. There are people who pretend to like the half-grown and tender broad bean about as much as the lima bean, but such is not my taste. Here, where we can grow the lima to perfection, I see no reason why I should eat the horse bean while the immature and tender lima is so much more delicious and palatable.

Where the lima cannot be grown, try the broad bean by all means. In many sections it may prove valuable as a crop for stock; in most places where the climate allows of growing it, the plant is interesting, to say the least, and for curiosity and for ornament it can well be recommended. Several of the American seed houses offer seed of a number of varieties of broad bean, and I believe that the office of Seed and Plant Introduction and Distribution of the Department of Agriculture, Washington, D. C., also has them for free distribution. The culture of these vegetables is very simple. Just plant them in rows as you would any bean, the rows to be about two feet apart.

PLANTS FROM SEED

I have never had better success in getting seeds in the greenhouse to start promptly and produce healthy plants than this season. The preparation of the soil for the benches or for flats has always been quite a task and a problem. Last fall I simply had a lot of soil taken up from the richest spot in the garden, a strong loam that has received annual heavy dressings of stable manure, and produced all sorts of garden crops year after year. This was piled up in one part of the greenhouse, and a portion of it was used for a winter rhubarb bed.

Flats and benches were filled with this soil, which holds moisture quite well. The surface was made very fine and mellow, and little marks were drawn across the flats and benches, into which the various seeds were deposited. The seeds were then covered with a mixture of sifted sand and sifted coal ashes, sometimes with an addition of fibrous loam. Most of the seeds, such as tomato, pepper, egg plant, cabbage and cauliflower, lettuce, etc., were thus covered about one fourth of an inch deep, perhaps more, and celery seeds even less. The soil was then well firmed over the seed with a block, and watered as needed. Every lot of seeds thus planted has come up well, and there was hardly a sign of damping off or bed rot. For the purpose of raising seedling plants, especially tomatoes, cabbages, etc., we do not want the soil either too rich or too sandy. Good garden loam seems to be just about right, and it adheres well to the roots in transplanting.

ABOUT CELERY

A Virginia reader who has never tried celery asks for "full directions how to plant, cultivate and blanch celery."

There are many others who have never tried growing celery in their home gardens, and who surely should make an earnest attempt, for good celery is worth it, and a full home supply can be had from most gardens with comparatively little effort. It will do well in rich old gardens. It likes cool weather and moist soil that is well supplied with decayed organic matter, such as we usually call humus.

For the early crop we set plants of the Golden Self-Blanching and White Plume varieties during May or up to June. Buy the plants from your nearest reliable plant grower, or send to one not too far from you who advertises celery plants. A dollar's worth of plants will give you more than the family's supply.

The most certain way to raise good celery is to plow a furrow for each row, going twice in each furrow with the plow, then to fill the bottom of furrow with well-rotted stable manure and cover soil over it, and if practicable, working soil and manure together to get it well mixed. Then fill in with soil, making the surface fine and smooth with a steel rake, but leaving a slight depression right in the center of the row. Then set the plants six to eight inches apart in the depression. Keep the ground mellow and clean around the plants, water copiously in dry weather, and when about a foot high set up boards on edge slantingly against the row of plants from each side, so as to enclose them and exclude the light. In good growing weather they will blanch enough for use in about ten days time.

For late celery, in Virginia, use Winter Queen or Giant Pascal, and start the plants in seed bed slightly shaded, sowing seed in May or June, so as to get plants for setting in early August.

The usual way of growing the crop in Southern localities differs radically from our Northern method. We set the plants in single rows, just as described for the early celery. Southern growers (except where, as in Florida, celery is largely grown for market) usually set the plants in beds, the beds being six feet wide and slightly excavated, with alleys six feet wide between the beds, to receive the soil removed from the beds. Fine old manure is spaded into the beds, and the plants set across the beds, in rows a foot wide, with plants standing six inches apart in the rows. When the plants have reached proper size, soil is filled in between the rows clear up to near the tips of the leaves, so as to blanch the stalks. In the operation two boards six or seven feet long are used, one set up on edge on one side of a row, the other on the opposite row in the same space, so as to give a chance to fill the soil in between two rows without pushing too hard on the plants themselves. The boards are then taken up and placed in the next space.

At the approach of winter the whole bed may be covered with straw or other litter, and thus protected against injury from frost, and in such a manner that the stalks may be gotten at for use as wanted.

PARSNIPS DESIRABLE

During winter and early spring parsnips are in great demand in our local markets, and when grown to a limited extent the crop is quite profitable. It is an easy one to produce, too, provided that certain requirements are satisfied. In the first place you want strictly fresh seed, for old seed will not grow. On our rich, strong loam crops of from four to six hundred bushels an acre can be easily grown; but the roots run down into the subsoil in such a way as to make the digging quite a task. Sometimes the job reminds us of pulling posts. I would prefer a lighter soil of greater depth, say a deep sandy loam, which does not hold the roots down quite so firmly, and will allow of easier cleaning. Our subsoil sticks, and even the top soil in early spring is quite sticky.

For market the crop may be dug in late fall, and stored in pits, where they can be gotten at when wanted for sale during winter and early spring. Usually it is easier digging, and much easier cleaning, than if roots are left in the field all winter. Under the right conditions, however, parsnips are a promising, a profitable and a desirable crop, and for home use we must have them.

Have you obtained that subscriber yet for FARM AND FIRESIDE that you were going to get? Don't put it off. We want to reach the "million mark" as soon as we can.

Fruit Growing

BY SAMUEL B. GREEN

CLEARING CIDER VINEGAR

T. B. D., Friendly, Maryland—Cider vinegar generally clears itself, and a dark red color is generally no objection to it. If, however, there is some solid matter held in suspension, it can be removed, and probably the color of the vinegar considerably lightened, by running it through some bone charcoal. A few quarts of this is all that would be necessary. Running it through fine clean sand is also helpful in the same way.

OYSTER-SHELL BARK LOUSE

J. H. A., Forestdale, Rhode Island—The little oblong scales infesting the apple branch which you sent in is what is known as the oyster-shell bark louse. This pest was undoubtedly on your trees a year ago in a small quantity, and the little white eggs under the scale at that time hatched out into small scales that could move. These became fixed in place on the new growth mostly, and formed the scale which is now so apparent as to cause you some anxiety. This insect is sometimes very troublesome, and occasionally even kills trees. It is not new, but has been known in New England for half a century. Any of the treatments that are recommended for scale will generally be satisfactory with this one.

If trees infested with this scale are thoroughly sprayed with lime whitewash in the autumn, the scale will usually peel off when the lime comes off in the spring. Kerosene emulsion is the best summer remedy. It should be applied when the young begin to crawl out from under the scales.

Courtesy Department of Horticulture, Cornell University

A COMBINED TREE, VINEYARD AND POTATO SPRAYER

YIELD OF RASPBERRIES

J. S., Cozaddale, Ohio—The yield of red and black raspberries an acre generally runs from seventy-five to two hundred bushels. A good crop is about one hundred and twenty-five bushels an acre. I do not know the names of any berry growers in your vicinity, but there must be many, and I would suggest that you get in touch with your state horticultural society and also with the berry growers around the suburbs of Cincinnati. If you have the right kind of soil it seems to me you have a good opportunity to go into this business to advantage.

The Ohio State Experiment Station at Wooster you should also become acquainted with, and its officers will be pleased to answer your inquiries.

PROPAGATING BLACKBERRY PLANTS

D. J. D., Port Orchard, Washington—Most blackberry plants will grow from root cuttings. It is customary to make these cuttings up in the autumn, making them about two inches long. Very often a large bunch of roots are gathered together and chopped up in a hay cutter. They are then wintered over in a cold cellar or heeled in the ground outside, and in the spring will generally be found calloused, when they are sown like seed in a loose, warm soil, and will soon produce shoots. The mere cutting of the roots about the old plants with a spade is generally sufficient to make them send up a large number of sprouts, which will probably be sufficient for propagating in a small way.

CURING CHESTNUTS

C. A. N., Chipley, Florida—Chestnuts and acorns are among the most difficult nuts to properly cure, and they are handled in the same way when kept for seed. One of the best ways of doing this is to mix the nuts with dry sand and keep them cold, as they would be when buried outdoors. Treated in this way they will generally come through the winter in good condition without molding, while if kept in bulk they are apt to spoil.

A few years ago in Denmark I visited a cellar where they stored several thousand bushels of acorns, chestnuts and beechnuts, and the method of handling them there was to lay them on the ground about eighteen inches deep, keep them as cold as may be without severely freezing them, and turn them over every day through the winter. Treated in this way the surplus moisture passes off and they do not mold. In the case of nuts sold for general consumption, it is customary to partially dry them in the sun or in ovens before shipping.

APPLES FALLING BEFORE THEY ARE RIPE

M. J. F., Carnegie, Pennsylvania—Apples fall from a variety of reasons. Among the most common is that of some insect injuring the core, thus causing the fruit to ripen prematurely. Some varieties of apples do not hold on the tree well, and easily fall to the ground in any severe wind. This trouble is often especially bad in dry seasons. The great commercial apples are varieties that hold on the tree well until ripe. Of course, protection from insects must be given by spraying or in other ways.

THE SPRAYING OF FRUIT TREES

[CONTINUED FROM PAGE 1]

calyx, or blossom end. It is necessary, then, to get the poison into the calyx end of the fruit. As the calyx closes when the apple is very small, the poison should be applied as soon as possible after the blossoms fall. One should strive to drive the spray into the calyx end. Use Paris green, one pound to one hundred gallons of water, or arsenate of lead, four pounds to one hundred gallons. It is customary to apply this with Bordeaux mixture. The second generation of codling moth which appears about six weeks later is often destructive. A spray at this time, special care being taken to hit the calyx end of the apple, will be effective.

APPLE SCAB

For apple scab use Bordeaux mixture 3-3-50—that is, three pounds of copper sulphate and three pounds of good rock lime with fifty gallons of water. The trees should be sprayed three times: First, just before the blossoms open; second, just after the blossoms fall, and third, from ten days to two weeks later. All three applications should be thoroughly made. It is customary to apply an insecticide, either Paris green or arsenate of lead, with the Bordeaux.

BLACK ROT OF THE GRAPE

In the past few years vineyardists have been much discouraged because the black rot has been growing worse and worse and spraying did not prove a preventive. The writer believes the reason for this failure has been the lack of thorough spraying. In vineyards where the black rot is bad the following treatment will prove effective:

Cultural Directions: In the spring plow the vineyard, and throw the soil to the center between the rows. Complete the plowing with the vineyard hoe. In this operation cover all dried bunches of the previous year which may have fallen from the vines. Practise clean cultivation until July, then sow a cover crop of crimson clover. It is customary to plow the soil back to the vines during the summer. This plowing turns up the dried bunches which were covered in the spring and from which black rot infection may occur. Such plowing should either be omitted or delayed until later in the fall, when all danger of infection is past.

Spraying: First, just as the leaf buds swell, with Bordeaux 5-5-50. Soak the vines, the wires and the posts. Second, after the foliage has appeared about midway between the first spray and the time the blossoms fall. Use Bordeaux 5-5-50. Third, just after the blossoms fall, with Bordeaux 5-5-50. This is the most important spraying. The fourth and fifth sprayings should follow at intervals of ten days to two weeks, according to the weather. If the grower fears that the last spraying with Bordeaux will discolor the fruit, he may use ammoniacal copper carbonate.

Poultry Raising

BY P. H. JACOBS

PREFERENCES FOR COLORS

It is not the rule to select breeds because of the colors. For instance, the White Wyandottes seem to have hosts of friends, yet it is doubtful if they are superior to the Silver Wyandottes or other varieties of the Wyandotte family. The Barred Plymouth Rocks are fully equal to the Whites, yet some farmers and poultrymen prefer the latter.

The preference of color should be considered in connection with the location. On light clay soils, probably the Buff varieties would prove acceptable, while the Black breeds would harmonize with the locations having dark soils. In some sections the white varieties do not maintain their clean appearance, though they are attractive on sandy soils. Color, however, is a secondary consideration, compared with the usefulness of any breed.

KEEPING PIGEONS

If pigeons are kept in comfortable quarters, with wire-covered yards, they should give a profit, but it will prove a loss to turn a flock of pigeons loose to fly where they desire. Owls, hawks and minks are blessings compared to such pigeons, for pigeons that fly from one farm to another carry disease. There is also considerable loss among pigeons unless they are confined. They are trapped, cats and hawks prey upon them, and gunners take advantage of the opportunities of shooting them.

For a flock of one hundred birds (fifty pairs) the house may be about ten by twenty feet, the upper story of some building being excellent. The yard should be about twenty by fifty feet, not less than ten feet in height, and covered on the top and sides with wire.

One of the essential points in keeping pigeons is to have the sexes equal. If there is an extra male he will make an attempt to secure a mate from the other males, and thus break the mating, as well as keep the colony in turmoil. He must be taken out, or a mate must be procured for him elsewhere.

Keep the house and yard clean, and place plenty of litter on the floor for nest material. Lice are very destructive to pigeons, and must never be allowed to become established, as they will render the flock unprofitable. Pigeons should be kept supplied with plenty of wheat and cracked corn, as well as with boxes of ground bone and meat, charcoal, ground oyster shells and rock salt, from which they can help themselves. A salt codfish is usually hung where they can pick it, and chopped cabbage, grass sods or vegetables may be placed where they can use such if they prefer.

They will hatch and rear from six to eight pairs of squabs a year, which usually sell from about twenty-five to thirty cents each. Old pigeons command no sale in market, being kept for breeding purposes only. If kept in confinement pigeons will thrive as long as all of their wants are supplied and lice are not allowed to overrun their quarters. Water should always be plentiful, and roosts should be placed here and there in the yards, at different heights, so as to permit them to enjoy the open air. The Homing variety is considered the best for producing squabs for market. The squabs are sold when about one month old.

GEESE AND GOSLINGS

The goose lives to the age of twenty years or more, according to reports, but as it is not desirable to make a test in that direction (nor is it important to do so), the duration of life may conveniently be reduced to ten years, though some individuals really exceed that limit.

It is profitable to keep the old geese year after year, or as long as they appear strong and healthy and produce vigorous goslings, since the young geese are not usually disposed to sit and hatch until two years old. They are always in demand in market, being easily made fat if they have good pasturage, while old geese are not desired, and do not bring enough in market to pay for the time and labor of shipping them. The rule, therefore, should be to retain the old geese, and sell the goslings as soon as they are of sufficient size for market.

The pure-bred Embden breed, which is entirely white, is one of the largest, and also a favorite. Where the young ones are intended for market, some breeders prefer Toulouse ganders and Embden geese; but if the goslings are to be retained as additional members to the flocks, the Embdens are bred without crossing with the Toulouse.

The goslings are disposed to take to the water at any stage of growth; but if hatched early in the season, and the water is cold, they may be chilled to such degree as to be checked in growth, or even meet with fatal results. However, they should have a plentiful supply of water in troughs for drinking purposes. Cooked potatoes (thickened with equal parts of bran, cornmeal and ground meat) twice a day, with cut clover hay three times a day, will be ample if allowed as much as they can eat at each meal; but if they have a grass run, it will not be necessary to feed the clover, while the potatoes and ground grain may be reduced to one meal daily until they are fully feathered.

SUMMER ARRANGEMENTS

The hen that is kept under comfortable conditions in summer will produce more eggs than if given no care in that respect. Cool quarters at night in summer correspond with warm quarters in winter; that is, it is comfort that assists in securing desired results. The material used on the floors and in the nests should not be bulky. Cut straw makes not only excellent nests, but provides litter for the floor of the poultry house, and assists in keeping it clean. When grain is thrown in cut straw, as litter, the hens will work and scratch in it industriously. There is no material so cheap and useful in a poultry house as cut straw, and the floor of the poultry house should be covered with it to the depth of two or three inches. A hen on the nest should not be buried in hay or straw during warm weather. The best material is a handful of sawdust, over which a little insect powder should be dusted. Hay in the nest is uncomfortable at this season.

Use plenty of whitewash in the poultry house during warm weather. It will not only keep the house clean, and free from disease and lice, if properly applied, but will also keep it looking clean and light, and the interior will be more cheerful. Fowls enjoy the light. They will remain outside in the dampness and rain rather than stay in a dark and dismal poultry house. When a poultry house is built it should have large windows.

Nothing is so much enjoyed by the hens in the summer as fresh earth. When the yards are spaded, or when the hens can follow the plow, they enjoy the treat, each becoming as busy as she can possibly be in her endeavor to secure worms and fresh sprouts of grass. If a little grain is scattered over the fresh earth, and worked in, the hens will scratch energetically.

YOUNG TURKEYS

The main point with young turkeys is to prevent them from being attacked by the large gray body lice, and the best way to do so is to begin with the parent birds before the young ones are hatched, as lice usually go from the adult birds to the chicks. When turkey hens desire to sit they should be anointed on the head once a week with some kind of oil, such as olive oil, linseed oil, or even lard oil. This will kill the large lice and prevent the chicks from being destroyed during the first few days of their existence.

Grease is repugnant to poultry of all kinds, hence but little oil should be used. Apply it lightly on the heads, the combs, faces and necks, rubbing it well into the skin. It will render the hen more comfortable, prevent her from leaving the nest frequently for relief from torture, and will also save the chicks from being attacked. A few drops of oil on each chick once a week should be used, and more young turkeys will be reared. The secret in rearing them is freedom from lice and dampness.

Feed them on bread crumbs moistened with milk, hard-boiled eggs, chopped parsley, onion or lettuce and cracked corn and wheat the first two weeks, feeding four times a day, and removing all food uneaten. After they are two weeks old the food may be varied to suit the circumstances. Keep the hen confined in a coop, allowing the chicks to go in and out during dry weather.

THE ARCH ENEMY

The rat is the scourge of the poultry yards, destroying hundreds of chicks annually. There are methods of getting rid of them, and the work is not very difficult. To destroy them is not to begin by making war on them, but first to secure their confidence. Feed them in one place; they will soon learn to expect being fed, and will be on the ground promptly. Do not be in a hurry to kill them, but aim to have every rat on the farm know where to get its food, and to believe that you are its best friend. Then double the quantity of food at some time, using poison, and all rats that escape death will leave, as they are suspicious when once fooled. By this plan all the rats can be destroyed at one operation. In the course of time a new generation may appear that knows you not, but use the "confidence game" on them, as with the first lot.

A farm can also be rendered disagreeable to rats, and they will leave. To do so, take concentrated lye and pulverize it to fine condition. One advantage possessed by rats is that they can go into their holes, where they are safe. Every rat hole discovered should have a little of the pulverized lye sprinkled therein. Treat all new holes in the same manner. The lye, being very caustic, causes sore feet, sores on the bodies, and sore throats (from licking other sores), and the rats will leave in disgust.

CLEANING AND DISINFECTING

There are a great many modes of disinfecting a poultry house and yard, but where a large surface is to be treated the farmer requires something that is cheap, efficacious, and which can be easily applied. An excellent disinfectant is prepared by dissolving one pound of copperas (sulphate of iron) and four ounces of bluestone (sulphate of copper) in six gallons of boiling water, and adding ten gallons of cold water after the substances have dissolved.

With the use of a sprinkler or sprayer, apply the solution to every square inch of ground, as well as on the floor of the poultry house, and repeat the application two or three times during the season. Thoroughly clean the house, and then keep it clean every day, with a broom. This may be done by sprinkling the floor with a layer of dirt, chaff, plaster or sifted coal ashes. The dry dirt absorbs all moisture, prevents the droppings from adhering to the floor, renders the interior of the house more comfortable for the hens, is obnoxious to lice, and enables the work of cleaning to be done in a few minutes.

The disinfectant solution need not be used except where necessary, but it will assist in preventing disease, as well as prove serviceable in destroying odors in outhouses and cisterns, into which drain the refuse of the sinks of the house.

THE BLACK BREEDS

Do not be disappointed if the chicks of the black breeds (Minorcas, Langshans, Black Spanish, etc.) have a proportion of white down on their bodies when hatched, as the chicks of all black breeds are partly white when young. The young birds of both sexes often retain the white feathers until almost fully grown, and during this period may have a tinge of white about them; this occurs most often on the primaries in the wings. This peculiarity has surprised many amateurs unacquainted with the black breeds, and it is difficult to make them believe that it will be replaced by black in the adult plumage.

LARGE BREEDS

The Cochins, Brahmas, Langshans and Plymouth Rocks are the best known of the large breeds, the Wyandottes being somewhat smaller, though popular. High fences are not required for the Brahmas and Cochins, as they have short wings, which prevent them from flying over a fence four feet high; and as the birds are heavy, it is doubtful if they could fly that high even if they had longer wings. The Plymouth Rocks and Langshans are more active, but are not difficult to keep in confinement.

The Cochins and Brahmas have long been considered the most persistent of all sitters, but they are excellent breeds. They will not become broody at all if properly kept, and are careful mothers. If given all the food that they will consume they soon become very fat, and when they get in such condition they remain so on a very small amount. They are sometimes indolent when too closely confined, and prefer being fed out of a trough full of grain rather than to secure any portion of their food by seeking it. A variety is better for them than grain, and it should be bulky, such as cut clover, scalded.

If not overfed they will lay as many eggs without becoming broody as other breeds, and are also remarkably free from disease, being among the hardiest known.

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Live Stock and Dairy

HANDLING THE COLT.

If the dam and colt are in pasture, the colt will soon begin nibbling grass. It will, however, be found good practise to place the feed box for the dam low enough so that the colt can get at it. It will be noticed that the foal will follow the mother to the box and nibble at her feed, thus acquiring a taste for grain.

It will also be found beneficial to build a lot in a suitable place, and so arrange it that the colt can get through, but the dam cannot. This can be done by either raising the bottom of the fence high enough to let the colt through, or by paneling up and down. Then place a trough in this enclosure and put therein a quantity of ground grain.

This enclosure should be located near the water; and it will be found good practise to place a lump of rock salt at the side of it, thus inducing the dam to loiter around it. The colt will then get into the habit of running in and out, partaking of the feed often through the day, and in the course of a much shorter time than would otherwise be the case it will be found better developed and further ahead than colts not receiving similar treatment.

In many cases colts will practically wean themselves; but should they not, it is important that they be weaned not later than at five or six months of age. At this time the colts should also be halter broke, which can be done by first having small halters made and putting them on the colts, leaving them on all the time. However, do not attempt to lead them at once, but each time they are fed they can be led a few steps this way and that. I find this method to be very effective, and obviates the trouble usually experienced in halter breaking the young animal.

It must be remembered that the colt is in the habit of partaking of milk from the dam many times a day. Therefore, he should have feed in front of him all the time, so that he can partake of it just as often. W. H. Underwood.

◈

PRICES OF COLTS

The business of raising young colts has often proved disastrous from an abnormal mortality to mares and colts at the time of foaling. In fact, the writer has known of the actual unfortunate experience of several good horsemen who were induced to abandon breeding for colts on the grounds that the loss was demoralizing the enterprise. To be sure, these were not large breeders, but ordinary, well-equipped farmers who were carrying from four to eight mares. But that was several years ago, when colts were commanding abnormally low prices.

We have never raised draft colts for two reasons: in the first place, our policy of farming requires heavy teams for steady work, and our quarters are limited; in the second place, we have always been able to buy all the colts we needed, and at prices that made purchasing more profitable than rearing.

But what has mortality to do with price? It has something. Ten years ago feed was scarce and high in price; colts were plentiful and prices the lowest we ever saw. Consequently mares with foal were "skimped;" in some cases they were allowed no grain at all. The price at which the colt must be sold was so low as to prohibit expensive, nourishing rations. Mares in foal had to be neglected. What was the consequence? Mares and colts of low vitality. Low vitality at foaling time means high mortality. High mortality kills the business.

In 1896 we bought several good draft four-year-olds at one hundred dollars each; the last year we have paid double the price for their equals a year younger. A four-year-old draft colt at one hundred dollars is hard-earned money, to say nothing of risk and accidents. But two hundred dollars for a three-year-old colt, when feed is plentiful for mare and foal, is not a bad proposition.

What we would imply is this: good draft colts never brought better prices than they are commanding now; feed is plentiful. Geo. P. Williams.

◈

BREEDING FROM HALF-BLOODS

In spite of the teachings of the most up-to-date breeders and writers there seems to be plenty of people that are willing to breed to half-blood sires because the service fee is not quite so high as is asked by owners of pure-blood males. They vainly hope to get something that will be nearly as good as is secured from the full-blood sire.

The fact is that there is no reliability in the half-blood or low-grade when used for breeding purposes. The posterity is more likely to inherit the bad qualities than the good ones. I have recently noticed this tendency in two calves. They are nearly the same age; neither of them can boast of good breeding. One is the result of a scrub cow being bred to a cross-bred bull, half Angus and half Shorthorn, and this calf being bred to a half-blood Hereford. The other is the product of the first-mentioned scrub cow bred to the half-blood Hereford. There is only three weeks' difference in the ages of the two calves. The one that has the Shorthorn, Polled Angus and Hereford blood all mingled is one of the worst scrubs that I ever saw. The other is a fair-sized calf with a reasonably good conformation. The general mixture of breeds has been an injury in this case at least. It may be that all cases would not work out this way, but it is a general principle in breeding that mixed bloods are not reliable as breeders.

A. J. Legg.

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The entire increase in wealth in the South during the past few years of prosperity has been converted into better homes, better barns, more and better live stock. Practically all the wealth that is of material aid in building up the productiveness of the soil is invested in the live stock. Probably half of the increase in wealth has been invested in stock, while the rest has gone into the various other channels of improvement, and only a small quantity, comparatively speaking, has been converted into luxuries.

The advance in the live-stock industry has been something phenomenal. Better cattle are found in every section of the South, and where scarcely a farmer could be found with a cow ten years ago it is now just as difficult to find one without a cow.

The labor problem is losing some of its terrors in view of the possibilities presented by the live-stock industry, and in a few years there will be many communities free from anything like labor scarcity. One thing that makes this possible is the fact that hay and grain grown on a cattle farm can be produced with a great deal less labor than is needed on an average cotton farm. I know of the time when farmers thought there was nothing else to be raised but cotton that would bring them money, but now there is nothing grown on a Georgia farm that will not sell immediately at a profitable price.

The business of swine growing is becoming one of the most profitable lines of live-stock farming, especially in connection with cattle. The many feeds that can be so easily grown furnish an excellent method by which waste places can be cultivated and used to advantage. Crops can be grown at most any period of the year and fed to hogs with profit. The root crops are the most valuable for winter feed, but in summer the succulent green foods can be used to best advantage, as an enormous amount can be grown on a small acreage. J. C. McAuliffe.

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◈

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◈

It was a wise old philosopher who said, "We shall pass through this world but once; therefore, any good deed or word that we can do or say for another should not be passed by." Here is a thought for every one of our FARM AND FIRESIDE family. Do your neighbor "a good turn" whenever you have the chance. Always say a good word for a man when you can. The happiness and help that you can give to others will make you yourself a happier and better citizen and farmer.

◈

There is no speech so eloquent, no force so powerful, as the word and the will of the common people. It has overthrown kings and broken up empires. Here in our own country it has overthrown "bosses," wrecked political "machines" and brought to submission the railroads and other big corporations. Let us all be glad that we belong to a class of people whose influence for good is so powerful. The American people can accomplish anything—absolutely *anything*—so long as they remain together. We need never fear for our republic while the common people live.

◈

Have you ever thought about why so many boys leave the farm? It isn't because city work is easier, nor is it entirely because of higher wages, for the increased cost of living in cities more than makes up the difference. Many ambitious farm boys are brought up to believe that farming is a trade rather than a business. They have the business instinct, and they want a chance to develop it, so they turn to the city. This is a great mistake. The prosperous farmers are now and will be well-educated, keen business men. But if all the farmers of the country would make their occupation more of a business, if they would systematize it and develop the business end as well as the agricultural end, they would not only be more prosperous, but they would also place the greatest business in the world on a much higher plane. Then the ambitious farm boys—the boys who would make just such farmers as this country wants—would stay on the farm. They would realize that there is as great an opportunity for the development of their business ability on the farm as in the city.

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BUYER, BEWARE!

Whenever you buy a can of corn, or fruit, or paint, or any original package of goods, be sure you are getting correct weight or measure. Keep on testing until you find a good brand that is full weight or measure. The short-measure or light-weight fraud is very generally practised, but there are honest manufacturers and merchants, and they deserve your entire patronage.

Follow the rule "Let the buyer beware," and you will soon find out the cheats.

But packers and manufacturers are not the only ones practising this kind of petty larceny. Retailers are caught and fined for it, too. The last annual report of the New York Bureau of Weights and Measures reports 2,750 violations with $68,750 penalties, and gives facts showing that some grocers have a systematic method of cheating their customers by short weights. A few ounces under weight on each order filled piles up a big illegitimate profit in the course of a year.

Petty cheating in the retail trade has developed to such magnitude all over the country that there is considerable use of false computing scales made expressly for unscrupulous retailers. Test the weight and figure the cost of goods that pass to you over computing scales, and you may detect one of these clever mechanical thieves.

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SPARE THE SWALLOWS

The Department of Agriculture recently issued an important circular on the value of swallows as insect destroyers. The author, Professor Henshaw, says:

"The present circular has a twofold purpose: First, to make known the great value of swallows as insect destroyers and to emphasize the importance of protecting them wherever found; second, to widely publish the peculiar value of these birds in the war now being waged in the South against the cotton boll weevil, and to ask for the co-operation of citizens of Northern states, where these birds chiefly nest, in an effort to increase their numbers.

"That insect-eating birds are of great value to the farmer and the forester is so well known that their protection is now believed to be absolutely necessary to the welfare of any country. But the value of certain kinds in the United States has been recently emphasized through the invasion of the cotton states by a new and destructive insect—the boll weevil. This new pest, despite every effort to stay its march, is spreading at the rate of about fifty miles a year, and sooner or later is certain to infest the entire cotton-producing area—a fact which not only seriously concerns the Southern planter, but in its ultimate consequences affects the well-being of the whole country."

As the result of investigation by the Biological Survey, thirty-eight species of birds are now known to feed upon the cotton boll weevil. Prominent among these is the swallow tribe, which nests in the North and migrates spring and fall through the cotton belt, including the barn swallow, the tree swallow, the bank swallow, the cliff swallow and the purple martin.

With the best of reasons the department makes a strong appeal to the North for the protection of the swallows, particularly against the marauding boy, the prowling cat and the English sparrow.

Pointing out their great value both North and South, the circular says:

"From the standpoint of the farmer and the orchardist, perhaps no birds more useful than the swallows exist. They have been described as the light cavalry of the avian army. Specially adapted for flight and unexcelled in aerial evolutions, they have few rivals in the art of capturing insects in mid-air. They eat nothing of value to man except a few predaceous wasps and bugs, and in return for their services in destroying vast numbers of noxious insects ask only for harborage and protection. It is to the fact that they capture their prey on the wing that their peculiar value to the cotton grower is due. Orioles do royal service in catching weevils on the bolls; and blackbirds, wrens, flycatchers and others contribute to the good work; but when swallows are migrating over the cotton fields they find the weevils flying in the open and wage active war against them. As many as forty-seven adult weevils have been found in the stomach of a single cliff swallow.

"What may be termed the interstate relation of birds is not always as simple as in the case of the swallows. Some birds are most desirable summer residents of Northern states, but when migrating greatly damage certain crops in the Southern states. Not so with the swallows. Their beauty, their graceful flight and their sociability insure them a welcome everywhere and endear them to every lover of Nature. Their esthetic value, however, great as it is, is not so important as their economic worth, so constant and effective is the warfare they wage against the insect hosts which but for them and other avian benefactors would render successful agriculture impossible. To the Southern states may safely be entrusted the duty of protecting and augmenting in every possible way the numbers of resident birds that prey upon the boll weevil. But it is for the Northern states to aid the good work so far as lies in their power. An enlightened patriotism knows no state boundaries. The insect enemy of the farmer of either district is the enemy of the common weal, and only from co-operation can come a full measure of success."

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CORRUPTING PUBLIC OPINION

In its campaign against "tainted news" "Collier's" is doing good service in exposing the methods by which various interests operate to mold, influence or corrupt public opinion. Press bureaus under various names, located in New York, Chicago, Boston, Washington and other large cities, regularly send out to papers all over the country inspired matter disguised as a news letter deliberately designed to deceive the reading public and promote some financial, political or personal end. As a rule the editors and publishers who accept and print this free stuff are themselves deceived and imposed on, but in many instances the publicity mercenaries of the interests that send it out secure its publication by bribery of correspondents or outright purchase of space in the papers.

Underhand press propaganda is used for every purpose where unscrupulous beneficiaries can put up the money for it. The discriminating reader can find it in connection with railroads, patent medicines, murder cases, Brownsville affairs, municipal ownership and every other subject where it is to somebody's selfish interest to corrupt public opinion.

Although they have many small imitators, public service corporations are the most notorious operators of the press-bureau scheme, and spend millions annually to deceive the reading public. Their chief purpose now is to prevent the enforcement of existing laws and the enactment of better laws and to impede the progress of the square-deal movement in the business, financial and political world.

Railroad magnates are adepts in working the press and the people. For many months the late President Spencer of the Southern Railway had personal charge at Washington of the work of spreading throughout the United States newspaper propaganda against rate regulation. His mantle seems to have fallen on the shoulders of his successor, President Finley. This gentleman is quite active in delivering clever addresses before various audiences in the South, and in distributing them in pamphlet form to the press. His main effort seems to be in making special and specious pleas to farmers for their support against state and federal railroad legislation. His theory is that by so doing the farmers will aid the railroads in developing the great natural resources of the South.

Let the railroads make fair rates, stop discrimination, cut out stock gambling, obey the laws and give the people a square deal all around, and the development of the South will progress by leaps and bounds. By reputation the railroads themselves have done more to retard the development of the South than any other agency. Let the energy now being used in forming public opinion be used in reforming some of the ways of the railways, and the people of the South will become prosperous beyond their present dreams.

THE MIDDLE WEST AND WALL STREET

"Ten years ago the West was afraid of Wall Street. It knew that it owed a great deal of money to the East. It feared that there might be a pressing for payment and that it could not pay. But with the coming of a series of good crops, that are yet continuing, the West began to rise above its financial difficulties; then gathered, slowly at first, but more rapidly of late, a surplus which has shown itself in increased bank deposits, better dwellings, new public structures, improvements of every sort. It adjusted its debt to the East and was independent. So to-day the West looks on Wall Street exactly as it looks on Monte Carlo, as a resort of gamblers whose stakes are railway and trust securities iustead of ivory counters. It seems just as immaterial to the average Westerner who wins or who loses at the stock-market game as it does whether the wheel stops on the red or on the black."

With these sentences Mr. Charles M. Harger begins a strong article in the June "Review of Reviews," under the title here used. Continuing, this writer observes:

"A new sort of education has been in progress in the West. Each morning practically every farmer east of a line drawn north and south, midway east and west, through Kansas, Nebraska and the Dakotas, receives his mail by rural carrier. Daily papers are carried in great bundles, and the reading habit has spread enormously throughout the Mississippi Valley. The Westerner is in touch with the world's events up to the evening of the preceding day—which is a far different thing from being a week or more behind the times. The farmer knows the meaning of financial terms better than he did in the days of arguments on the 'per capita' and the 'heaven-born ratio.' He has a bank account of his own. Hundreds of country banks are owned by farmers who have placed their savings in bank stock in order to have a profitable income."

The Western family is still distrustful of Eastern finance, Mr. Harger declares. On this point we quote again:

"The bank deposits of the West were at their high-water mark this spring. This was the explanation of a country banker out in central Nebraska: 'Out of my bank last Saturday was checked $115,000. It went to pay for land and to invest in various enterprises. Yet in the week we gained $16,000 in deposits, meaning that outsiders brought approximately $130,000 to the town. That was exceptional; it being the first of March, moving time was responsible. But the tendency for farm savings to come into the West is increasing. The farmers of Iowa, Illinois and states of that section have been buyers of securities of late years. They have invested in commercial paper of the better sort, and in the stocks of Western railroads. The shake-up in Wall Street has scared them, and they are unloading stocks and buying land or farm mortgages. This, in my opinion, is responsible for a great deal of the land craze now so exciting our section.'

"'Will it increase, or has it reached the maximum?'

"'It may increase—but we are selling our land. The bank has taken in a great deal of land, it standing us about forty dollars an acre. On that basis we are netting from rents about eight per cent. Now land has gone to seventy to seventy-five dollars an acre, yet the rents are no higher nor the crops any larger. Consequently we are netting only a little over four per cent. I would rather take a five-per-cent mortgage on the land than one third of the crops. As I said, the land values are bringing down the interest return—but the dissatisfaction with Eastern financial ideas, as the West understands them, is turning money this way, and is likely to continue to do so for a time.'"

Self-Supporting Women in the Role of Independent Farmers

By Waldon Fawcett

WHILE farming is the one great industry which is secure for all time, unchanged and unchanging as to general conditions, there are, as in other fields of human endeavor, new tendencies cropping out now and then which bring about changes of policy and induce a state of affairs markedly in contrast to that which prevailed a generation before. Just at present the most important new influence in the agricultural world is contributed by the entrance of considerable numbers of American women who are taking up farming, in one or another of its phases, as a means of self-support.

Of course, the women of the rural regions have had a hand in farm work from the earliest days of the republic. To be sure, our American ideas of woman's sphere would not allow the fair sex to perform the arduous work that is expected of them in many European countries, where women even act as beasts of burden; but for all that the wives and daughters of the average American farmer have been among his best helpers not only through performance of domestic duties, but also by aiding in the lighter forms of farm work.

Under the old conditions, however, direct participation in the business on the part of the farm women was confined, in so far as revenue was concerned, to looking after the hens and marketing eggs and to churning and disposing of the butter. Of late years, though, a constantly increasing number of women have graduated into the ranks of independent farmers, owning or leasing farms on their own responsibility and personally superintending every detail, from the purchase of the seeds to the marketing of the produce.

The pioneers among the independent women farmers, and many who have later joined the ranks, are the widows of practical farmers who felt that they could do better to continue to run the farms than they could hope to do by selling the homesteads and engaging in some new business of which they were almost wholly ignorant. However, these women who have been virtually shoved into independent farming through force of circumstances have been joined in many localities by other women, who have migrated from cities and towns, and have set about tilling the soil or raising poultry or stock simply because they were convinced that the work would prove more congenial than any of the other occupations open to women.

Some of the women who have moved from populous communities to take up agricultural work on their own hook have been merely answering the "back to the farm" call that comes sooner or later to almost every man or woman who has been born and raised on a farm and then wandered cityward in search of wealth or amusement. These country-bred folk have an instinctive knowledge of many of the unwritten laws of farming that comes back to them once they get in the swing of rural routine, and which, naturally, helps them immensely.

In addition to the two classes of women farmers above mentioned, there is a third class, made up of women who though city born and city bred are so anxious to earn their own way in the world that they plunge into farming with little or no experience. The odd part of it, too, in the eyes of the old-time rural residents, is that a goodly number of these "greenhorns" stick to the work, and ultimately meet with fair success. Incidentally it may be mentioned that whereas everybody realizes that you cannot learn farming wholly from books, there is no doubt but that the numerous publications of the United States Department of Agriculture and the state agricultural experiment stations on every possible subject connected with farm life have helped the twentieth-century women farmers over many a rough place that without such guidance would have spelled discouragement, if not failure.

With the exception of those women who are content with mere garden patches comparatively few of the feminine farmers attempt to do the heaviest of the manual labor in connection with farming. They hire male help for such operations, although the far-sighted woman farmer makes it a point to qualify herself to perform in an emergency as many as possible of the details of farm labor, and many a crop has been saved by such knowledge when there was a shortage of hired help or the unexpected happened in one form or another.

In answer to those persons who are skeptical as to woman's possession of the requisite executive ability for the management of masculine farm workers, there may be cited the notably successful conduct of certain monster farms in Texas which for some years past have been owned and managed by women. The most famous of these, perhaps, is the great ranch the management of which Mrs. Harriet M. King took over when her husband died in 1885. This gigantic farm comprises one and one half million acres, and there have frequently been on its pay rolls at one time more than two thousand employees.

A FAIR FARMER

MAKING MATS OF CORN HUSKS

FARMER GIRLS AND THEIR PET STOCK

However, the female "bonanza farmers" are not taken as models by many of the women who have of late years taken up agricultural pursuits. Most of the latter are not only content with, but actually prefer, small farms or holdings of moderate size—acreage that does not make the labor problem a constant menace to he owner's peace of mind. For those who start out, as many of them do, as poultry raisers or in some other special line, the small place has many advantages. Then there are other considerations that appeal to women entering the farming occupation. For instance, it is usually easier to find a small farm for rent than it is to locate a large one open to lease, and, as has been explained, the average woman farmer has a preference for a small tract. Then, too, the woman who is content with a small farm can in nine cases out of ten locate within easy reach of some city or large town, and this proximity to shops and markets means more to a woman than it would to a man.

As experienced hands realize, there is no greater fallacy than that anybody can make a success as a poultry raiser; but there is no doubt but that once a woman has the requisite foundation of experience, she can, thanks to the introduction of incubators, brooders and other modern "aids," together with present-day facilities for taking care of fresh eggs, accomplish far more in a given time than could her grandmother, who followed the old, time-consuming methods of days gone by. Moreover, the poultry business has the advantage that even though the first investment be modest, the profits will be proportionately large.

Another profitable occupation that apparently appeals to a large proportion of the women farmers is bee keeping. With sales of honey averaging perhaps twenty dollars a colony of bees, and with a very elastic limit as to the number of colonies that can be satisfactorily handled on a farm, it goes without saying that this is not to be lightly regarded as a source of revenue, particularly when conducted in conjunction with other forms of farm work. Moreover, as in poultry raising, various inventions have simplified the process of manipulation, and, quite as important to the woman bee keeper, have reduced to a minimum the danger of stings during the harvesting of the honey.

It is seldom that the resourceful and energetic woman farmer places sole dependence for her income upon any one occupation, such as poultry raising or bee culture. On the sound theory that in a vocation so speculative as farming there should be a diversity of interests, she casts about for "side lines" that can be made to share the responsibility for material welfare. This quest has resulted in the development of a number of new farm industries. That such novelties thrive is proven by the fact that a number of women in various sections of the country now supplement their incomes by the manufacture of mats and other household articles from corn stalks. In many of our American cities housewives have developed a fad for the purchase of such quaint souvenirs from the farms. Then, too, there is scarcely a farming community in the land but that has one or more women inhabitants who gain a living by making old-fashioned rag carpet and rag-carpet rugs, or by their knack for preserving the home flavor in jams and jellies, even though they turn these sweets out in considerable quantities.

The varied activities embraced in the term "pet-stock raising" afford surprising opportunities for money making to those who will take up the work in earnest. Not a few women farmers have already learned this to their profit, and a particularly appealing phase of the matter is that where there are sons and daughters or young brothers and sisters in the household the duties of pet-stock raising can be left largely to these young people, while the elders concern themselves with other pursuits. The breeding of blooded dogs, canaries and Angora kittens are perhaps the best-known branches of this business, but there is likewise a steady market for rabbits, guinea pigs, etc.; and some women have developed wholly unique enterprises, as, for instance, the "goldfish farm" conducted by two quick-witted New Jersey

[CONCLUDED ON PAGE 13]

The New Men

BY WILL PAYNE

An Interesting Story of Modern Newspaper Life, in Two Parts

Miss James read in the morning papers that "The Evening Mail" had been sold. G. M. Morser would succeed Rutherford Bright as managing editor, the papers said, and Edward Smith would succeed T. G. Pease as city editor. With a new proprietor there was to be a new policy.

All this to Miss James was as though she had waked up to discover that some body had come along in the night and stood her nice little world on its head, walking off and leaving everything upside down.

It was Mr. Bright who had accepted the little things she submitted by mail, who selected the caption "From a Girl's Point of View" and made the little things a regular triweekly feature of the editorial page. It was Mr. Bright who offered her a position on the staff, giving her some editorial chores to do in addition to the "Girl's Point of View." She had her tremors and reluctance about definitely incorporating herself into journalism. She supposed a newspaper office to be something essentially masculine, rough and rather unkempt. But the eighteen dollars a week which Mr. Bright offered was a big temptation. She ought to be doing something. Mr. Bright himself was reassuring. She took the position—that was a month ago. She was given a delightful little cubby hole of a room all by herself under the eaves. Mr. Bright was as pleasant and considerate as he could be. So was Mr. Pease, the city editor. It was a success beyond her highest expectation. But now—over night, without a whisper of warning, somebody had upset it all. She was handed over, along with other chattles, to a company of strange, new men, especially to one G. M. Morser—what an ugly, repellent name!

From the noisy street she looked up at the façade of the "Mail" Building—a tall, narrow wedge of terra-cotta. Oh, why couldn't they have let it alone! The elevator lifted her a hundred feet to the editorial rooms. She crossed the large room where the local staff worked without lifting her eyes, hastening to her cubby hole under the eaves. There were no flowers for the vase on her desk. She had not the heart to bring them. She pushed the door partly to. She would have liked to lock and barricade it against the hostile swarm outside—against these strange, new men, the Huns and Vandals who had overrun her Rome in a night. She had come to feel so snug and at home in this little den.

Nine o'clock. Nobody had been near her. She called up all her poor stock of courage, took the thin bundle of manuscript and her life in her hands and crossed the big room to the den in the corner whose door bore the legend "Managing Editor." There was even a new office boy on the bench beside the door—a red-headed one. On the bench, too, was a young man whose greenish suit and new white felt hat she vaguely noticed. The door was open. She stepped in. The big man in his shirt sleeves, humped over the desk, lifted his face inquiringly at the intrusion.

Miss James had time to think that he was the ugliest man, with the ugliest face, she had ever seen. He was large and fat. Humped over the desk in that way his shoulders looked elephantine. His face, she thought, might as well have been an elephant's, too. It was big and broad and fat, like the rest of him. Close-clipped, coarse hair of a neutral color grew over his round head. His forehead was low and extremely wide, with a bump at each side. The big round glasses made his popping pale blue eyes more ridiculous, in the same way that the tiny, adolescent brownish mustache, a mere line above his large mouth, emphasized his protruding lips.

"I am Miss James," she said, and offered the dozen neat sheets of manuscript, written in her even, graceful hand.

Morser put out an immense fat paw—a sort of digited ham—at the same time breathing noisily through his broad nostrils.

"Oh, you write that girl stuff," he said, the title line on the manuscript informing him.

"Yes, sir," she replied, faintly. She had been proud of her contributions.

Morser had intended to discharge the person who wrote the "girl stuff." Looking up through the round glasses, the manuscript in his hand, he took stock of that person—a slim, trim young person, about twenty, he judged, in a snug black dress, with soft black eyes and a good deal of hair of a dull, dead black, that came down in a wave on each side of her white brow. He noticed particularly the soft eyes and red lips. There was something unusual, flower-like, delicately abloom about this young person.

"Do you do anything else?" he asked, with an implication from which she derived no fresh hope.

"I get up that column of 'Odds and Ends' from the exchanges," she said. "Mr. Bright used to print it twice a week."

"I know. That's pretty good," said Morser. Still taking stock of her, he considered rapidly, "Ever try reporting?"

"Reporting? No, sir." The suggestion took her breath a little.

"Ought to try reporting if you're going to get on in newspaper work. The rest don't amount to much. Would you like to try it?"

"Why—I suppose—I could try," she answered, doubtfully and with a heavy heart, much as though he had suggested that she try prize fighting.

"Clarke!" he shouted.

The young man in the greenish suit and white hat came nimbly into the room.

"You're to do the Leinbargar trial this morning. Miss"—the name escaped him—"this young lady is going to report it. Take her over with you and show her where to go. Jimmy!"

"Yezzur!" said the red-headed boy, as he bounded in.

"Get this young lady a star." As the boy bounded out Morser went on without pause, addressing Miss James. "We won't depend on you much for the news. You're not up to that yet. You know what the case is. Leinbargar's sister is to be on the stand this morning. Write just what interests you—the features, the scenes. Try to make a picture of it. Of course, if the judge should drop dead or the court house should fall over you'd naturally try to get around to a telephone some time and let us know. But you can let the ordinary news slide. See if you can't write something interesting. And tell Mr. Smith, next door, that you're going to do it for us."

"The big man in his shirt sleeves, humped over the desk, lifted his face inquiringly at the intrusion"

Miss James had an impression of Morser tossing her cherished "girl stuff" to a corner of his desk and humping his big shoulders over his work. The boy thrust a star into her nerveless hand—a nickel-plated affair like the policeman's badge of authority, but smaller. She found herself at the door of the next den saying to the young man at the desk, "Mr. Morser has sent me to the Leinbarger trial."

"All right," said the young man. He frowned at her a little as he looked up. "I'll send a boy for your copy at eleven o'clock," he added.

Then she was going down in the elevator with the young man in the white hat, her star grasped in her hand.

It came to her that the young man had some large squares of white cardboard under his arm and an ink bottle in his hand; that he was rather tall and thin, with a smooth, nervous-looking face of dark complexion. She had time to notice the way his dark little mustache curled up defiantly at the ends, and his very white teeth. She saw that his manner toward her was deferential, gallant, sympathetic, and that at the same time he was quietly amused over her bewilderment.

"Your first assignment?" he asked, when they were out in the street; and his way of asking made it as grateful as the sound of familiar words in a land of strange tongues.

"Yes," she said, quickly, like a grasp for help.

He laughed. "How did the old man strike you?"

She laughed, too, nervously. "Well, he didn't actually strike me, you know. But—I know what it is to feel like two cents."

"Yes!" The confirmation of his suspicion seemed to delight him immensely. "We're all two cents with Morser! I worked under him when he was assistant city editor of the 'Clarion.' He was night editor over there, you know, when the new people got him for the 'Mail.' He's a terror at driving things, and always just so grumpy. But you'll find him square when you know him. And he can pull the old paper up if anybody can."

She only half heard him. Her nerves were too tangled over this dread venture of reporting. She had been so snug and at home before. Now—this Leinbargar trial loomed as a horror. It was murder. The prisoner, a man of some wealth, was accused of poisoning his wife—altogether a thing raw, sinister, frightful, as though a door of that sweet, secure upper world in which she lived were abruptly opened, revealing just at one's hand a region horrid, demoniacal, bloody, writhing with nameless passions and crimes. The young woman, on the way to report the trial, had an almost bodily sense of being projected through the door into the region of crimes.

Clarke found a seat for her and one for himself at the end of a long table beneath the high, altar-like desk at which the judge sat. The tiers of seats for spectators were already full, and bailiffs guarded the doors. The wide space within the bar was filling up with lawyers and witnesses. A bailiff brought in the prisoner. The jury filed through to its box.

"That's Leinbarger's sister," said Clarke, under his breath, indicating a slim, youngish woman whose pale, drawn, suffering face seemed to have looked too long at the horror. Clarke was already busy with pen and ink rapidly filling up one of the cardboard squares with a sketch of this woman, who was to go on the stand.

Abruptly the head and bust of the judge appeared above the desk. The sharp strokes of the gavel sounded. The buzzing confusion of sounds in the high room ceased as though it had been turned off. A lawyer arose. Miss James' heart fluttered up wildly, and sank. The drama which might be tragedy was about to begin.

The heavy voice of the lawyer and the timorous tones of the woman were the only sounds in the room, save now and then a swift scratch of Clarke's pen or the rustle of paper as the dozen newspaper reporters and artists at the long table busily made their copy for the waiting presses. The reporter for the "Mail" was confused and half in despair. She couldn't see anything to write about. She made a little sketch of the woman on the stand, whose tones were growing in firmness and nervous intensity as the lawyer pressed her. She was the chief witness for the defense, and the state was cross-examining. But it was all about trivial details. Presently Clarke, without a word, swiftly gathered up his sketches and slipped noiselessly away. Miss James sent a frightened glance after his retreating figure. She felt alone in the enemy's hands. She kept on trying to make a little word-picture of the room and the woman—this frail, colorless little creature on the stand, with a brother's life hanging, perhaps, upon her words.

Gradually the tone changed. They were getting to the crux of the testimony now—her statement of Leinbarger's movements on the evening of the murder. The state's attorney pressed her hard, fired questions at her, insisted upon categorical answers, set swift, verbal snares for her. Twice his deft questions tripped her. The spectators leaned forward, breathless. There was not a sound save the heavy tones of the man and the high, tense, slightly shaking voice of the woman. The gallows was ready, the noose depending. To Miss James' view the state's attorney presented a pair of sturdy legs, a broad, black-clothed back, a short, columnar neck, a powerful head covered with curly dark hair, the motion of a big arm and hand gesticulating at the witness directly before him. The woman sat far back in the chair, as though she were trying to escape him. Her frail little hands tightly clutched the arms of the chair. Her wide eyes were fixed on the prosecutor's face with a kind of fascination. One could see that she had summoned every atom of power in her weak body. It had all the effect of a chase for life, of a hare running before hounds. The questions came uninterruptedly, mercilessly. She sought to avoid the categorical answer which the attorney demanded. He appealed to the court. Miss James' nerves ached with suspense and pity. The court gave her no quarter. She must answer. But at the question once more she evaded.

"Yes or no, now! Answer yes or no!" the man thundered.

"I—" she began.

"No! no! No 'I's!' Yes or no! Answer yes or no!"

"No! no! no!" the woman cried, flung her hands to her face and burst into an uncontrollable passion of tears.

She had answered for her brother. But that was not what Miss James was thinking about. Her pencil was moving swiftly across the pad of paper. But she was scarcely thinking of the "Mail" as she wrote. She thrilled and tingled with indignation. Her cheeks were pink and her eyes sparkled. The state's attorney was wiping his sweaty face, discomfited and unhappy. Miss James threw him a glance of scorn and wrath. Ah, the great, big brute!

At three o'clock Miss James was again in her cubby hole under the eaves, looking down at one of the advance copies of the five-o'clock edition, wet from the press, which an office boy had just handed around. The report of the Leinbarger trial led the paper. There was a little of her sketch of Leinbarger's sister, and some of her description of the scene as court opened. But there was not a word of what she had written about the cross-examination. The "bureau" report said that the witness gave way to tears at one time, and was allowed ten minutes to rest and compose her nerves.

The red-headed boy appeared at the door. "Mr. Morser wants to see you," he said.

She followed the boy to the managing editor's office dully. She supposed that she had quite failed. Probably she would be discharged. But that was only a sort of logical conclusion to the worst day she had ever seen.

Morser swung around sidewise to the desk, facing her, as she dropped weakly into the chair at the end of the desk. She saw that her unused copy lay before him.

"What was your idea in ripping the state's attorney up the back and roasting the life out of the judge?" he asked, calmly. Leaning back in the chair, his popping eyes coolly fixed upon her through the ridiculous round glasses, he was the picture of phlegm. Her suffering nerves acutely felt the impress of his heavy, stolid force like a crushing weight.

"I thought—it seemed to me he was cruel to that woman," she began, ineffectually. "The man is her brother. She is innocent. He made her suffer so."

"Well, you didn't suppose, did you, that a murder trial could be conducted like a young ladies' sewing circle?" he asked, with a kind of ponderous surprise faintly touched with sarcasm.

"I don't know; it was my first experience," she answered, weakly. She was looking at him and wondering if he comprehended how much he was hurting her.

"BUT you ought to know," he persisted. "It wasn't your first attempt at being alive. You ought to think—to get the proportion and relation of things. Can't you see that the state's attorney and the judge were simply doing their duty? You must think. Even a reporter ought to think. You must try to cultivate the habit in order to make a good reporter."

"I don't wish to make a good reporter! I don't wish to make any kind of a reporter!" she burst out. She felt her nerves giving way.

"Why, yes you do," said Morser, calmly. "You can write all right. What do you expect to do?"

"I don't know." She said it all in a breath. A sudden spray of tears dimmed the dark eyes that flashed at him. "Something respectable! It was abominable! He bullied that helpless woman! He browbeat her! It was detestable! I despise him! I despise the judge! I despise your paper!" She bent her face to her hands.

"Oh, come now! Come now!" he growled, with singular agitation. "You're all right. Don't take it that way! Don't you see I'm just trying to tell you! Lord love you!"

"I don't want you to tell—" her voice broke in a sob.

"Come! Come! Lord love you! You're all right! Why, it was a good piece of writing. It was a bully roast, only it wasn't aimed right. I like a good roaster. Why, I'll give you plenty of chance if roasting's your line. You can take a wallop at most anybody in sight, from the President of the United States down, any day!"

His attempts to comfort her, the knowledge that he was treating her like a baby, most of all the humiliation of having given way to tears, completed her misery.

"You're the meanest man I ever saw!" she sobbed. "You have the advantage! You torment me!"

"Oh, come now! Think it over! Get used to thinking!" he growled. "You're all right! We want you here. You're upset. Trot along home and rest up. Come around in the morning. Don't say any more. Trot home and rest."

She got up and whirled away from him. Clarke was standing by the door, and she gave a swift, involuntary upward glance, her dimmed moist eyes mutely meeting his. It was the merest flash between them, but it inscrutably comforted her. She understood at once that he had heard what passed between her and Morser. His brows were drawn together in an angry scowl. He was chewing the curly end of his mustache. Someway this chivalrous anger in her behalf lightened the miseries of the day. She knew as well as if he had told her that he was aching to go in and have it out with Morser.

Clarke entered the den, and found that Morser had got up. The managing editor was standing at the window, looking out at a jumbled wilderness of smoky roofs, presenting the great rounded bulk of his back to Clarke. There was something about this figure, so ridiculously huge and human, that it deflected the artist's thought.

MORSER turned around, frowning grumpily and breathing noisily through his wide nostrils.

"Just like that sucker, Bright!" he complained. "He is a sucker if there ever was one! Look at it! Goes and fills up the office with women. If I fire 'em they think I'm a brute! If I take 'em in hand and try to yank 'em into shape so they'll be some good on earth they think I'm a brute, too! Huh! She's a clever enough woman, too—if she had any sense! I suppose it was a sort of pink tea with Bright! His paper used to look like it! Guess she's got herself to take care of, too, with only a mother! I'd rather been put through a wringer than have her cry like that."

When Clarke went out Morser turned to the window again. "I wonder if she'll come back?" he said.

[TO BE CONCLUDED NEXT ISSUE]

The Little Brown Book of Miss Emily

BY L. M. MONTGOMERY

WHEN old Miss Emily Leith died Don and I bought Echo Lodge from her nephew. I had had a fancy for Echo Lodge through all the six years we had lived beside it. It was such a quaint, pretty old house, with low eaves and dormer windows; lovely firs and poplars grew thickly all around it, with gaps in them to let in a glimpse of sunset or a moonrise sheen on the sea; and there was an old box-bordered garden with prim, shady walks and dear, unworldly, sweet-scented posies.

I must frankly confess that we had never liked Miss Emily. She was fussy and meddlesome; she liked to poke a finger into every one's pie, and she was not at all tactful. She had a sarcastic tongue, and was rather bitter against young folks and their love affairs. We thought that it was because she had never had a lover of her own. Somehow, we could never think of lovers in connection with Miss Emily. She was short and stout and pudgy, with a face so round and fat and red that it seemed quite featureless; and her hair was scanty and gray. She walked with a waddle and was always rather short of breath. It was impossible to believe that Miss Emily had ever been young; yet old Mr. Murray, who was her sole contemporary in Langdon, not only expected us to believe it, but assured us that she had been very pretty.

We had been living for four beautiful months at Echo Lodge before it occurred to me to give the garret an overhauling. I went up and explored it one stormy autumn afternoon when the rain was thudding against the funny little hooded windows and the wind was whistling down the chimneys and among the great swinging boughs of the firs. The garret was just as Miss Emily had left it, full of boxes and old broken furniture. I found nothing of any interest until I came to a shabby little black horsehair trunk, all studded with brass nails, back under the eaves near one of the windows. In it there was a quaint, pretty, old-fashioned gown, not at all faded, made of muslin with a little blue flower in it, and quite fragrant with some faint, spicy perfume. Then there was a sash, and a yellowed white feather fan with carved ivory sticks, and a box full of withered flowers. Down underneath all I found a little brown book.

It was small and thin, like a girl's exercise book, with covers of brown cardboard and leaves that had once been blue and pink, but were now quite faded, and stained in places. On the fly leaf was written, in a very delicate hand, "Emily Margaret Leith," and the same writing covered the first few pages of the book. The rest were not written on at all.

I read the first page, and then I went and called Don and made him come up to the garret, although he was very comfortable in his "den" in his slippers and smoking jacket, and did not want to leave it. We sat down on the broad ledge of the west dormer and read the contents of the brown book together.

"June 15, 18—

"I came to-day to spend the summer with Aunt Janet at Echo Lodge. It is so lovely here. The spruces and the poplars are so pretty, and Langdon is a lovely place . . . . ever so much nicer than at home on the farm. I have no cows to milk here, nor pigs to feed, and the housework seems just like play. Aunt Janet has given me such a lovely blue muslin dress, and I am to have it made to wear to a garden party next week. I never had a muslin dress before . . . . nothing but ugly prints and stiff alpacas. I wish we were rich like Aunt Janet. Aunt Janet laughed when I said this, and declared she would give all her wealth for my youth and beauty and lightheartedness. I am only eighteen and I know I am very merry; but I wonder if I am really pretty. It seems to me that I am when I look in Aunt Janet's beautiful mirrors. They make me look very different from the old cracked one in my room at home, which always twisted my face and turned me green. But Aunt Janet spoiled her compliment by telling me I look exactly as she did at my age. If I thought I should ever look like Aunt Janet does now I don't know what I should do. She is so fat and funny."

"June 29.

"Last week I met Paul Osborne at the garden party. He is a young artist who is boarding quite near here, and he is the handsomest man I have ever seen . . . . very tall and slender, with dreamy dark eyes and a pale intellectual face. I have not been able to keep from thinking about him ever since, and to-day he came over here and asked if he might paint me. I felt very much flattered and so pleased when Aunt Janet gave her permission. He says he wants to paint me as 'Spring,' standing under the poplars where a fine rain of sunshine falls through. I am to wear my blue muslin gown, with a wreath of flowers on my hair. He says I have such beautiful hair. He has never seen any of such a real pale gold. Somehow it seems prettier than ever to me since he praised it.

"I had a letter from home to-day. Mother says the blue hen has stolen her nest and come off with fourteen chickens, and that father has sold the little spotted calf. Somehow those matters do not interest me as they did."

"July 9.

"The picture is coming on very well, Mr. Osborne says. I know he is making me far too pretty, although he persists in saying he can't do me justice. He is going to send it to some great exhibition when finished, but he says he will make a little water-color copy for me.

"He comes over every day to paint, and we talk a great deal, and he reads me lovely things out of his books. I don't understand them all, but I try to, and he explains them so nicely and is very patient with my stupidity. And he says any one with my eyes and hair and coloring does not need to be clever. He says I have the sweetest, merriest laugh in the world. But I will not write down all the compliments he has paid me. I dare say he does not mean them at all.

"In the evenings we stroll among the spruces or sit in the garden on the old stone bench under the acacia tree. Sometimes we do not talk at all, but I never find the time long. Indeed, the minutes just seem to fly . . . . and then the moon will come up round and red through the poplars and Paul will sigh and say that he supposes it is time for him to go."

"July 24.

"I am so happy. I am frightened at my happiness. Oh, I did not think life could ever be so beautiful for me as it is!

"Paul loves me! He told me so tonight as we walked in the spruce alley and watched the sunset at its western end; and he asked me to be his wife. I have cared for him ever since I met him, but I am afraid I am not clever and well educated enough for a wife for Paul. Because, of course, I am really only an ignorant little country girl and have lived all my life on a farm. Why, my hands are quite rough yet from all the work I have done. But Paul just laughed when I said so, and took my hands and kissed them. Then he looked into my eyes and kissed me and laughed because I couldn't hide from him how much I loved him.

"We are to be married next spring, and Paul says he will take me to Europe. That will be very nice, but nothing matters much as long as I am with him. He often sings an old song:

"Oh, were thou in the cauld blast
On yonder lea, on yonder lea,
My plaidie to the angry airt
Wad shelter thee, wad shelter thee.
And were I in the wildest waste
Sae bleak and bare, sae bleak and bare,
That desert were a paradise
If thou wert there, if thou wert there."

and that is just the way I feel.

"Paul's people are very wealthy, and his mother and sisters are very fashionable. I am frightened of them, but I did not tell Paul so, because I think it would hurt him, and oh, I would not do that for the world.

"There is nothing I would not suffer if it would do him any good. I never thought any one could feel so. I used to think if I loved anybody I would want him to do everything for me and wait on me as if I were a princess. But that is not the way it is at all. Love makes you very humble, and you want to do everything yourself for the one you love."

"August 10.

"Paul went away to-day. Oh, it is so terrible! I don't know how I can bear to live even for a little while without him. But this is silly of me, because I know he has to go, and he will write often and will come to see me often. But still it is so lonesome. I didn't cry when he went away, because I wanted him to remember me smiling in the way he liked best, but I have been crying ever since, and I cannot stop, no matter how hard I try. We have had such a beautiful fortnight. Every day seemed dearer and happier than the last, and now it is ended, and I feel as if it could never be the same again. Oh, I am very foolish . . . . but I love him so dearly, and if I were to lose his love I know I would die."

"August 17.

"I think my heart is dead. But no, it can't be, for it aches too much.

"Paul's mother came here to see me to-day. She was not angry or disagreeable. I would not have been so frightened of her if she had been. As it was, I felt that I could not say a word. She is very beautiful and stately and wonderful, with a low cold voice and proud dark eyes. Her face is like Paul's, but without the lovableness.

"She talked to me for a long time, and she said terrible things . . . . terrible, because I knew they were all true. I seemed to see everything through her eyes. She said that Paul was infatuated with my youth and beauty, but that it would not last, and what else had I to give him? She said Paul must marry a woman of his own rank in life who could do honor to his name and position. She said that he was very talented, and had the promise of a great career open to him, but that if he married me it would ruin my life.

"I saw it all, just as she explained it out, and I told her at last that I would not marry Paul and she might tell him so. But she smiled and said I must tell him myself, because he would not believe any one else. I could have begged her to spare me that, but I knew it would be of no use. I do not think she has any pity or mercy for any one. Besides, what she said was quite true.

"When she thanked me for being so 'reasonable,' I told her I was not doing it to please her, but for Paul's sake, because I would not spoil his life, and that I would always hate her. She smiled again and went away.

"Oh, how can I bear it? I did not know any one could suffer like this!"

"August 18.

"I have done it. I wrote to Paul to-day. I knew I must tell him in a letter, because I could never make him believe it face to face. I was afraid I could not do it even by letter. I suppose a clever woman easily could, but I am so stupid. I wrote a great many letters and tore them up, because they were not convincing . . . . at least I felt sure they would not have convinced me if I had been Paul. At last I got one that I thought would do. I knew I must make it seem as if I was very heartless and frivolous or he would never believe. I spelled some words wrong and put in some mistakes of grammar on purpose. I told him I had been only flirting with him, and that I had another fellow at home I liked better. I said 'fellow,' because I knew it would disgust him. I said that it was only because he was rich that I had been tempted to marry him.

"I thought my heart would break when I was writing those dreadful falsehoods. But it was for his sake, because I must not spoil his life. His mother told me I would be a millstone around his neck. I love Paul so much that I would do anything rather than that. It would be easy to die for him, but I don't see how I can go on living.

"I think my letter will convince Paul."

I suppose it convinced Paul, because there was no further entry in the little brown book. When we had finished it, the tears were running down my face and even Don . . . . but Don denies it.

"Poor Miss Emily," he said.

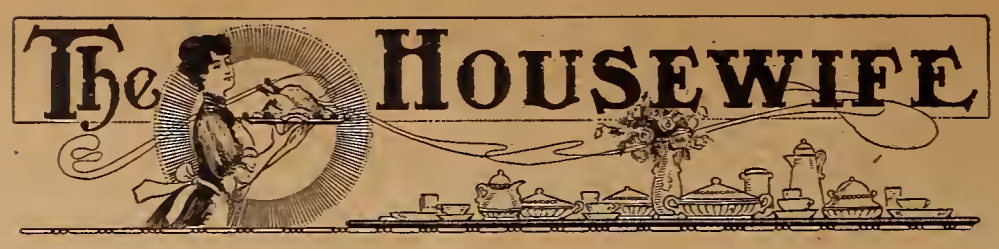
"I'm so sorry I ever thought her funny and meddlesome," I sobbed. "She was good and strong and brave. I could never have been as unselfish as she was."

At the back of the little brown book we found a faded water-color sketch of a young girl . . . . such a slim, beautiful little thing with big blue eyes and lovely, long, rippling golden hair. Paul Osborne's name was written in faded ink across the corner.

We put everything reverently back . . . . the dress and the sash and the little brown book . . . . and shut the lid. Then we sat for a long time in the dormer window in silence and thought of many things, till the rainy twilight came down and blotted out the world.

"The outward, wayward life we see,
The hidden springs we may not know,"

quoted Don softly, as we went downstairs together.



Apologies

BY HILDA RICHMOND

DID you ever visit some good housewife in the country and eat a first-class dinner when the hostess apologized for each separate article of food so many times you can't remember the sum of them all? Of course you did! We all have, and will again, for the custom still prevails. In cities it is considered out of date to urge guests to eat heartily and to make excuses for the food served, but the style has not extended far beyond the larger towns at present. It is to be hoped it will soon, for it would be a real relief and pleasure to visit many people and not have to contradict the hostess continually.

"My bread isn't as good as I usually make," said a hostess to some friends. "Somehow it—" Of course that was the signal for each guest to protest. The bread was fine and white and delicious, and the lady of the house knew it, but she had gotten into the habit

CAULIFLOWER IN CASES—Separate cooked cauliflower into small flowerets; add one tablespoonful of flour mixed with one tablespoonful of butter to one cupful of hot milk; cook till creamy; season with pepper and salt; fill paper cases with the mixture, as shown in illustration; sprinkle fine egg yolk over tops; place egg-white rings and watercress on each; serve hot.

of making excuses, and did not know how many times she did apologize during the meal. After the bread the fine ham came in for its share of excuses, and so on through the meal. It may have been impolite, but one guest mentally counted up, and found that twenty times during that one dinner the guests had to come to the rescue and declare everything perfect in its way. Some things she said were total failures and some only passably good, but she would not allow a single dish to escape her general faultfinding.

Now, it isn't pleasant to argue at the table, but that is what the guests had to do. The pleasant stream of neighborly conversation was broken into time and again by such exclamations as these: "Do take some more of the pear preserves. They look dark, but maybe you can eat them. Won't you have some more gravy? I don't remember the time when my gravy was as lumpy as it is to-day. Whenever I set out to have things nice, they always fail." You all know what they say without having the statements repeated.

Many a good woman would be shocked to have her apologies called by their right name. She doesn't mean to tell an untruth, but what else can it be when she refers to the bread as "miserable" when it is sweet and good? If the bread had really been a failure she would have made biscuits or waffles rather than put it on the table, and the guests know it. Some wise people say apologies are bids for compliments; but in some cases that will not hold good, since country housekeepers always have their food praised without asking for it, if they are good cooks. It isn't necessary to tell a lie, in plain English, to hear that your cake is light and your doughnuts excellent. People are generous with their praise for country cooking.

And cooking isn't the only thing the housekeepers feel called upon to make excuses for. Often the children of the family are made bashful and timid by constantly hearing their weak points held up before company. It may be the mother thinks her children far superior to those of her neighbors, as she almost always does, but she cannot refrain from mentioning that Nellie is looking very odd because her front teeth have come out, and that Karl forgets his manners whenever there is company. Nellie may be painfully conscious of her "gap" where teeth ought to be, and Karl may be trying to remember which hand he is to offer to guests, but the unkind apologies make them stammer and blush

TOMATOES STUFFED WITH MACARONI—Select a number of fresh ripe tomatoes that are smooth and firm; scoop out the seeds, and fill cavities with cooked macaroni; add salt, pepper, a bit of butter, a little Parmesan cheese, and bake thirty minutes in a hot oven.

and long to run from the room. Children aren't perfect, by any manner of means; but neither are parents, so give them half a chance, without worrying them in public.

If the house "looks like distress" the visitors will probably see it without dilating on the torn-up condition. If excuses were only made when occasion demanded, they would be few and far between as compared with the wholesale flood of them now in vogue. The people who never had their own houses in confusion some time or other are so scarce that you need never expect to entertain any of them. Every family has its share of sickness and extra work and general disorder, and every one knows what housekeeping troubles are.

So let us drop all the excuse making and simply have a good time when we entertain. There are so many pleasant things to talk about, that it isn't worth while to waste time on apologies. Even the weather is a better subject for conversation than untruths. Let us give our friends a hearty welcome, as good a dinner as our time and strength and purse can afford, a chance to enjoy the meals without having to dispute with us continually, and then consider our duty done. Every one will have a better time, and you may be able to set a good example in your neighborhood, that will help banish the dreadful habit of making apologies for everything.

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For the Good Cook

MARYLAND CORN GEMS—Cream one half cupful of butter, and add gradually, while beating constantly, three fourths of a cupful of sugar; then add three eggs, well beaten, and one and one half cupfuls of milk. Mix and sift two cupfuls of cornmeal, one cupful of flour, five teaspoonfuls of baking powder and one teaspoonful of salt. Combine the mixture and add one half cupful of currants. Bake in buttered individual tins in a moderate oven from twenty to twenty-five minutes.

CAULIFLOWER WITH WHITE SAUCE—Carefully wash your cauliflowers, and boil them until tender in water with salt and one tablespoonful of butter. When done, lay them in a dish, and arrange the leaves in such a manner as will give them the appearance of one large cauliflower. Pour over them a white sauce, made as follows: Rub one fourth of a pound of fresh butter with one tablespoonful of flour, a little salt and pepper and one small cupful of warm water. Set it over the fire until it is well mixed, but do not let it boil. Remove from the fire, and add the juice of a lemon, a little chopped parsley and a little grated nutmeg. If a thick sauce is preferred, add the beaten yolk of an egg.

COURT PUDDING—Boil one cupful of rice in slightly salted water until tender; drain, pack into a buttered mold, leaving a well in center. Wash one quart of strawberries, add one cupful of sugar; soak one half box of gelatine in one half cupful of boiling water, add to fruit, stirring well until it thickens, then add whip from two cupfuls of thick cream, turn into rice mold, and set in cool place until it becomes firm. Invert onto a dish and surround with whipped cream.

CANNING RHUBARB—Put your cans and rhubarb in cold water, then peel and cut the rhubarb into short lengths, put in a chopping bowl, and chop fine. Pack in cans as firm as can be placed, running off the surplus juice. Screw on covers tight and set in the cold water for a while, after which set on the cellar bottom in the dark. It will keep a year, and longer, and no one can tell it from the fresh rhubarb. One quart can will make three or four pies.

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Good Things Overlooked

IF A gloss is desired on linen, add a teaspoonful of salt to the starch when making.

Give plenty of room between the pansy plants—a foot or more—and have the soil very rich, very well cultivated, and remember that sand keeps the soil porous.

If you fold a torn or mended towel or table napkin, fold the worst side out, or you may forget it and find that you have given the damaged article to your most honored guest.

In making apple jelly, practise economy by using peelings and cores. A peculiar delicacy of flavor and coloring is obtained in this way. The greener the apples, the lighter colored the jelly.

When hemming linen in the French or old way, if you will rub the place where stitches are taken with any good white soap you will find the work much more satisfactory; the soap removes the starch and softens the goods.

When ironing handkerchiefs, begin by ironing the middle. Remember that to iron the edges first causes the middle to swell out, and makes them very difficult to iron and fold properly. Always test the heat of the iron on a piece of rag or paper before using, to prevent scorching.

To test the heat of an oven, place a piece of white paper in it, and if the heat is too great it will turn the paper black; if it only turns a light yellow, it is fit for sponge cakes and the lighter kinds of biscuits; if it turns a dark brown, it is fit for pastry; if a dark yellow, it is right for baking heavier kinds of cake.

Picnic Hints

ONE of our picnic indispensables is a large piece of table oilcloth, which, spread on the grass enamel side down, provides a playground for baby, free from danger of dampness or of his picking up bugs and dirt, and where he enjoys his freedom and permits others to do likewise. A piece of mosquito netting is also included, to protect him from insects.

Other accessories are a bottle of strong baking-soda water, which if used as a wash immediately after an accidental encounter with poisonous vines will prevent the poison taking effect; a vial of alcohol, for the relief of insect stings; and a little "first aid" parcel, for possible accidents—clean linen, string, and a box of reliable salve at least.

The children's swing ropes should never be forgotten, and hammocks taken when possible. Their transportation to the grounds is made easy by spreading out the oilcloth, on it putting baby's blanket, mos-

DEVILED CHICKEN LEGS—Cut cooked chicken legs open so as to remove tendons; brush with butter, sprinkle over each a speck of minced parsley, celery, onion juice, dry mustard, salt and grating of nutmeg; press together, dip into beaten egg, then in bread crumbs, and fry in hot fat; serve with sliced tomatoes.

quito netting, the swing ropes and hammock, with umbrellas for an unexpected shower, and then rolling all in a long, slender roll, enamel side out, which is convenient to carry and needs no other wrapping.

Paper napkins and wooden dishes should supplant china and linen as far as possible. For the iced tea or coffee, prepare a strong extract, and carry in a bottle, diluting with water at the grounds. Much time and bother is saved by carrying the extracted lemon juice and sugar in a fruit jar, making the preparation of the lemonade the work of a moment.

Pickles are never so good as at a picnic, and a generous supply should be included. But undoubtedly the pièce de résistance is the sandwich. Sandwich bread is best when two days old and of fine grain. Ham, chicken or hard-boiled eggs for filling should be put through the meat chopper or chopped fine by hand. Cream-cheese sandwiches are especially good with brown bread. Hickory nuts run through the chopper and seasoned with salt and sweet cream make delicious filling. Cheese sandwiches made with a thin slice of cheese spread with mustard are nice. Tomatoes, lettuce, watercress or cucumbers all make delicious sandwich filling when put between slices of buttered bread and spread with salad dressing. A layer of cottage cheese covered with thinly sliced radishes is another appetizing filling. Sardines for sandwiches should have the skin and bones removed, then be mashed and flavored with lemon juice. Brown bread spread with plum jelly is another appetizing combination.

If the picnic ground is not near running water, where cress may be gathered, a bunch of parsley should be put in for garnishing.

Paraffin paper should be used liberally in wrapping the luncheon, which, so far as possible, should be put up in pasteboard boxes; these, then, with the dishes and napkins, can be burned before the return, leaving little to bother with on the homeward trip.

EDITH E. SHAW.

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Bending the Twig

"JOHNNIE, I want you to take these patterns to Mrs. James; I promised to send them home to-day."

Johnnie did not want to go, and entered a loud protest.

"Come," said his mother coaxingly, "be a good boy

FANCY SANDWICHES—Cut bread into clover leaves, hearts, circles and triangles; butter, and spread with peanuts put through a press and salted, English walnuts chopped with raisins, dates and minced lemon peel, watercress and mayonnaise, radish and lettuce with boiled cream dressing, dates and blanched almonds, mashed egg yolk and minced pickles, and pile about a bouquet of lettuce hearts.

and take them and I will give you money to buy a ticket to the pony show to-morrow."

"Alice, my dear, never do that again; never offer your child a bribe. When you request him to do or not to do a thing, require prompt obedience, because your request was right, and because it is right for him

to obey. Then there will never arise a question of doubt as to your authority," said the boy's grandmother after he had left the room.

"I meant to give him the ticket anyway," said the mother, "so it wasn't much of a bribe, after all."

"Then you should have given it to him because a pony show is a nice place for children, and not for rendering you the slight services which he owes you. Remember the old adage of the inclination of the tree depending on the bending of the twig."

BUTTER COOLER

"Put them down dear," said a young mother to her little tot, who had gathered up a couple of pretty seashells from a basket in a neighbor's house.

The baby closed her hands resolutely over the shells.

"Put them down," again said the mother.

"Let her keep them," said the neighbor. "They belong to my daughter, and she has so many that she will not care for the baby to have a couple of them."

"No, indeed, that might prove to be her first lesson in picking up things that do not belong to her. Besides, I told her to put them down, and I must begin right now to teach her to obey," said the wise mother. MRS. W. L. TABOR.

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Paper-Dressed Dolls

THE charming bride and her no less stylish maids are of home manufacture.

A small bisque doll with long hair, that can be braided and coiled about the head, for a jaunty hat to be pinned to, is the foundation.

For the bride, white crêpe, with veil, hair ornaments and ruff of tulle, while pink is the color scheme for the maids, whose gowns are ornamented with a narrow white band, on which are dotted at intervals small pink and green flowers in water color.

Gather with a strong thread two strips of crêpe paper six inches wide and twelve inches long. Make the under one a seam shorter, so that when on the doll the skirts will be even at the bottom. Slip on the doll, draw up, and tie close under the arms. Conceal this with a sash, and cover the body with a collar-shaped piece of paper trimmed with a narrow ruffle, which acts as a short sleeve. Cut the neck square, and finish with a narrow painted band.

Plait three strips of paper for the hats. After making it into a cord, sew or paste it into shape, and trim with small paper flowers or a large bow. A bouquet of the same flowers should be placed in their hands.

They are really intended to set on the dresser, as a receptacle for hatpins, although they are not very durable for that purpose. They are more for show than useful. M. E. SMITH.

THE JUNE BRIDE AND HER MAIDS

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Butter-Cooling Device

AN INGENIOUS butter cooler may be made by following the directions here given: On a post about four feet high build a platform about two and one half feet square, with a galvanized-iron trough or gutter around the edge. On the platform make a simple wooden framework about three feet high with a pointed top, one side to open as a door. Canvas should be stretched all over this, and a pipe from the water supply led up and bent over the top. The water from this pipe is allowed to drip onto the canvas just fast enough to keep the whole damp; the water trickles down the canvas and is caught in the gutter below. The result is a cool fly-proof safe in the hottest weather, where jellies may be hardened and butter kept always hard.

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Self-Supporting Women in the Role of Independent Farmers

[CONTINUED FROM PAGE 9]

girls, whose customers are now supplied from a stock of more than one thousand fish.

While on the subject of the new forms of remunerative employment that have been opened to women in the rural districts it may be mentioned that there are some which are quite beyond the limits of farm work proper, but are nevertheless welcome especially to those women who have no taste for the more technical side of agriculture, and who heretofore have had only the alternative of teaching school or else seeking their fortune in some town or city. Nowadays such women who are desirous of continuing to enjoy the healthy country atmosphere may find employment as carriers in the rural free delivery mail service; as librarians of country libraries; as operators for rural telephone systems, or in some of the other new pursuits opened up by improved rural conditions in the United States. Women, too, are even appearing in not a few localities as proprietresses of cross-roads stores, and great numbers of them are serving, as women have for years past, as postmistresses at fourth-class offices.

The breeding of thoroughbred horses might be supposed to be an occupation that would appeal more forcefully to men than to women, but nevertheless a number of representatives of the fair sex have of late invaded this field. A Boston multi-millionaire recently paid one thousand dollars for a blooded colt raised by a woman who has a little twelve-acre farm in the blue-grass region of Virginia. The animal industry on the farm has rewards even for women who must start in with modest capital. A Southern woman who a few years ago invested twenty-five dollars in the nucleus of a flock of sheep now nets four hundred and fifty dollars a year from this source alone.

Certain considerations make the present a particularly opportune time for women to engage in the dairy business. Foremost among these favorable influences is the fact that in many American towns and cities there has been of late much agitation on behalf of more rigid sanitary observances in the handling of milk. Now, according to tradition, women are greater sticklers than men for cleanliness and neatness, consequently the public is prone to flock to patronize a dairy that is conducted by a woman. With butter retailing in many cities at forty cents a pound during a considerable part of the year, and milk bringing eight and ten cents a quart, little need be said as to the prospective profits of the business. Many women who have looked with favor upon dairying as a specialty have been deterred from actually engaging in the work by the belief that considerable capital was essential. In contradiction it need only be stated that one of the most successful dairywomen in the United States set out upon her business career with a total investment of less than one thousand dollars for cows and equipment.

The future of farming by women in the United States would appear to give promise of a development far beyond that yet attained. A factor that will contribute to this is found in the provision at our agricultural colleges of facilities for the practical training of the farm mistresses of the future. The girl students at these state institutions receive instruction in such branches as field agriculture, rural home management, dairy practise, vegetable gardening, etc. How complete is the course of instruction may be surmised from the fact that the young ladies are even taught how to draw the arehitectural plans for farm houses and barns. In some of the schools great stress is laid upon the tutoring in canning, preserving, pickling and jelly making—accomplishments which the proprietress of a fruit farm will find of the utmost value.

The classes in poultry raising and dairying are nearly always well filled at these schools. The course for poultry raisers embraces the whole range of instruction in the feeding and management of fowls for eggs and for the market. The schooling in dairy practise includes instruction in the care of milk and utensils and in the manufacture of butter and cheese in the farm dairy. The students also receive practical insight into the most advanced methods of creaming milk, ripening cream, churning, and working and packing butter.

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Bananas are not only a pleasant fruit, but a very refreshing food. Bananas and bread and butter make a capital summer luncheon for any one who dislikes a heavy midday meal in warm weather.

Designs in Summer Underwear

All Sorts of New Ideas in Underclothes Specially Made for Thin and Stout Figures

No. 629—Tight-Fitting Corset Cover
Sizes 34, 36, 38, 40 and 42 inch bust measures.

No. 630—Dart-Fitted Drawers
Sizes 22, 24, 26, 28, 30 and 32 inch waist measures.

FOR a woman with a well-developed figure this plain, tight-fitting corset cover will be found most useful. Its success depends upon its perfect fit. In making the corset cover, the best material to choose is a good quality of cambric. The model fastens down the front with buttons, and the buttonholes are worked through a hem. The corset cover can be made with either a square or round neck. The open drawers are fitted at the waist with darts, the fulness at the back gathered and drawn in with tapes. The lower edge of each drawer leg is finished with a ruffle.

No. 632—Simple Nightgown
Sizes 32, 36 and 40 inch bust measures.

No. 700—Closed Drawers with Yoke
Sizes 22, 24 and 26 inch waist measures.

IT IS very difficult to find ready-made closed drawers in the shops. Many women, however, prefer them to the open drawers. The pattern here given is for very plain drawers. If cambric is used they can be made for not more than eighteen cents, and in muslin they would cost about fifteen cents. The pointed yoke in front helps to make the drawers fit snugly at the waist. The leg portions are very full, and are finished with simple ruffles of the material. The drawers can be tucked if one wishes, however, and trimmed with ruffles of embroidery.

Now that it is the gown that clearly defines the figure that's the fashion, the slender woman is on the lookout for all sorts of devices which will improve her figure.

The corset cover illustrated in pattern No. 860 on this page is sure to prove a most useful little garment to the woman whose figure is not well rounded. The corset cover is trimmed in front with three lace-trimmed ruffles which act as a bust extender. The garment is made with a plain back with a few gathers at the waist. The full front closes through a box plait.

No. 860—Corset Cover with Bust Extender
Sizes 32, 34 and 36 inch bust measures.

No. 861—Combination Skirt and Drawers
Sizes 22, 24 and 26 inch waist measures.

No. 826—Corset Cover with Peplum
Sizes 32, 34, 36 and 38 inch bust measures.

No. 631—Full Chemise, Fitted or Loose
Sizes 32, 36 and 40 inch bust measures.

THIS full chemise, which may be worn fitted or loose, forms an excellent substitute for a corset cover and short petticoat. Make it of either handkerchief linen, dimity or nainsook, with some fine embroidery used with the beading for the trimming. The chemise is cut low-neck, with the fulness gathered at the neck back and front. Many very fashionable women are using dotted swiss for their corset covers and chemises, but of course for every-day wear such a material is out of the question. However, the girl who is planning her trousseau might like to have a chemise of this sort made of dotted swiss with her favorite color ribbon run through the lace beading.

No. 633—Corset Cover Closed at Back
Sizes 32, 34, 36 and 38 inch bust measures.

No. 634—Gored Petticoat with Adjustable Flounce
Sizes 22, 24, 26 and 28 inch waist measures.

No. 825—Dressing Sacque with Sleeves in Two Styles
Sizes 34, 36, 38 and 40 inch bust measures.

No. 443—Tight-Fitting Corset Cover
Sizes 34, 36, 38, 40 and 42 inch bust measures.

No. 704—Short Petticoat, with or without Yoke
Sizes 24, 26, 28 and 30 inch waist measures.

No. 705—Dressing Sacque with Fitted Back
Sizes 34, 36, 38 and 40 inch bust measures.

THOUGH this dressing sacque is very simple to make, yet it has a decidedly trim and smart look. It is made with a fitted back. The fronts are gathered a trifle at the neck, and finished with a turn-down collar. Ribbons fasten at the side seams, and tie in front. The two-piece sleeve is made with becoming fulness at the shoulders. A pretty challie in one's favorite color may be used for this sacque. Cotton crepon or French flannel would also look well. This dressing sacque in dotted swiss will look extremely attractive, or in dimity or figured lawn.

MADISON SQUARE PATTERNS

Our magnificently illustrated summer catalogue of Madison Square patterns will be sent free upon request. Order all patterns from Pattern Department, Farm and Fireside, 11 East 24th Street, New York City.

Full descriptions and directions are sent with the pattern as to the number of yards of material required, the number and the names of the different pieces in the pattern, how to cut and fit and put the garment together, and also a picture of the garment as a model to go by.

ALL PATTERNS ARE 10 CENTS EACH

When ordering be sure to comply with the following directions: For ladies' waists, give bust measure in inches; for skirt pattern, give waist measure in inches; for misses and children, give age. To get bust and breast measures, put a tape measure all the way around the body, over the dress, close under the arms. Order patterns by their numbers. Satisfaction guaranteed or money refunded.

OUR LATEST LIBERAL OFFER

We will give any two of these patterns for sending two yearly subscriptions to Farm and Fireside at the regular price of 25 cents each. Your own subscription may be one of the two. When ordering write your name and address distinctly. We will send Farm and Fireside one year, new or renewal, and any one pattern for 30 cents.

EW

Miss Gould's Practical Fashions

Including a Fine Summer Wardrobe for Teddy Bear Which Will Make Him More Popular Than Ever

OF COURSE Teddy Bear does not have to depend upon fine clothes, like a mere doll, for his popularity, yet now that he has become so dear to the heart of the little American girl, it stands to reason that she will be glad to make for him summer costumes which will add to his already charming appearance and his many attractions. That is why the fashion editor of the FARM AND FIRESIDE has designed a special summer outfit for Teddy Bear.

For ten cents any little girl may buy two patterns by which she can easily make clothes for her own particular and much-loved fuzzy bear. For twenty cents she can buy patterns to provide Teddy with a whole summer outfit.

Perhaps Teddy Bear may be fond of the seashore and would like a bathing suit, even if he does not go in very much for swimming. The Madison Square patterns now include a very up-to-date bathing suit specially designed for a Teddy Bear who is just fifteen inches tall. And you can get with the bathing suit another pattern as well—one for pajamas, which are sure to please even the most fastidious of bears.

Another outfit for Teddy consists of patterns for a sailor suit and over-alls, both included in one pattern for ten cents.

No. 937—Surplice Waist with Shawl Collar

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medium size, or 36 inch bust, three yards of twenty-two-inch material, or two and one half yards of thirty-six-inch material, with three fourths of a yard of all-over lace, three fourths of a yard of inserted tucking and two yards of lace for frills

CROSS-OVER effects are very fashionable this summer, and many of the waists of the dainty cotton gowns are made in this manner. Sometimes the cross-over effect is merely simulated in the trimming—bands of embroidery, lace or ribbon producing it. And then again the style is carried out in the waist itself, like the design shown on this page in illustration No. 937. This waist has the fronts crossed in surplice effect, and they are finished with a shawl collar of all-over lace. The waist has an adjustable chemisette and short puff sleeves made with a deep armband and frill.

The skirt worn with this fetching little bodice is very graceful and yet simple to make. The upper part, which fits very smoothly over the hips, is cut in seven gores. The lower portion is made in the form of a gathered graduated flounce. Figured swiss lends itself admirably to a little summer gown of this description, or cotton voile, organdie, batiste or dimity may be used. For a silk gown the design is also pretty in figured pongee or foulard.

No. 935—Nightgown with Square Yoke

Pattern cut for 2, 4, 6 and 8 year sizes. Quantity of material required for medium size, or six years, four and one half yards of twenty-two-inch material, or three and one fourth yards of thirty-six-inch material

No. 938—Skirt with Graduated Flounce

Pattern cut for 24, 26, 28 and 30 inch waist measures. Length of skirt in front, 42 inches. Quantity of material required for medium size, or 26 inch waist, eleven yards of twenty-two-inch material, or eight yards of thirty-six-inch material

A VERY practical skirt for a summer girl to include in her wardrobe is shown in illustration No. 939. The good features of this skirt, which is cut in thirteen gores, are that it fits to perfection around the hips, has a generous flare at the bottom and buttons straight down the left side of the front gore from the waistline to the very edge of the skirt. This makes its laundering an easy matter.

No. 939—Thirteen-Gored Skirt

Pattern cut for 24, 26, 28 and 30 inch waist measures. Length of skirt, 40 inches. Quantity of material required for medium size, or 26 inch waist, eight and three fourths yards of twenty-two-inch material, or six and one half yards of thirty-six-inch material

How to Order Patterns

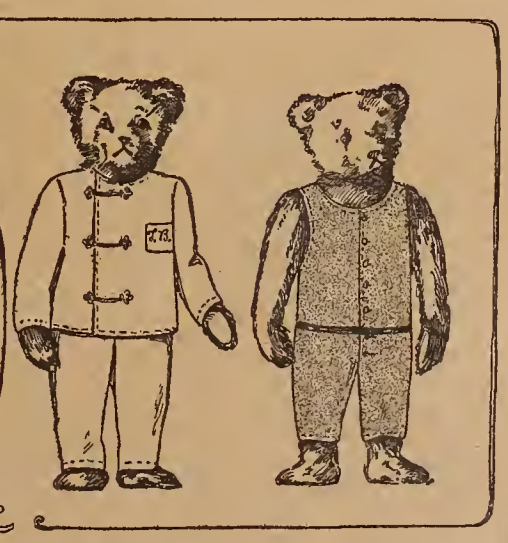
We will furnish a pattern for every design illustrated on this page. The price of each pattern is ten cents. In ordering, be sure to mention the number of the pattern desired and the size required. Send money to the Pattern Department, Farm and Fireside, 11 East 24th Street, New York City. Write for our summer catalogue; sent free on request.

No. 936—Teddy Bear's Over-Alls and Sailor Suit

Pattern cut in one size—for a fifteen-inch bear. Quantity of material required for over-alls, five eighths of a yard of material twenty-seven inches wide. Quantity of material required for sailor suit, three fourths of a yard of material twenty-seven inches wide

No. 837—Toy Bear

Pattern cut in one size—for a bear fifteen inches high. Quantity of material required for this bear, one half yard of material thirty-six inches wide and one small piece of leather or chamois eight inches square for paws and two buttons for eyes



No. 940—Teddy Bear's Pajamas and Bathing Suit

Pattern cut in one size—for a fifteen-inch bear. Quantity of material required for pajamas, three fourths of a yard of material twenty-seven inches wide. Quantity of material required for bathing suit, one half yard of material twenty-seven inches wide

SPECIAL NOTICE TO Pony Contestants

Owing to the fact that the June 10th number of FARM AND FIRESIDE goes to press before the end of the Pony Contest, we are unable to make any announcement of the prize winners in this issue.

It may be possible that we cannot make the final definite announcement until the July 10th issue, because it is quite likely that orders from the far Western states will not reach our office in time to have the final count made before the June 25th number goes to press.

However, we shall surely print the names, and perhaps the pictures, of the prize winners in the July 10th number, if not before. In the meantime, as soon as the "points" can all be counted, we will send the various prizes to those who won them.

Do not be surprised or disappointed if there is a little delay, for it takes a great deal of time to bring to a close such a stupendous and successful pony contest as we have just conducted. It has been the greatest in the history of America.

We will send you your prize at the first possible moment. You will surely get it.

FARM AND FIRESIDE
SPRINGFIELD, OHIO

Bob White

BY HILDA RICHMOND

"COMING!" called Robert, scrambling out of the apple tree as fast as possible to run to the house. "I'll be there in a minute."

Mrs. Rich was baking cookies in the kitchen, and she looked up in surprise when her little nephew came in. "I didn't call you, Robert," she said when he asked her what she wanted. "You must be mistaken."

"Somebody called me," said the little boy. "I heard it just as plain as anything."

"Have some cookies, and then run back to your play," said his aunt. "I will call you when dinner is ready."

But twice before dinner was on the table the little boy went to the house again to see why his aunt called him. Each time she said she did not want him, and Robert began to think something was very strange. His mama had told him to be sure to go to the house the minute he was called, so Mrs. Rich would have no trouble, but it was hard to leave the fine old orchard every few minutes just for nothing.

"Somebody wants me down in the meadow, auntie," said Robert that afternoon. "I guess it must be Uncle John."

"Uncle John and the hired man are both away from home," said Mrs. Rich. "Are you sure you heard some one calling you? Often the neighbor boys are down there playing, and they may have been a little louder than usual."

"It was my name," said Robert. "Whoever it was called real loud a whole lot of times. I hollered back, but he didn't say anything then."

"We will go and see," said his auntie, putting on a big sunbonnet. "It certainly is very strange that you think some one is calling you all day to-day."

It was Robert's first day in the country, and he thought the waving grass the prettiest sight he had ever seen, as they came to the meadow, dotted here and there with elm trees. The birds were singing, the bees humming and the air was sweet with the smell of clover blooms. No one was in sight, though they looked carefully behind every tree.

"I think you just imagined you heard your name," said auntie.

"I'm sure some one called for—" began Robert, when just at his feet rose a lovely brown bird that went swiftly away on whirring wings. It reached the other side of the field, and suddenly arose the clear cry: "Bob White! Bob White! Bob White!"

"There!" cried Robert. "He is hiding in the grass over under that big tree."

"Is that what you heard?" said auntie. "My dear, that is our dear Bob White of the fields, and he is calling to his little mate. There she goes!" and she pointed out a shy bird pretending to trail through the grass to lead them away from her nest. "I don't wonder you thought he was calling you, for you are Bob White, too."

The country children tease Robert a great deal every time a quail begins to cry from the wheat field or meadow, but he doesn't mind it at all. He just laughs with the rest, and sits still when a clear voice calls through the summer air: "Bob White! Bob White! Bob White!"

Playing at Farming

EARLY in life the bent of a child's nature manifests itself. I know a boy who declares he is going to be a farmer, and he is not a farmer's son, either. From his very childhood he has loved horses, cattle, hogs and sheep. He is perfectly content when out of doors and playing he is a farmer. He has a little farm of his own out in the back yard. He has fenced it off into small lots by driving short sticks into the ground two inches apart. He has made the farm animals from potatoes, using the large potatoes for their bodies and the smaller ones for their heads. Four sticks of equal length stuck into each large potato serve as legs, and the heads are also joined to the bodies by short sticks. Pine boxes are used for barns, and a shoe box serves as a wagon. Short boards dropped between stakes serve as gates to the different lots.

For hours this boy amuses himself with his farm when otherwise he might be running around with bad boys and giving his parents a great deal of trouble.

Pick-Ups from History

BOY SOLDIERS

SOON after the capture of one of the Confederate forts in the West a lady went into the hospital where the wounded had been taken. She was much attracted by two young men, lying side by side, all splintered and bandaged so that they could not move hand or foot, but so cheerful and happy-looking that she said, "Why, boys, you look very bright to-day."

"Oh, yes," they said, "we're all right now. We've been turned this morning."

And she found that for six long weeks they had lain in one position, and for the first time that morning had been moved.

"And were you," she asked, "among those poor boys who were left lying where you had fallen that bitter cold morning?

PLAYING FARMER

"Yes, ma'am," they said. "We were lying there two days. You know they had no time to attend to us; they had to go and take the fort."

"And didn't you think it was cruel in them to leave you to suffer so long?"

"Why, no, ma'am. We wanted them to go and take the fort."

"But when they took it, you were in too much agony to know or care for it?"

"Oh, no, ma'am!" they answered, with flashing eyes and faces glowing with the recollections of that day. "There were a whole lot of us wounded fellows on the hillside watching to see if they would get the fort. When we saw they had it, every one of us that had a whole arm waved it in the air, and we hurrahed till the air rang again."

LAD PICKS OFF AN INDIAN

The following account, taken from a communication of Major Nye, of Ohio, well illustrates of what character were the boys of the great heroic age of the West. The scene of adventure was within the present limits of Wood County, Virginia:

"I have heard from Mr. Guthrie and others that at Bellville a man had a son, quite a youth, say twelve or fourteen years of age, who had been used to firing his father's gun, as most boys did in those days. He heard turkeys, he supposed, on or near the bank of the Ohio, opposite that place, and asked his father to let him take the gun and kill one. His father, knowing that the Indians frequently decoyed people by such noises, refused, saying it was probably an Indian. When he had gone to work, the boy took the gun and paddled his canoe over the river, but had the precaution to land some distance from where he had heard the turkey all the morning, probably for fear of scaring the game, and perhaps a little afraid of Indians. The bank was steep, and the boy cautiously advanced to where he could see without being seen. Watching a while for game, he happened to see an Indian cautiously looking over a log, to notice where the boy had landed. The lad fixed his gun at a rest, watching the place where he had seen the Indian's head, and when it appeared again, fired, and the Indian disappeared. The boy dropped the gun and ran for his canoe, which he paddled over the river as soon as possible. When he reached home he said, 'Mother, I have killed an Indian!'

"'No, you have not.'

"'Yes, I have,' said the boy.

"The father coming in, he made the same report to him, and received the same reply; but he constantly affirmed it was even so. As the gun was left, a party took the boy over the river to find it, and see the place where he had shot the Indian, and behold! his words were found verified The ball had entered the head, where the boy had affirmed he shot, between the eye and the ear."

Such boys made the men of the republic in after years—men whom neither tyranny nor oppression could subdue.

BRAVERY OF MISS SCHWARTZ

In the summer of 1863 a party of guerrillas went in the night to the house of Mr. Schwartz, twelve miles from Jefferson City, Missouri, and on demanding admittance were refused by Miss Schwartz, a girl of fifteen years. They answered that they would come in, and commenced breaking down the door. Five or six men, who were in the house, now ran out the back door, taking with them, as they supposed, all the firearms. In their haste a revolver was left, which the heroic girl seized, and pointing it at the head of the leader of the gang, said, "Come on if you want to: some of you shall fall, or I will!" They then said they would kill her if she did not leave the door. She answered, "The first man of you that dares take a step toward this door dies. This is the home of my parents, my brothers and sisters, and I am able to and shall defend it." After a brief consultation the ruffians left.

[SERIES TO BE CONTINUED NEXT ISSUE]

Answers to Puzzles in the May 25th Issue:
Seven Apples—Winesap, Champion, Prizetaker, Baldwin, Bellflower, Pippin, Rambo.
Charade No. 1—Carpenter—carp-enter.
Charade No. 2—Chinchilla—chin-chill-a.

"Making the Dog Go Back"

Never a sign of Shep about—
Ah, what a threadbare ruse!
Down the lane, to the gate, and out,
Sorry the scamp is loose;
Visions of trouble close at hand,
Keeping one on the rack:
Hard for a boy, you understand,
Making the dog go back!

Whistled to come, day after day,
Lured with endearments fond;
Sniffing you up out in the hay,
Swimming with you in the pond;
Chasing your foe with bristling mane,
Hot on the rabbit's track:
Wonder it goes against the grain,
Making the dog go back?

Ha, there he is, low in the grass,
Only his ears in view;
Spying the way that you must pass,
Keeping his distance, too;
Heedless alike to wile and threat,
Sneaking away to tack:
Small returns for your pains you get,
Making the dog go back!

Another halt, a few rods on,
And a bootless chase the while;
The homestead disappears anon;
But, again, within the mile,
Shep's bland nozzle is peeking out
The last gate's gaping crack:
Ready to call it quits, no doubt,
Making the dog go back!

Many a memory fond is there,
Dear days that now are o'er;
And ever the heart is fain to fare
The old home road once more;
Only in dreams I now may see
Old Shep upon my track,
And morning seems unkind to me,
Making the dog go back!

—Kansas City Star.

A great many of our younger readers have been showing their appreciation of FARM AND FIRESIDE by sending in new subscriptions, and we want to assure all that we are very thankful for such favors and encouragement.

Just the Same

THE American in England affords matter for much perplexity and astonishment to his English kinsmen. One of these was being shown an old church wherein hundreds of people were buried.

"A great many people sleep beneath this roof," said the guide, indicating the

VISITOR—"Your horse looks very slick and well rounded out. I suppose that comes from feeding him with punctuality."

BOY—"No, sir, we don't feed him anything but oats and corn."

inscription-covered floor with a wave of his hand.

"So!" exclaimed the American. "Same way over in our country. Why don't you get a more interesting preacher?"

◈

Saved by the Telephone

The wedding guests had assembled, the preacher was in readiness, and it lacked but fifteen minutes of the time appointed for the ceremony, when the young man in the case appeared at the door of the parlor and called the preacher out.

"Mr. Stedman," he said, "I'm in a terrible fix. I forgot to bring the license. I left it at home in my other coat."

"That is very unfortunate," the minister answered. "I can't marry you without it. Isn't there some way of getting it here?"

"Not in time!" groaned the hapless bridegroom elect. "The boarding house where I've been living is ten miles from here. It would take two hours to go and get it."

The preacher reflected a moment. "Can we reach the place by telephone?" he asked.

"Yes, sir."

Two minutes later they were standing before a telephone in another room, and the young man was conversing with the landlady of his boarding house.

"Mrs. Guernsey," he said, "will you please go up to my room, take a folded paper out of the inside pocket of a coat that hangs in my closet, and bring it back with you to the phone? Hello, Central! Don't cut us off!"

Presently Mrs. Guernsey reported that she had found the document.

"Thank you," he said. "The Rev. Mr.

"What color eyes has your little baby sister, Bobby?"

"I don't remember the color of her eyes, but I know her voice is 'yeller.'"

Stedman will carry on the rest of this conversation with you."

He handed the receiver to the preacher, who asked:

"Are you this young man's landlady, madam?"

"Yes, sir," she said.

"Will you please open and read to me the paper you hold in your hand, or tell me what it is?"

"It's a marriage license, authorizing any clergyman or other lawfully qualified person to solemnize the marriage of George H. Bellmore and Ida Travers."

"Is it dated, signed and sealed?"

"It is, sir."

"Thank you very much. Now call a messenger and send the license here by the swiftest mode of traveling at once. That will do. Good-by!

Then he turned to the young man.

"Now, Mr. Bellmore," he said, "there need be no delay in the ceremony. We will proceed with it, and when that license comes I will examine it, and if there is any apparent informality in this arrangement I will marry you again after the company has gone."

This program was carried out, and the marriage still holds.—Youth's Companion.

Curing a Critic

The daughter of a certain statesman has a husband who is disposed to be critical. Most of his friends are men of great wealth who live extremely well, and association with them has made him somewhat hard to please in the matter of cooking. For some time the tendency has been growing on him. Scarcely a meal at his home table passed without criticism from him.

"What is this meant for?" he would ask after tasting an entrée his wife had racked her brain to prepare.

"What on earth is this?" he would say when dessert came on.

"Is this supposed to be salad?" he inquired sarcastically when the lettuce was served.

The wife stood it as long as she could. One evening he came home in a particularly captious humor. His wife was dressed in her most becoming gown and fairly bubbled over with wit. They went in to dinner. The soup tureen was brought in. Tied to one handle was a card, and on that card the information in a big, round hand:

"This is soup."

Roast beef followed with a placard announcing:

"This is roast beef."

The potatoes were labeled. The gravy dish was placarded. The olives bore a card marked "Olives," the salad bowl carried a tag marked "Salad," and when the ice pudding came in a card announcing "This is ice pudding" was with it.

The wife talked of a thousand different

DOROTHY—"Papa, why do people kill wolves?"

FATHER—"Because they kill the farmers' sheep and hogs."

DOROTHY—"Then, papa, why don't people kill the butchers, too?"

things all through the meal, never once referring by word or look to the labeled dishes. Neither then nor thereafter did she say a word about them, and never since that evening has the captious husband ventured to inquire the name of anything set before him.—Tit-Bits.

◈

The English of It

There was once a sporting parson at Eastington, a place on the English coast, which was a favorite landing place for woodcocks at the time of their immigration to England. When the birds arrived, exhausted by their long flight, everybody in the parish, including the parson, at once turned out to join in the sport of knocking them down with sticks. One Sunday the people were in church and the parson in the pulpit, when the church door was cautiously opened and a head appeared with a beckoning finger.

"Well, what is it?" asked the parson.

"Cocks is coom!"

The parson hurriedly shut up his sermon case. "Shut the door and lock it," he cried to the clerk. "Keep the people in church till I've got my surplice off. Let's all have a fair chance."

◈

Squelched

CLERK—"My employer wants to know when you're going to settle this account?"

DUDE—"Please tell your employer his curiosity in that direction is no greater than mine. Kindly refrain from slamming the door as you go out. It jars on my nerves."

HE—"No, I insist that you eat the piece of pie, Anna."

SHE—"No, I couldn't think of it. I brought it along for you."

TRAMP (reaching through fence)—"I don't like to see folks quarreling all the time."

HONOR ROLL

Of Farm and Fireside's Great Four-Pony Contest.

The following contestants are already prize winners. They have each won two prizes by getting on the FARM AND FIRESIDE Honor Roll, and their names will be seen and honored by nearly **three million** people. This Honor Roll is complete up to date of going to press, May 15, 1907.

Nellie Albright, Fla.
G. W. Albright, Cal.
Mrs. S. A. Allen, Iowa
Bernice D. Andrews, Mass.
Paul H. Aepple, Obio
Fern Atkins, Pa.
Paul R. Boggs, Ohio
Marie Bliss, Ohio
Benton D. Biser, W. Va.
Ernest Bast, Wis.
G. W. Burton, Ark.
Annyta Barnett, Cal.
Carson Brubaker, Obio
Robert J. Burns, Ohio
Ormond Blunt, Mo.
Amelia Burns, Ala.
Gertrude Boardman, N. Y.
G. W. Burton, Ark.
Hazel Boyce, N. Y.
Arthur Beard, Kan.
Clarence Bailey, Pa.
Leonard H. Brubaker, Obio
Gwendolyn Bowles, Mo.
Loree Burwell, Obio
Violet Brown, Wis.
Louis Branchet, Mont.
Paul F. Beam, Ohio
Junius C. Ballard, Tex.
Ormond Blunt, Mo.
Charlotte Blankenbeker, Ky.
Ellis W. Burrows, Ohio
Lucien W. Bingham, Vt.
Mary A. Buchanan, Va.
Rozella Bughtler, Ohio
Eleanor C. Cramer, Pa.
Beulab Crane, Kan.
Jesseye Chawin, Ky.
Sarah Crofut, Conn.
Irene Campbell, Obio
Margaret Costello, Obio
Earle P. Cox, Ohio
Mrs. E. A. Chapman, Cal.
Ruth Cotton, Ohio
Hazel Cubberly, N. J.
Beulah Crane, Kan.
Ernest Collins, Iowa
G. Woodford Connell, Canada.
Wesley Colby, Iowa
Irene Campbell, Ohio
Herbert A. Campbell, N. Y.
Gladys Dillman, Kan.
T. V. Downin, Md.
D. De Young, Ill.
Merriman Dodd, Pa.
Bessie Dobson, Wash.
Fidelia Edgar, Cal.
Mattie Eustace, Mo.
Geo. Erickson, Mass.
Ruby L. Emlet, Ohio
Gertrude Farnsworth, N. Y.
Mrs. H. D. Fevec, Fla.
Mrs. J. D. Friedline, Ind.
Roy Frankenberry, Pa.
J. W. Griggs, Mo.
Mary Gibson, Ohio
L. M. Galene, Cal.
Harry Giesen, Mich.
Wm. Gilson, Pa.
Carl Gregg, Ore.
Isabel Graham, Ohio
Nellie C. Hotchkiss, Conn.
Irene Heberling, Kan.
Robt. W. Harrington, Mass.
Bessie Hair, Pa.
Mrs. Rosa Heffner, Mich.
Fred Hawkin, W. Va.
Hazel Higginbotham, Fla.
Dorotby Hamm, Neb.
Rutb Hartsock, Ohio
Mrs. F. A. Hall, Ohio
Orrin E. Hill, N. Y.
Kathryn Harrison, Pa.
Lucy M. Heckard, Ore.
Mabel M. Hannum, Obio
Nora Iten, Hawaii
Cora Jobnson, S. Car.
Ellswortb Jillson, R. I.
Wallace H. Jobnson, Conn.
Dott Jay, Ill.
Gladys Johnson, Ill.
Frances J. Kelly, Cal.
Lyall Kingsbury, Ohio
McClellan Kline, Ill.
Marguerite King, Ohio
Mrs. N. A. Keene, Mass.
Mabel Kintner, Pa.
Charles W. Kingsley, Mass.
Alice Leedy, Ore.
Sara Logan, Pa.
Jessie Locke, Pa.
Dervey R. London, Ohio
Lucy M. Leishman, Ala.
Howard G. Laidlaw, N. Y.
Glenn Murphy, Kan.
Mrs. C. P. McTeer, S. Car.
Ira Minse, Minn.
Herbert McQuern, Ind.
Carl McMurray, Canada
Harry Merck, Fla.
Ella McClellan, Ky.
Willie F. McKay, Ill.
Rutb Kate Mills, Mich.
Lottie McMicbael, Ohio
John Magill, Cal.
Paul C. Martin, Md.
Tearence Newton, Ind.
Josepb Noser, Mo.
Ellen Norene, Ky.
Ernest Newman, Ind.
Ruth Niles, Pa.
Geraldine Oesterling, Pa.
Mrs. J. C. Oestergard, Cal.
Leonard Owen, Mo.
Fred Potter, Ohio
Helen Printz, Ala.
Lucy Pratt, Mass.
Mrs. Roman Pickens, W. Va.
David Barr Peat, Pa.
Odell Piersol, Ohio
Hazel Quintmyre, Iowa
Iness Leone Reeves, Ind.
Charley Ross, Mont.
Earl Robinson, La.
Wm. M. Reichenbach, Pa.
Maytie Rowe, Ohio
DeMerville Robords, N. Y.
Henry Reinke, N. Y.
Daisy Reed, Wash.
Christine Reaves, I. T.
Minnie M. Reehling, Ohio
Arthur W. Swanson, Iowa
Ethel A. Sternburg, Pa.
Aubrey Shea, N. Y.
Ruth Mary Sala, Neb.
Earl G. Spurch, Ohio
Rodney Sutherland, Utah
J. W. Shirley, Neb.
Florence Seymour, Ohio
Cecil Stauder, Obio
Artbur Smith, Pa.
Glenn W. Strenick, Obio
Clarence Sbobe, W. Va.
Kitty Shepherd, Cal.
K. B. Saunders, Va.
Essie J. Seal, S. Car.
Helen Scarborough, Ohio
Mrs. H. B. Sizer, Va.
John Sims, Ark.
Floyd Sheley, Mo.
Maud Stewart, Ohio
Neil Scoles, Iowa
Hester Sexton, Ill.
Ed Stoker, Tex.
Elizabeth Shumate, Va.
Alta Simpson, Neb.
J. P. Tribbett, Va.
Ada Trosper, Neb.
Ray Tbatcher, N. Y.
Floyd P. Tucker, Ill.
C. D. Townsend, N. Y.
Marie Temple, S. Car.
Glenn Tompkins, Obio
Geo. Taylor, Ohio
Annie Tandy, Ky.
Georgia A. Turrill, Kan.
Lula Tennant, N. Y.
Lola Thacker, Ohio
Roy W. Utz, Mo.
Julia Violet, Ohio
Chas. L. Watson, Canada
Clay H. Ward, Md.
Mildred E. Warn, N. Y.
Walter E. Weber, Ohio
Percy H. Wigg, Canada
Ernest W. White, Vt.
Lillian Wickens, Ohio
Cora Mae Wallace, Ohio
Verna Wright, Iowa
Ernest R. Wintermute, Ohio
Milton Walpole, Ohio
Robert S. Withrow, Pa.
Grace Wellman, Wis.
Edna M. Wilson, Pa.
Lilly Waldeck, Neb.
Amy Webber, S. Dak.
Bernice Walbridge, Neb.
Mrs. J. E. Weaver, Ohio
Pauline W. Walker, Ohio
Ralph Boswell Walters, Ind.
Dora Young, Ind.
Helen Zimmerman, N. Car.

NOW IS YOUR LAST CHANCE

to get your name on the FARM AND FIRESIDE Honor Roll. The Great Four-Pony Contest closes May 31, 1907. A few days still remain for you to win **two prizes** and **perhaps a pony.** If you get your name on the Honor Roll before June 1st, we will print it in the June 25th FARM AND FIRESIDE and send you your prizes immediately. Don't let this chance—your last chance—go by.

"GET IN THE SADDLE!"

IN A MISCELLANEOUS WAY

From the Wayside

BY EDWIN COOLIDGE

It must be very nice to be
A man who sows each thought and deed
As farmers sow a field to seed;
And yet it seems quite nice to me,
To take a breath upon a stile,
Once in a while.

It's fine to watch a fellow, too,
Who's always fighting in the van,
And punching heads where'er he can;
And yet, I think, twixt you and me,
It's good to help the rank and file,
Once in a while.

Perhaps it isn't great or brave,
But when I go to meet my death,
I'd rather not be out of breath
With jamming some chap in his grave;
I'd rather stop and plant a smile,
Once in a while.

◈

The Hague Peace Tribunal

THE second international peace conference is scheduled to convene at The Hague on the fifteenth of this month, at which the great problems tending to the world's peace will be discussed. One of the great features of the proposed program of discussion will be the elimination of armaments and the right of search and seizure during a naval war.

At The Hague conference of 1899 Mexico and the United States alone represented the New World, but at the conference this month representatives of all the South and Central American republics will assemble in the old Dutch capital. The delegates from the United States to the conference will be Joseph H. Choate, former ambassador to Great Britain; Gen. Horace Porter, former ambassador to France; U. M. Rose, of Arkansas, president of the Arkansas Bar Association; David Jayne Hill, American minister to the Netherlands; Brig-Gen. George B. Davis, judge advocate general, United States army; Rear Admiral Charles S. Sperry, United States navy, president of the naval war college; William I. Buchanan, chairman of the American delegation to the Pan-American conference. Chandler Hale, of Maine, formerly secretary to the American embassy at Vienna and the son of Senator Hale, will be secretary of the delegation; James Brown Scott, solicitor of the department of state will be expert in international law; Charles Henry Butler, reporter of the United States supreme court, expert attaché.

◈

Unique Farm for Bad Boys

NEW YORK STATE is trying a unique plan for dealing with bad boys. A fourteen-hundred-acre tract of land twelve miles outside of Rochester is the site selected, it being also the location of the new State Agricultural and Industrial School. The new school and the general plan of operation represent in the highest degree the advance of views of those who have made a study of the ills of juvenile delinquency.

Realizing that in perhaps a majority of cases the boys themselves are not really to blame for their condition, the object has been to eliminate entirely the prison idea from the school. The boys are to be given a fair, fresh start in life.

The farm colonies are located on either side of the industrial colonies. To each is assigned the cultivation of a farm of at least fifty acres. The boys are to have the greatest freedom, but they may not leave their own farm without permission. Each farm is to have, besides a cottage, a barn having accommodations for eight head of cattle, three horses and a dozen sheep, also a hennery and a piggery. Orchards have been set out, together with the necessary small fruits, for the supply of a family of twenty-seven. Great rivalry usually is manifested between the different farms, and each colony seeks to produce the best crops.

The education of the boys is also looked after, instruction being given in the common school branches by teachers who go to the cottages. The work thus done is largely individual. The school takes boys between the ages of twelve and sixteen who are convicted of any offense, and boys from nine to twelve who commit felonies. The average term of detention at this school is one year, but a few boys succeed in winning their parole in six months.

◈

Julia Ward Howe at Eighty-Eight

ON THE twenty-seventh of last month Mrs. Julia Ward Howe, now living in Boston, celebrated her eighty-eighth birthday anniversary. She was born in New York City just three days after the birth of the late Queen Victoria, and this fine type of American woman has often been referred to as the "American Queen."

From her earliest womanhood Mrs. Howe has been a woman of affairs, and one interested in the growing good of the world. She has been interested in many of the world's most helpful and beautiful philanthropies. She aided her famous husband, Dr. Samuel Gridley Howe, in his great work of establishing some of the first schools for the blind in our country. They worked together in the education of the famous Laura Bridgman. They went abroad with that great philanthropist, Horace Mann, when he and his wife went to Europe to study methods of teaching the deaf and dumb. The Perkins Institution for the Blind, in Boston, one of the greatest schools for the blind in the world, was established by them.

MRS. JULIA WARD HOWE

The story of the writing of the "Battle Hymn of the Republic" is a simple one. Mr. and Mrs. Howe were in Washington, and one day, in company with Rev. James Freeman Clarke, rode out to the suburbs of the city to witness a review of the troops. The troops sang war songs on the way home, and among others they sang, with great spirit, "John Brown's Body Lies Moldering in the Grave." Mr. Clarke remarked to Mrs. Howe that he wished that she or some one else would write better and more appropriate words for the song. Mrs. Howe awoke before daylight the next morning, and the words of the "Battle Hymn of the Republic" began to suggest themselves to her. She got up and wrote them hastily with a lead pencil, little dreaming that in the years of her extreme old age she would be asked again and again to tell how she came to write this immortal song.

Other well-known poems of hers are "Passion Flowers," "Words for the Hour" and "From Sunset Ridge." Popular, also, were her essays and prose writings, "A Trip to Cuba," "Sex and Education," "A Life of Margaret Fuller," "Is Polite Society Polite?" and her fascinating "Reminiscences."

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The Time in Italy

ITALY has a pretty sensible way of reckoning time, having in use the twenty-four-hour system. For instance, when it is two o'clock in the afternoon their clock designates fourteen o'clock, and midnight is shown as twenty-four o'clock. This is a very sensible kind of "time," and the wonder is that civilized nations have been so long content to designate time by "A. M." and "P. M."

President Roosevelt — Andrew Carnegie — King Edward — Emperor William

FOUR GREAT MOVING SPIRITS IN THE BATTLE FOR THE WORLD'S PEACE

The Mulberry Tree

BY WILLIAM EBEN SCHULTZ

The mulberry stands on the side of the hill,
With the scattered clouds over it lazy and still;
A silkworm of fancy now spins from its leaves
A thread of gold tinsel, while memory weaves
A fabric as fine as the looms of the East
In hues like the ones of the gay Flower Feast!

Below it, the river with azure-veined arm
Enfolds the fair landscape with many a charm:
The low-bending willows that trail in the tide,
And the silvery sycamores rising in pride;
In the cool, dappled shade, where the honey bees sing,
A sweet invitation the lily bells ring
To stop for a moment and rest, but for me
There is beauty alone in the mulberry tree!

Through the past all the wonders its covert possessed.
From the velvet-like leaves to the well-rounded nest
Of the robin that built on the sentinel limb,
Where, poised at the nightfall, there trembled a hymn
Far richer than those from the sirens' fair isle
That tempted Ulysses to linger a while!

The woodpeckers throng where the red berries drip
With liquid as sweet as e'er moistened the lip
Of the fond devotee where the tall lilies grow
And the drops of rich Burgundy sparkle and flow!
No revel of midnight has dazzled the head
That peeps from the green leaves in turban of red;
A feast to the gods do the berries bestow,
To the bird up above and the poet below!

The little sapsucker with many a dot
Has circled the trunk, and in each hidden spot
The berries have dropped by the same mystic spell
As the manna that once in the wilderness fell!

Like a palm in the desert its branches oft rise
When the sand burns my feet and the sun blinds my eyes;
I recline in its shadow, and often I seem
To see the fair city John saw in his dream;
And I sit by the fountain that flows by its root
And drink the clear water and eat the sweet fruit,
While the peace in its shadow that falls over me
Is as calm as once rested on glad Galilee!

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Giant Crab

A GIGANTIC Japanese crab measuring twelve feet across, said to be the largest in the world, is in the American Museum of Natural History, in New York City. The specimen is a type of the spider crab, which inhabits the waters of the group of islands forming the empire of Japan. The body portion of the crab is the size of a half-bushel measure, while its great arms could easily encircle the figure of a man. Its legs resemble poles and are extremely elastic, and if strung into one line they would reach to the top of a four-story apartment building.

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The Size of the Head

THE average adult head has a circumference of fully twenty-two inches, and the average adult hat is fully six and three quarters size. Men's hats are generally six and three quarters or seven eighths. "Seven" hats are common in Aberdeen, Scotland, and the professors of our colleges generally wear seven and one eighth to eight sizes. Heads wearing hats of the sizes six and three eighths and smaller or being less than twenty-one inches in circumference can never be powerful. Between nineteen and twenty inches in circumference heads are invariably very weak, and according to this authority, "No lady should think of marrying a man with a head less than twenty inches in circumference." Men with heads under nineteen inches are mentally deficient.

The Grange

BY MRS. MARY E. LEE

TURNING THE HEARTS OF THE PARENTS

It is easy to convince parents that their children are their most important possessions. Wealth in lands and chattles and money is of small importance compared with their sons and daughters. They work for their children, plan for their education, and study to fit them to be worthy and useful and happy men and women. This is as it should be; for we are taught that the man who will not provide for the needs of his own household is worse than an infidel.

All who have acquired power in any trade or art or profession know that they have acquired the measure of power which they possess only by paying its price. The skilful blacksmith owes his skill to years of practise. The farmer who is worthily successful owes his measure of success to something besides good luck and the possession of fertile fields; by his diligence and his intelligence he has earned his mastery over the forces that forever baffle the lazy, the ignorant and the thriftless. It is work that wins.

A ready tongue in the mouth of a boy is not a sure sign of a coming orator of power and distinction. The great public speakers have traveled a difficult road to the greatness which the world has chosen to honor. Work is the price of power. Preparation of the long and wearying kind is the explanation of every success worth remembering. Men like to hold their children to this kind of preparation; they like to get the benefits which come from this kind of discipline of the faculties of others; but most of us shrink from the toil and the deliberate mastery of our inclinations toward ease—and this shrinking spells failure to reach the best that is possible for us.

* * *

I have been thinking of the power of the Grange to turn the hearts of the parents to the children and to the tasks and the interests which induce the children to develop their powers of body, of mind and of will. Every Grange lecturer has been advised to teach the young to become writers and speakers. Why not induce the men and women of middle age and those of riper years to become writers and speakers? Shall the boy be required to do what the man shrinks from doing? Is the woman excusable for being unwilling to try to do tasks similar to those which she would force upon her daughters? I am not sure but that years are a real advantage. "Knowledge comes, but wisdom lingers." We all profess to have better judgment and greater wisdom as we grow older. Shall we allow the loss of a little of the exuberant spirit of youth to serve as an excuse for not doing the things which our larger knowledge of experience ought to have given us a greater power to accomplish than is possessed by any young person? When we shirk our responsibilities and refuse to exercise our powers, in that day we begin to unfit ourselves to bear responsibilities; in that day we begin to waste our powers.

Many a boy has discovered with a sense of profound loss and humiliation that he is his own father's intellectual superior. It is not merely that he finds himself knowing certain facts which his father has forgotten or never knew, but that his own powers of thought are greater than those of the one man whose relationship should be that of guide, philosopher and friend, always able to understand the boyish point of view, always able to add the leaven of manly wisdom to the lump of youthful exuberance. So with many a girl. Good clothes and clean, plenty to eat and properly prepared—these are important to young and old alike; but are there not weightier matters than these? Shall the careful Marthas busy themselves with baking and mending and washing, and thus provide for the bodily comforts of their families while they neglect their own mental and spiritual housekeeping?

* * *

I have a notion that it is easier to work with the hands than with the brains; that many a man and many a woman makes the work of the farm or that of the house an excuse for not cultivating the higher powers. Our power to use our intellects is a newer power than that over our physical abilities, and we are able to use it with less of conscious effort. It is easier to become slaves to the habit of muscular effort than to the habit of mental effort; and so we fall into the round of wearying physical toil and refuse to use an awakened intelligence to plan easier and simpler ways of doing our daily tasks—ways which would open new opportunities on every hand for intellectual and spiritual development—opportunities and development which would keep us in sympathy with the new and vital things in the world about us and with the ambitions and the interests of the young and progressive lives which have been committed to our charge.

The hearts of the parents can, and ought to, be turned to the children; and it seems to me that one of the most important duties of the Grange is this—to keep its older members in genuine and hearty sympathy with the things and the thoughts which appeal so strongly to the young. We need to be their sympathetic companions as well as their wise guides and counselors; this for our own good as well as for theirs. D. W. WORKING.

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THE REFERENDUM IN OREGON

The country is watching the fate of the initiative and referendum in Oregon. The last State Grange placed two thousand dollars in the hands of the executive committee to be used in referring measures to the people which were passed by the legislature. Miss Clara Waldo, Lecturer of Oregon State Grange, says in her bulletin:

"The Grange has shown what can be done to tax corporations when the legislature failed to act, but the referendum lies apparently dead, useless and forgotten. We have not seen a single reference to the referendum during the session. It would never be guessed from the conduct of the legislature and the newspaper comments and criticisms thereon that any such thing as the referendum existed in Oregon."

Miss Waldo speaks of the referendum in several bright editorials, from which excerpts are made.

"The initiative and referendum were introduced to bring public affairs more completely under popular control. But no matter how vicious the legislative measures may be, they are apt to escape an appeal to the people unless some organization takes them up and gets them referred. It takes organization and some money to invoke the referendum, and the great body of the people are unorganized. The Grange has the funds to print referendum petitions and the organization to circulate them widely. It could do nothing more to increase Grange influence and membership among farmers than by showing them the power of organized effort. It might be well for the people to turn their attention to making the referendum compulsory instead of optional, as at present in certain cases. The option has not been exercised in a single instance."

All this goes to show that you cannot legislate intelligent action into people, and that no good can be secured without great effort on the part of the few.

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THE OBSERVATORY

In fourteen weeks Ohio organized sixteen Granges.

A deputy is known by the condition of the Granges in his or her jurisdiction.

"If I could belong to but one organization it would be the Grange. It is doing more for humanity than any other order."—L. H. Bailey.

"I want to unite with the Grange as soon as one is placed near me, and I will do all in my power to establish one near by."—S. K. Mardis, President Ohio School Improvement Federation.

"The Grange is the most effective organization for farmers that has ever existed. In the future I will work for it all that I can."—T. L. Calvert, Secretary Ohio State Board of Agriculture.

The committee on life insurance of the National Grange is working out a system of life insurance. This is the opportune time for the introduction of a cheap, safe and effective system of life insurance on the truly mutual plan.

National Master Bachelder was a prominent figure at the International Peace Congress, where he delivered an address registering the support of the Grange in behalf of disarmament as soon as practicable, and settlement of international difficulties by arbitration.

A live, energetic Grange is a blessing to any community. But a Grange that barely holds together is similar to a shiftless family. A little more energy on the part of the members and the Grange would be a living force in a community. Work is the panacea for weak Granges. Go to work.

It is to the interest of the farmers that industries be brought to their localities so as to bring markets for varied products close to them. Pull with the agencies that are working for the best interests of your locality. The value of land is enhanced by attracting people to near-by acres.

"There are many problems to be solved, and, as always before in our history, the farmers find the solution. I believe the Grange is to play an important role in the future progress of our country, and I desire to be connected with it."—C. B. Galbreath, Ohio State Librarian.

Geo. P. Hampton, of New York, who was one of the most active promoters of the denatured alcohol matters, is in Germany investigating manufactories and articles best suited for the economical use of alcohol for fuel, heat and motor purposes. He will have a message for our readers upon his return.

One of the speakers at the Peace Congress said that in a short time the nations would be bound together by strong fraternal bonds by intermarriage, and that instead of war all difficulties would be settled in an amicable manner. Wonder if he ever took part in the settlement of an estate or an election in a fraternal order?

No legislation in recent years has given greater possibilities for agriculture than that pertaining to denatured alcohol. In the northwest distilleries are going up in rural communities for the manufacture of alcohol. Promoters are abroad in the land, and farmers will need to exercise a great deal of judgment and care to avoid being swindled in co-operative enterprises. Remember the lessons taught by creamery sharks. If you get bitten, don't blame the law, but yourselves.

That Grange which depends upon the achievements of the State or National Grange for its excuse for existence is doing little to entitle it to the respect of a community. The first is simply the power that numbers give in wisely directed movements, and depends on the national or state official who leads. But to be of value in a larger way the Grange must be a vitalizing force in its own locality. It should co-operate with all agencies that work for good. It has no antagonisms save against evil.

Washington State Grange secured the enactment of laws providing for direct primaries, the Torrance Land System and an appropriation of $10,000 for farmers' institutes. It carried the bill for initiative and referendum through the lower House, but it was defeated by a narrow margin in the Senate.

There was a hard fight against the saloon at Pullman, where the agricultural college and experiment station are located. The bill passed the Senate, but, after one of the hardest fights of the session, was defeated in the House. Brother Kegley is not discouraged, but finds in the contest renewed courage for future battles.

Mrs. Buxton, wife of State Master Buxton, of Oregon, writes that Grange work is progressing rapidly in that state, and that they have organized nine Granges during the last quarter, and others are being worked up. They desire to take up the educational work that first had its inception in the FARM AND FIRESIDE, and have organized a class in their home Grange. Mrs. Buxton is an energetic and tactful woman and will make it a success.

The Buxtons own a fine farm of two hundred and eighty acres in the beautiful Willamette Valley, and are successful farmers as well as Grange workers.

Much is said about the influence of women as a reason for denying them the ballot. The women teachers of New York would have been in a sorry plight had they left their interests to be looked after by men, under the plea of "influence," for the male teachers were strongly organized, and fought with all the tools known to politics, to prevent female teachers from receiving equal pay for the same grade of work. The women teachers organized and won out in the contest, though bitter abuse and calumny was heaped upon them. I am sorry to say that women did not support their sisters as loyally as they should, for it was a fight for all women workers. Yet they were more loyal in support than women would have been twenty-five years ago.

The minimum wage for all teachers, regardless of sex, is now seven hundred and twenty dollars a year. Professor Seligman, the eminent political economist, predicts that women will be crowded out of the profession because of this equality of wage. He expresses sympathy for the women teachers, and acknowledges the justice of their position, while deploring the conditions. If women will only hold together in sentiment, women teachers will hold their own. "Equal pay for equal work."

AGRICULTURAL NEWS-NOTES

Carterville, California, is to have a $160,000 denatured alcohol plant. It will cover eight acres, and will utilize imperfect fruit, potatoes and sugar beets.

Of the $87,000 appropriation made to the Missouri Agricultural College at Columbia, $15,000 will be used in establishing a poultry department. The poultry industry in that state will now receive deserved attention.

The best agricultural idea of the twentieth century is the demonstration farm. Experience has shown that the work on one farm incites the owners of two or three other farms in the immediate neighborhood to rivalry. The circle of effort rapidly enlarges.

The "Mark Lane Express," a leading Agricultural paper of Great Britain, says: "The government estimate of the 1906 wheat crop is 33.66 bushels to the acre, which is more than ten per cent above the average of twenty-five previous years. The quality of wheat is also above the average.

It is claimed that a rust-resisting variety of wheat obtained from Algeria is now being successfully grown in the vicinity of San Louis Potosi, Mexico. This variety would undoubtedly do well along the Gulf of Mexico, where the other varieties of wheat cannot be successfully grown on account of the rust.

A recent estimate of the Census Bureau indicates that the present population of the United States is 83,941,510. This is an increase of nearly 8,000,000 people in six years. This rapid increase lends emphasis to the fact that a larger average yield to the acre will be necessary if production is to keep pace with consumption.

Photo by Verne Morton

"PARIS GREENING" POTATOES

Dr. W. Behrens, a statistical expert of Germany, asserts that Germany plants more potatoes in proportion to its area and number of inhabitants than any other country. The 1905 acreage exceeded eight million and a total of nearly two billion bushels of potatoes, sixty pounds to the bushel, were raised. The average yield to the acre was two hundred and seventeen bushels.

United States Consul D. I. Murphy at Bordeaux, France, in commenting on the salutary effects of the pure-food law, says: "The trade here is beginning to understand that food products entering the United States must be as represented, and that in his opinion the rigid enforcement of the regulations recently promulgated will reduce to a minimum, if not entirely stop, the misbranding and adulteration of oils, wines and other food products." *

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WINTER-KILLED MEADOWS

Owing to frost heaving and hard freezing before the roller could be put on the land, the new seedings that should be the main hay fields of the coming season are in a most deplorable condition. Never was the like seen in this vicinity. Often in low spots heaving has caused some loss, but on comparatively high lands this spring the trouble is noted, and not in patches, but over the entire field.

In the spring I plowed up a ten-acre field that in November gave promise for a grand mixed hay field for this year. Many two and three year old fields will be cut again the coming season, while many new ones will be turned under and planted with oats and other crops.

E. H. Burson.

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"MILLIONS FOR MOISTURE"

In a recent address before the National Geographic Society, Mr. C. J. Blanchard, Statistician of the United States Reclamation Service, gave an interesting account of the work of that department. This address was afterward published with illustrations in the "National Geographic Magazine." A vast work has been accomplished, he tells us, since June, 1902, when Congress passed the National Reclamation Act.

"The twenty-five projects upon which the government is now engaged, when developed to their full extent, will add 3,198,000 acres to the crop-producing area of the United States. Add to these thirteen other projects which are held in abeyance, pending the completion of the first mentioned, and which will reclaim 3,270,000 acres, and we have a grand total of 6,468,000 acres. This enormous area to-day is practically worthless. It returns revenues neither to the states in which it is located, nor to the nation to which it largely belongs. It is utilized only a short period in each year for grazing nomadic herds that are driven over it. Potentially, it is the richest, the most fertile and productive land in the world, and is capable of supporting in comfort an agricultural population as dense as can be found in any of the older settled parts of our country. By expending $60,000,000 on the twenty-five engineering works now in process of construction, the Reclamation Service will reclaim 3,198,000 acres, or a cultivated area equal to the total acreage in crops in the four states of Connecticut, Massachusetts, New Hampshire and Florida. The diversified crops, enormous yields from irrigated lands and the excellent prices for all farm products in the West warrant the assumption that this land will return annually an income larger than the farmers receive in the four states named. For comparison, let us say that the revenues an acre will be the same. It is apparent, then, that this area reclaimed will each year increase the value of farm crops by $60,000,000; it will add $232,000,000 to the taxable property of the people; it will furnish homes for 80,000 families on farms and in villages and towns."

In closing his address, Mr. Blanchard gave some valuable tables of actual and contemplated reclamation work. We reproduce them.

RECLAMATION PROJECTS NOW IN PROCESS OF CONSTRUCTION

Projects	Estimated cost	Irrigable acreage
Salt River, Arizona.....	$5,300,000	200,000
Yuma, California-Arizona	3,500,000	100,000
Uncompahgre, Colorado .	5,200,000	150,000
Minidoka, Idaho	1,800,000	80,000
Payette-Boise, Idaho	1,605,000	120,000
Garden City, Kansas....	260,000	8,000
Milk River, Montana....	1,500,000	40,000
Huntley, Montana	900,000	33,000
Sun River, Montana....	500,000	16,000
North Platte, Nebraska-Wyoming	4,100,000	110,000
Truckee-Carson, Nevada .	4,000,000	200,000
Hondo, New Mexico....	336,000	10,000
Carlsbad, New Mexico ..	600,000	20,000
Rio Grande, New Mexico.	200,000	15,000
Lower Yellowstone, Montana-North Dakota ...	2,700,000	60,000
Buford-Trenton, Williston, Nesson, North Dakota	1,270,000	40,000
Klamath, Oregon-California	2,400,000	50,000
Umatilla, Oregon	1,100,000	18,000
Belle Fourche, South Dakota	3,000,000	100,000
Strawberry Valley, Utah.	1,850,000	35,000
Okanogan, Washington .	500,000	9,000
Tieton, Washington	1,400,000	24,000
Sunnyside, Washington..	2,000,000	40,000
Wapato, Washington ...	600,000	20,000
Shoshone, Wyoming	3,500,000	100,000
Total.....	$50,121,000	1,598,000

PROJECTS UNDER CONSIDERATION AND WAITING FOR FUNDS TO BECOME AVAILABLE

Projects	Estimated acreage	Probable cost
Little Colorado, Arizona.	80,000	$4,000,000
Sacramento Valley, Cal...	500,000	20,000,000
San Joaquin Valley, Cal..	200,000	6,000,000
Colorado River, Colorado, Utah, California, Arizona	750,000	40,000,000
Dubois, Idaho	100,000	4,000,000
Lake Basin, Montana....	300,000	12,000,000
Las Vegas, New Mexico.	35,000	1,500,000
Urton Lake, New Mexico	35,000	2,000,000
Walker and Humboldt Rivers, Nevada	500,000	15,000,000
Red River, Oklahoma....	100,000	4,000,000
John Day River, Oregon.	200,000	10,000,000
Weber, Utah	100,000	5,000,000
Priest Rapids, Washington	50,000	2,000,000
Goshen Hole, Wyoming..	120,000	4,000,000
Total.....	3,270,000	$129,500,000

FARM AND FIRESIDE

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What Angora Goats Will Do for the Farm

BEFORE GOATING

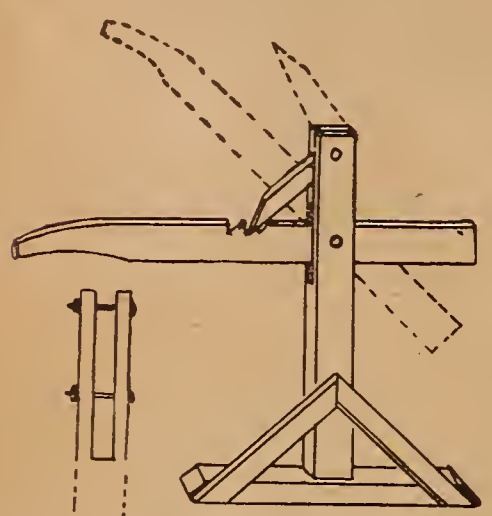
THE GOATS AT WORK

AFTER GOATING

A CHEAP, EASILY MADE WAGON JACK

THERE is no excuse for straining your back or offering the hired man an occasion to quit because of having to lift wagons and other farm implements with a rail and main strength, when you can easily make in an hour a substantial jack, such as shown in the cut, from "pick-up" pieces that are now lying idle, possibly in the scrap pile.

The upright may be of three by four or four by four inch stuff, of such a length as will allow the handle, or lever, to rest a little above the axle level of your highest wagon. This upright is cut into with a rip saw as shown in the sectional drawing, to admit the lever and the lock bar, that holds the handle in place after



the wheel is raised. Holes are bored and two bolts are inserted to hold the lever and lock.

The base should be five or six inches wide and twenty inches or two feet long, and well braced to the upright from either side, as shown.

RICHARD MAXWELL.

WHAT ANGORA GOATS WILL DO FOR THE FARMER

Angora goats are not indigenous to America, but were introduced to this country in 1848 by Dr. James B. Davis, of Columbia, South Carolina. Mr. Davis had served the Sultan of Turkey in a pleasing manner, and to repay him the Sultan gave him nine pure-bred Angora goats—seven does and two bucks. This was an exceptionally high tribute, as prior to this time there had been no goats shipped from that country, for it was against the law.

It is said that the farmer is the slowest of persons to adopt a new method in business, and at the time these goats were introduced it was true. At the present time a conservative farmer is as ready as any one to take a good proposition. It is due to this fact that the goats have not advanced as fast as they might have done if the farmers had not been afraid that the goats would not pay. Another point which was argued against raising goats was that they would not do well in this environment.

It was necessary for the Angoras to supply something that was not already obtained from cattle, sheep and hogs at that time. If the Angoras failed to do this, the farmer would have no use for them. But Angora goats were found to be a great addition to the farm, and money makers, for they would pick up a living where no other animal could live, required little attention and kept themselves in excellent condition.

One of the points in which the Angoras have never had an equal is their browsing qualities. What is usually spoken of as goating brush land is becoming widespread, and people are beginning to realize the value of goats in ridding land of brush. In the state of Washington the writer has seen great numbers of goats used in clearing the land. The animals thrive on practically any kind of browse, and there is very little along that line that they will not eat. But goats should not be kept on one kind of browse all the time any more than a horse should be fed the same kind of ration all the year round. They will eat any kind of weed except mullein. The herds will keep themselves over winter if sufficient browse is obtainable above the snow. In the winter the goats put in their best work, as the grubs extend above the snow, and the goats eat the last year's growth and kill the wood. The illustration on the preceding page shows the difference made in the grubs in one winter.

Last year a farmer thought that he would add some more tillable land to his farm, so he turned about two hundred goats in the grubs adjoining his farm land. The grubs were a tangle of vines, creepers and brush, as illustrated in the picture. The goats were kept on this lot of grubs, which were wired in, all winter, and were not fed anything besides what they browsed from the grubs. Very little care was taken of the animals save salting and watering them. A windmill was erected and a shed was built as shown in the background in the picture. This shed was made at very little expense, being constructed mostly of poles cut from the grubs. The cost of the care of the goats was more than covered by their increase. Most of the herd are graded Angoras, and the buck is a full blood. By breeding this year's goats with another full-blood Angora buck we expect to get some fairly good Angoras, as the hair on this year's goats is a great improvement over the old goats.

The only growing vegetation left on the land is ferns and trees which were too large for them to kill. The grubs are all dead and can easily be broken down and the land plowed.

So much for the browsing qualities. In the large stock yards thousands of Angora goats are received each week, and after they are dressed they are sold as sheep except where there is a special Angora market, and there the Angora mutton commands a higher price than the sheep. The flesh of the Angora is far superior to that of the ordinary "billy." It is delicious, tender and nutritious, and there is a growing demand for it in fashionable places.

The goat naturally seeks the higher and hilly country and does not do well in the swampy and low land. Rain is very objectionable to these animals and makes the mohair rough. The goats should have a shelter in which to go when it rains. The demand for the mohair in the United States is greater than the supply, so making the keeping of Angoras profitable to the farmer from that standpoint.

E. B. REID.

PRACTICAL POINTS ABOUT FERTILIZERS

In many farm papers the virtues of nitrate of soda are exploited prominently. I have been using this fertilizer for many years, and still use it occasionally in my garden. It often gives very striking results on early crops, such as lettuce, celery, radishes, green onions, and especially on beets, spinach and cabbage. Yet even in my garden work I can get along very well without nitrate of soda on any of these crops, provided I hold to my practise of manuring each piece of garden land freely with stable manure.

When it comes to common farm crops, I think the present price of nitrate of soda is too high for me to invest much money in it. The only plant food that we procure in it is nitrogen, and the air above our land is full of this. All we have to do is to plant crops that will draw nitrogen from the air and put it into the land. Such crops are the clovers, the vetches, beans, peas, cow peas, etc. The farmer who keeps up a regular three or four year rotation, with clover or cow peas or vetches as one of the series of crops, can produce good crops of wheat, oats, corn or potatoes, and good hay, too, without a pound of purchased nitrates.

What may be necessary, however, if the manure supply is short, is potash and phosphoric acid; and when these plant foods must be purchased it can usually be done by buying dissolved rock or acid phosphate, which is a plain superphosphate containing thirteen or fourteen per cent of soluble phosphoric acid, and muriate of potash, which contains about fifty or fifty-two per cent of potash in a readily available form. Three or four hundred pounds of the former, costing perhaps two or three dollars, and half as much of the latter, costing about three dollars and fifty cents to four dollars and fifty cents to the acre will usually give a big yield of clover, with a big yield of corn or potatoes following. This is the modern way of raising paying farm crops.

NITROGEN IN EXCESS

Recently a reader inquired what to do with a piece of land on which he could grow large potato tops, but no tubers. Barn-yard manure had been freely used on this land.

I have only once in my life grown a field of potatoes the tops of which made an excessive growth while there were not tubers enough in the hills to pay for digging. Usually I enjoy seeing my potatoes make large vines. With sufficient mineral plant foods in the soil the yield of tubers is sure to be large, also, provided the plants reach their full development and maturity.

When the tops grow excessively large, and no tubers form in the hills, an excessive amount of nitrogen, with a deficiency of the mineral elements of plant food, is indicated. An application of superphosphate (dissolved rock or acid phosphate being the most available and cheapest form), five hundred pounds to the acre, is the most likely to give relief.

Stable manure is but poorly supplied with phosphoric acid, and if liberal applications of such manure have been made right along we may well suppose that the soil contains not only much nitrogen, but also a good proportion of potash. It may be wise, however, even then to reenforce the potash supply by a light dressing of wood ashes or muriate of potash.

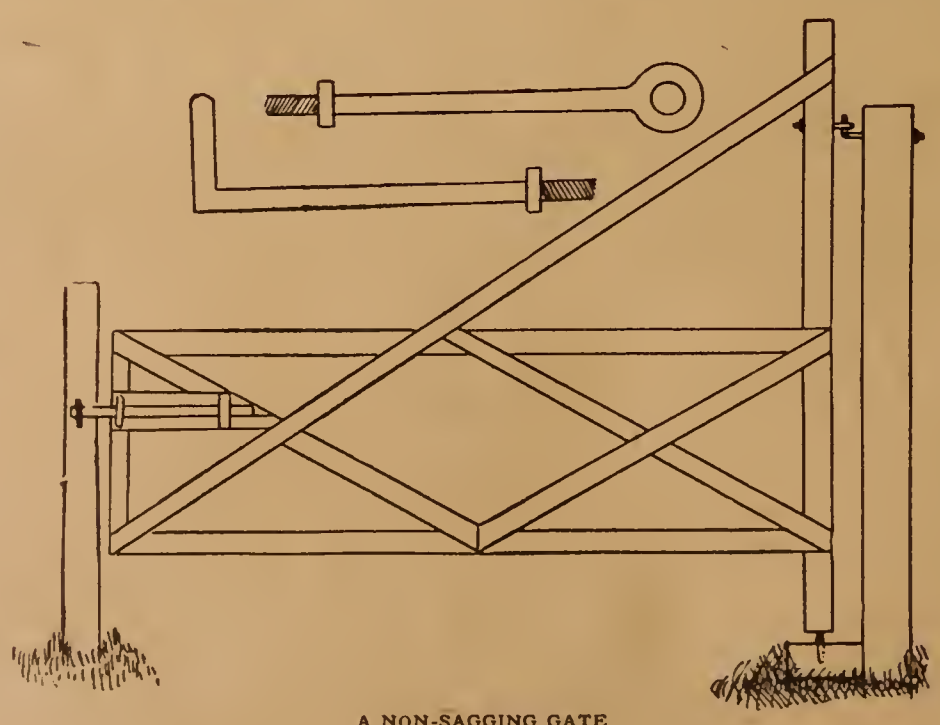
If I had a piece of ground, however, that appeared to be supplied with an excess of nitrogen, I would try to make use of this material in the production of crops which require much nitrogen and have a high money value, such as early cabbage, spinach, beets or other early garden crops, of course using also liberal doses of superphosphate, and perhaps some potash, especially in the case of cabbage and cauliflower. Strawberries are another crop that might be tried in such a case and under the same conditions of treatment, with prospects of making profitable use of the nitrogen in the soil.

USING RAW PHOSPHATE

All grounds for complaint about "nitrogen in excess" can easily be avoided by the free use of raw ground rock, or "floats," in the stables and on the manure heaps. Common stable manure has about ten pounds each of nitrogen and potash, but only about four pounds of phosphoric acid, in each ton. If we manure a piece of ground frequently with such manure we will surely have a lot more manure and potash in the soil than phosphoric acid. The use of floats will remedy this deficiency, and as raw ground rock is quite cheap, and contains about twice the percentage of phosphoric acid (insoluble in water) as does dissolved rock (soluble form), we can use floats quite freely as an addition to the manure, relying on the solvent action of the natural acids developed in the fermenting or decaying stable manure to make it soluble.

To an inquirer who proposed to buy Tennessee floats and use six hundred pounds of it on cow peas, and under cotton following cow peas, rather than three hundred pounds of acid phosphate, to the acre, Professor Massey replied: "There is no doubt that such a practise would be better than using the acid phosphate if you have a large amount of humus in your soil. Then the organic matter derived from the cow peas would make the floats available for the cotton the following year. When farmers fully realize the conditions needed for the success of the floats, we believe that the use of acid phosphate will be gradually abandoned. But it must be understood that the acids from decaying organic matter are needed to make the floats available."

I cannot imagine a better use to be made of floats than as absorbent in the stables, hen houses, etc., to be added to and mixed with stable manure. This practise will make the ordinary farm manure a complete and well-balanced fertilizer, and at the least cost. T. GREINER.



A NON-SAGGING GATE

TOMATO-PLANT SUPPORTS

Much has been written and more talked about the method of handling tomatoes. I tried the one vine tied to a stake last season, and it was very satisfactory so

far as quality was concerned, but the quantity was not there.

I also tried planting a sunflower early in the season where I would set my tomato plants, and trained a single vine on the stalk, trimming off the leaves of the sunflower from time to time as the vine reached upward. I found the sunflower stem equal to or better than a stake, and it bore a large head on the top full of seeds, which made the chickens lay later on. I had tomatoes five and a half feet from the ground on the sunflower support.

For practical purposes and a good yield of fruit I find no better support than one cheaply made by carefully removing the hoops from an old salt or apple barrel, sawing the staves in two, and nailing three pieces to the hoops. One of these supports set over each hill and pressed into the soil will hold the vines up sufficiently and cost next to nothing, and will last several years. This should be done early, before the vines begin to spread.

All suckers should be thinned out and the vines raised and equally distributed over the top of the stand. Tomatoes to bear well should be near the ground.

S. J. KEENEY.

A GATE THAT WILL NOT SAG

The principle of hinge hanging may not be new, but I have never seen another of such light, skeleton build as our non-sagging cattle gate shown in the drawing. The material used for its construction is generally to be found on every farm, so that all the usual necessary expense is that of having the blacksmith make the hook-and-eye hinge for the top of the gate, the lower hinge being merely an iron pin inserted in an upright end piece and set into a block at the base of the post, making the cost of construction very light.

The top and bottom boards are one by six inches and sixteen feet long. The hinge end upright is four by four inches and ten feet long, and the latch end is three by four inches and four and one half feet long. The braces are all of one-by-six-inch stuff.

When this gate is intended to turn other stock than cattle and horses, either woven or barbed wire, the former preferable, is stretched over the frame tightly and secured with staples.

To "hang" the gate, bore a hole in the bottom of the hinge end upright and drive in a three-fourths or one-inch iron pin, that when set will project about four inches from the bottom. This is inserted into the block shown at the ground line, spiked to the post, first screwing or spiking on an iron plate, with hole to match size of pin, to prevent wear and working loose. A similar plate should also be fastened to bottom of upright for the same purpose.

The top hinge is made of a three-fourths-inch rod, one end a hook, the other an eye bolt, with threaded ends. Nail a substantial brace on the top of the gate post and to a post set solidly in the ground in line with the fence (or a heavy twisted wire will serve the same purpose), to hold the post firm against weight of gate, and it will swing lightly and easily, remaining for years without sagging, providing the post is properly set.

R. M. WINANS.

WORK FOR A GOOD CORN CROP

A short crop of wheat means a big demand for corn. It is very plain that the wheat crop is going to be short, so now is the time for farmers to do their very best with corn. No pains should be spared to get as large a yield as possible by thorough cultivation.

Of one thing we can rest well assured: There will be no corn to burn next winter. High-priced flour means a larger demand for cornmeal, beans, etc., for home consumption. It means a larger demand and higher prices for potatoes. It means that people will eat less wheat bread, and more of other things. Every man who tills any soil should do his utmost to make it produce as much of the things he will need for his own use as possible. Many times I have seen early varieties of corn planted as late as the latter part of June and make a fair crop of sound grain. If the weather is against you in the ordinary seeding time, don't give up until you are sure it is too late to make a crop. Then sow millet for your chickens, rye for green food, and turnips for your own use.

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CUT DOWN THE FUEL AND FEED BILLS

Not long ago an old, close-observing farmer said to me, "I fear we are not going to have a good crop season this year. The winter and spring have been so erratic that I look for queer weather to continue throughout the entire season, and I am trimming my sails accordingly. One year when I was in debt for a forty-acre tract I had bought to get an outlet to a good road, we had a season that began very much like this, and I raised scarcely enough to feed the animals I had to keep to do business. When we saw we were in for it, wife and I began economizing in every way possible. I gathered every stick and corn cob on the place and put them in an old shed, which I patched up with bits of board. This stuff enabled us to go through the winter with about half our usual supply of coal. We had about sixty fowls, and we culled them down to forty-one. These we gave the best care we could, and quite a number of them laid all winter, and these eggs paid for all the groceries we had to buy, and for many other little necessities. Wife declared that we lived that winter on what was usually wasted or overlooked. When spring came the premises looked as clean and neat as a pin. We had used for fuel every particle of waste that would burn, so there was no cobs or litter of any sort scattered about. But you know coal makes a good easy fire and is always handy, when you have it, so we use it instead of gathering up the waste about the place. Every spring I hire a man to clean up the place and store all stuff that can be used for fuel in a shed I have for the purpose, and we thereby make quite a saving in our fuel bill. I learned that from our 'hard winter' experience. I can show you farm yards, lots of them, where I could gather up enough fuel to do all the cooking and heating for more than a year. And the owners of these yards are making a bare living, and some of them are in debt."

If it should happen that the corn crop is as short as the wheat crop is sure to be, it will compel a great many people to figure a little closely to get through and hold their own. It will pay well to give more attention to some of the little things, get rid of all animals and fowls that are not paying their way, and thereby cut down the feed bills. Many farmers have more dogs and cats than are needed, and are feeding them more than would raise and fatten a pig. Get rid of them. Cull the poultry over closely and keep only the best; give them thoroughly good care and they will bring in many a good dollar. Above all things, every farmer in the corn belt should do his utmost to grow every ear he possibly can. The price is sure to be good, and it will pay to do just a little better in the way of cultivation than ever before. A young farmer asks whether it will pay him to remove the barren stalks as soon as they can be picked out. It certainly will. Take them out and feed them to the stock, pigs, cows and horses, and save pasturage, and at the same time give the stalks with ears on a better chance to develop the grain.

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AUTOMOBILES AND FARMERS

One of the members of the Illinois legislature introduced a measure to regulate the running of automobiles on the public highway. One of its provisions was that the driver of any automobile traveling along the public highway should be obliged to stand up once every hundred yards or so and look carefully ahead to see whether any farm vehicle is approaching. As soon as a wagon is sighted he shall hastily proceed to take his machine apart and hide the pieces in the grass until the farm vehicle has passed. There were a lot more provisions of a similar nature in the measure, which was passed with a whoop, but ruled out of order by the speaker.

A farmer I am acquainted with once saw a horse become frightened at a passing automobile and turn over the buggy to which he was attached. From that time he became so bitter against the running of automobiles on the highways that he was termed a little cranky on the matter. He urged every farmer to carry an arsenal and open fire on any auto as soon as it came into sight. He tried every imaginable scheme to have the machines ruled off the road by the supervisors. One day while he was in another town about twelve miles distant from his home he received a telegram stating that one of his boys had just been seriously injured and telling him to come home quickly. The owner of a good automobile happened to be in the office where he was when he received the telegram, and at once offered to take him home in a jiffy. He hesitated a few moments, then accepted the offer. The roads were good, and they had to slow down for only one wagon, and the trip was made in thirty-five minutes. That ended all his opposition to automobiles.

Automobiles have come to stay, and the thing to do is to accustom farm horses that are used on the road to them. The farmer mentioned above hired a man with a machine to come to his place and run back and forth along the road until his driving team would stand perfectly still while the machine went by at a forty-mile clip. Since that time he has had no trouble whatever with them in passing automobiles. A lady who was driving a skittish horse along the road saw an auto coming, and she hopped out and tied a small shawl over the animal's eyes, then raised her hand to the driver of the machine, who slowed down and quietly rolled by, while she and her little girl sang as loud as they could as she drove along the side of the road. She then removed the shawl and went on her way. A farmer lately told me that he had to drive to town with a team that had never seen an auto, and as he was very certain he would meet several he blindfolded both animals. He met eight, three of them going like the wind, but got along without any difficulty. He afterward blindfolded only one of the animals and safely passed several machines. When he had one trained it was not a difficult matter to train the other. Reckless or drunken drivers are more to be feared than the machines. Every member of either class should be arrested and heavily fined, one for recklessness and the other for making a hog of himself. If the driver of a machine is reasonably careful it is easier to get a horse or team past one than past a hissing, fizzing traction engine that is standing still, yet we hear of very little kicking against these. Fred Grundy.

A FARM HOME IN IDAHO

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THE PLANNING OF FARM BUILDINGS

"Wife and I drew the plan of this house ourselves. It was the first one we ever built, but it has suited us first rate. If we were going to do it over again we would make some changes, of course; but not many."

And yet that house had several features that seemed to me very illy contrived. For one thing, there was a bed sink, as it was called, opening out of the sitting room. It was just large enough for the bed to stand in—no room to get around at the head or foot, or to the back side. Think of being compelled to make up a bed in such a room as that every day for fifty years! That is what the mistress of that home had done; and still they planned it themselves and took pride in the fact.

But the inconvenience of the thing was not its worst fault. In front of the bed always hung two great curtains, extending from the floor to the ceiling, shutting out all the light and air, save when the veil was drawn back. The ventilation of such a place must be terrible. In fact, I know it is; for many times, when I have stayed in that house over night, when I would come down in the morning, the air in the sitting room would be foul beyond description. It cannot be otherwise than that such a bed space must be unhealthful in the highest degree.

And there were other bad features about that house. In many ways it was not convenient for doing work. Had not the farmer's wife who lived there been a woman of strong body and great patience, it does seem as if she would have broken down long before she did, in body as well as in spirit. She belonged to one of the old-time housekeepers described by Harriet Beecher Stowe in her "Oldtown Folks," who always filled her kettle at the well and swung it by main strength, heavy as it was, to the crane over the fireplace to heat.

A change is coming over the style of farm-house and farm-barn architecture, for the construction of the barns of former days was just as clumsy as was that of the houses. In how many barns did there appear a single pair of stairs? Even ladders were sadly lacking, and what there were stood straight up and down. It was a feat in athletics to climb such a ladder. But often even these were conspicuous by their absence, the only way of reaching the scaffolds being by clambering up the timbers and braces of the frame. Now and then a farmer would make a decided improvement by putting pins a few inches long in the side of the center post.

But we are coming to see that life is too valuable a thing to be worn out in feats of this kind. In most modern barns you will find good easy stairs leading from one floor to another; while in the farm houses there is an effort to design the various rooms so that the strength of the wife may be spared. There is still much to be desired in this direction, though.

What ought the main features of a well-constructed farm house to be? Of course the size of the family, as well as the particular line of farming in which it is engaged, must determine to some extent many important details. There are certain general features, however, which may not be overlooked in every well-constructed house. First among these we may well place convenience in the matter of doing kitchen work. A good share of the work of the farmer's wife must be done in the realm of the kitchen. The problem should be, How can we save as many steps as possible?

Beginning, then, with the kitchen, let us range the other rooms around that so conveniently that as little time and strength as possible may be demanded for the work of preparing meals and putting away the tableware. This will imply that the pantry opens directly out of the kitchen. Here will be plenty of shelf room, and the pantry itself should be roomy, light and well furnished. Bins for sugar and flour should be arranged under the shelves for the table furnishings. At one side there should be a wide shelf for kneading bread and other work of the kind. The well should be close to the kitchen. Near by should be the woodshed. The dining room also should open out of the kitchen. Beyond the sitting room the parlor may be placed. Handy reach to the cellar ought not to be overlooked, either. All the rooms upstairs should be arranged so as to afford the greatest possible amount of space, together with the highest degree of light and pure air.

Under the house should be a cellar large enough for all the demands of the farm. I am of the opinion that the time will come, however, when we will place the cellar away from the house altogether for sanitary reasons. There must always be more or less objection to having fruit and vegetables under the rooms in which we live. All stairs should be easy of ascent and descent. If you never have thought of the difference it makes in the strength required to climb a pair of stairs, just compare the usual staircase found in a farm house with a pair really well designed and properly constructed.

Nor should we forget the steps up to the house. These ought to be easy to climb. Life is short at the best; can we be too careful how we spend it uselessly? Closets are at a premium in most farm houses. This is a serious fault. They should never be overlooked when planning the house. Every room in the farm house ought to be well lighted. And that is not all; no window should be darkened by heavy blinds or curtains. I know the ladies will say, "Oh, that is the man of it! Always pleading for open blinds! But think of the carpets and the coverings of the chairs!"

Let the carpets and the furniture go! Life is more than a pretty carpet or a few bright chairs. It is cheaper and far better to buy new ones once in a while than to pay doctors' bills or to grieve the heart out at a funeral. Give us light! Let the pure air in!

Just a word as to the farm barn. This, too, might be made far more convenient than it is in most cases. The big floor should be the center of all operations. Everything should radiate from this. The bays should be handy of access from this floor. The feeding chutes ought to be within easy reach likewise. There ought to be good stairs everywhere and plenty of room for everything. It is a great mistake to try to economize in barn room. And when planning the barn, it is well to have an eye to the future. Things accumulate. Next year we shall need more room than we do this year. So, plan larger than present conditions seem to warrant.

Above all, provide plenty of ventilation for the stock. Not the ventilation that comes through cracks and windows opening directly on the cattle, but good, intelligent, properly designed ventilation.

Edgar L. Vincent.

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MARVELOUS SOUTHERN PROSPERITY

To financial men, manufacturers, students, economists and statesmen the story of Southern progress along all lines since the war reads like a romance. Its material advance during the past decade is thus summed up by the "Manufacturers' Record" of Baltimore:

"One hundred and three million six hundred and thirty-nine thousand five hundred bales of cotton; 5,606,441,899 bushels of corn; 685,126,941 bushels of wheat; 659,037,244 bushels of oats; 120,000,000,000 feet of lumber; 571,629,336 short tons of coal; 263,839,252 barrels of petroleum; 27,342,566 long tons of pig iron; 15,692,158 long tons of phosphate.

"Capital invested in Southern cotton mills rose in the same period from $92,000,000 to $250,000,000, while spindles increased from 3,693,000 in 1897 to 9,760,000 in 1906. Its railroad progress was measured by 15,901 miles of trackage, and its exports to foreign lands through its ports aggregated $4,978,000,000. It has also given us evidence that it can increase its cotton production and hold dominion over that world staple. It has reversed the issue of competition with New England in cotton-goods manufacture, and it is now debatable if New England can keep pace with the South.

"In agriculture its development has been on a par with its industrial awakening. Louisiana, Texas and Arkansas, under irrigation, have raised its figures for rice production from 96,800,000 pounds a year to more than 600,000,000 pounds. The South is now a chief center of the world's phosphate interests, its Tennessee development in rock mining alone netting an increase of 372,000 tons of phosphate, exclusive of the output of South Carolina and Florida. Louisiana dominates the world's sulphur markets, and cotton-seed oil, allied to these interests, has led to a capitalistic invasion of Texas. Oil interests in Texas, Louisiana and Indian Territory have developed an important and valuable industry. The most far-reaching accomplishment of the last decade is its ability to improve its method of cotton marketing, thereby lessening its dependence upon the financial interests of other sections, so as to practically assure a continuance of good and profitable prices for cotton. This has materially added to the wealth of the South.

"The strange part of this wonderful development is that it is scarcely known throughout the South itself, and not at all, generally speaking, north of the line of Mason and Dixon. To the student who has followed this advancement yearly, a new South, with improvements in city, town and county, representing hundreds of millions of dollars, is being constructed."

HOW MANURE DETERIORATES

THE plant food in a ton of manure varies greatly with the exposure it has suffered under the weather conditions. If ordinary fresh farm manure contains ten pounds of nitrogen, two pounds of phosphorus and ten pounds of potassium to the ton of manure, with a dry matter basis of twenty-five per cent and seventy-five per cent water, the manure that will result from holding such fresh manure until it becomes more or less rotted will vary greatly in composition, depending upon the conditions to which it is subjected. If the fresh manure is exposed for a few weeks to the leaching of heavy rains, half of the nitrogen and potassium may be leached out, while smaller losses of phosphorus and dry matter occur, so that a ton of the resulting manure, in which the urine (which usually contains about half of the nitrogen and potassium) has been replaced by rain water, may contain only six pounds of nitrogen, two pounds of phosphorus and six pounds of potassium. This difference of four pounds each of nitrogen and potassium does not represent the total loss, because if the pile contained ten tons of fresh manure there will be left perhaps only eight tons of the leached manure, even with the same percentages of dry matter and water.

If, however, the pile of manure suffers less from leaching, but more from fermentation and heating for several months, the loss of dry matter or total weight will be great and the loss of nitrogen considerable, while the loss of phosphorus and potassium will be less. Thus, after six months of such conditions, the ten tons of manure, with one hundred pounds of nitrogen, twenty pounds of phosphorus and one hundred pounds of potassium, may be reduced to five tons of manure containing sixty pounds of nitrogen, eighteen pounds of phosphorus and eighty pounds of potassium. This rotted manure, with the same per cent of dry matter as the fresh, would contain in one ton twelve pounds of nitrogen, three and six tenths pounds of phosphorus and sixteen pounds of potassium. Rotted manure produced in this way is usually richer per ton than fresh manure, but the total amount of manure has been so reduced that the actual loss is very great. —Cyril G. Hopkins in the Farmer's Review.

GRAIN AND PASTURE

It is very doubtful as to whether it pays to feed young animals or animals which have not previously had much grain, much, if any, while the supply of grass is abundant. This is especially true of animals which are not intended for the early fall market. Tests made by the Iowa Experiment Station along this line, where two bunches of cattle of equal quality were allowed the run of equal areas of good blue-grass pasture, one receiving grain in addition, and the other lot on grass alone, would lead us to believe that practically as heavy and much more economical gains can be secured from grass alone as from a ration of grain in addition to grass during those months when grass is plentiful. During the hot, dry months a small ration of corn was found to be very helpful. This will be governed to a certain extent by the supply of grass. If the grass is short, some grain can be fed to advantage. The preparation of corn for cattle on grass is an important point. When cattle are changed from dry feed to grass, their mouths soon indicate a tenderness that makes the dry, hard corn difficult of mastication. This calls for preparation of some kind. Many advocate the grinding of the corn. In our experience, shelled corn which has been soaked for about twelve hours has given the best satisfaction. The shelled corn which passes through the animal undigested is more likely to be utilized by the hogs which follow the cattle. Where there are no hogs to follow the cattle, and corn is high in price, it should always be ground, as this will save about twelve per cent. Thus, the price of corn will determine the advisability of grinding the same.

Cattle on grass should be fed grain but once a day, and that always in the evening. The advantages of feeding in the evening are that the cattle, being full of grass then, will consume the soaked shelled corn more leisurely than when the stomach is empty. They soon lie down, and rumination commences, and is far more effective on the corn when the stomach is full of grass. Careful observation leads us to believe that less undigested corn is found in the droppings when the cattle are fed on full stomachs in the evening than when they are fed on empty stomachs in the morning.

An abundance of grass is one of the surest ways of securing good gains. Too many cattle feeders overcrowd their pastures, and by so doing are always scarce of grass. "Grass to the knees" is a good motto for the cattle feeder to frame in his own mind and to put into practise on his farm. Plenty of pure, fresh water should always be available. No effort should be made, however, to induce feeding cattle to consume large quantities of water, as it is not considered to be conducive to the most economical gains. Fattening cattle usually show a strong desire for salt, and this craving should be satisfied with a reasonable supply. The excessive use of salt leads to a heavy consumption of water, which is not consistent with heavy gains. Where shelter is provided, granular salt may be used; but if exposed to the weather, rock salt only should be supplied.—The Farmer and Breeder.

Review of the Farm Press

THE ORIGINAL DRY-FEED HOPPER

The dry-feeding system, or the dry-feed hopper, is by no means a new discovery. The main new feature in the plan is in the material fed. Instead of giving the fowls the ordinary rations in this way, as was practised by some poultrymen from time beyond memory, the modern dry feeders use a so-called dry mash of material which is not agreeable enough to the taste of the fowls to tempt them to overeat. It consists of a large proportion of bran and other bulky, unattractive feed, so that the fowls will not eat enough of it to fully satisfy their needs or to become overfat. The remainder of the feed is given as dry whole grain or cracked grain fed in the litter, enabling the feeder to regulate the quantity of the ration by adjusting the amount of whole grain fed, while the labor is greatly reduced by the avoidance of moist feed; but the modern feeding hoppers are not essentially different from those which have long been in use. Thus, the following description taken from a "Cultivator" of 1843 might well be written by a poultryman of the present day. This hopper frame is practically on the model of a crate, but with sloping tops, and the bottom slightly raised from the ground.

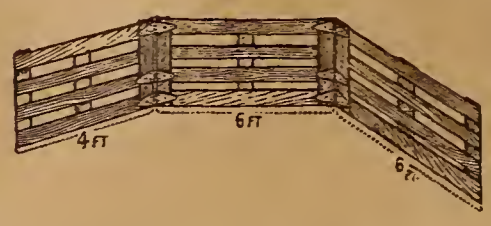
"Take a stout plank of the ordinary width, and of any length, but it is scarcely worth while to let it exceed six feet, unless you have more than a hundred fowls. To each end nail a piece of the same plank, eighteen inches or two feet high, in such a manner that the long plank which forms the bottom of the hopper will stand about four inches from the ground. The upper part of these end

pieces is cut angular, so as to receive a peaked roof. Nail a thin piece of board, commonly called thin stuff, four or five inches wide, along each edge of the bottom plank, so as to raise about an inch and a half above the plank. A similar strip, but not more than two inches wide, is to be nailed from one end to the other, connecting the upper parts of the end pieces. Against the inner sides of the two end pieces nail two battens, meeting on the bottom plank, and forming the letter V, as shown by the dotted lines on the end of the figure. The distance apart of the upper end of these battens will be determined, of course, by the width of the end pieces. Having first fastened narrow upright slips along on each side, wide enough apart to admit the passage of the head of a fowl between them, by nailing them to the top and bottom boards, you take two thin boards, nine or ten inches wide, and place them inside, resting on the battens on the end pieces. If the feeding hopper is long, these boards will require a support in the center. They should not approach each other below nearer than half an inch, nor come within half an inch of the bottom plank. Then take a broad, thin board, or two if necessary, and secure them firmly on one side, for the roof, letting it project over the sides. The other side should be attached to the ridge, or peak, of the roof, by iron or leather hinges, in order to permit it to be lifted up to pour in the feed.

"The hopper is now ready for use. You pour in half a bushel or more of feed; as the fowls eat it out it continues to descend, and is prevented from escaping by the narrow slip of board at the bottom, and the roof prevents it from being injured by the weather. I think there would be an advantage gained by continuing the roof over so far as to shelter the fowls themselves from the rain while feeding."—The American Cultivator.

DEVICE FOR SORTING HOGS

Every year I crate a good many hogs to ship to my customers. We used to have a great deal of trouble in getting the hog we wanted from the feeding lots into the smaller pens, and from there into the crate. Those who have to follow this method in sorting out their hogs know just what an aggravation it is. Often it is necessary to drive the herd around the yard several times, until, perhaps, some one of the number is overheated or injured. That was our experience, at least,



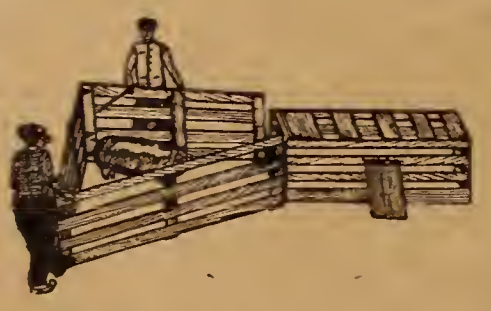
until we struck what we consider a very happy idea. Now, instead of having a lot of trouble when it comes to crating a hog, we use a device consisting of three short gates hinged together, as shown in the sketch. We use strong door hinges and three of them to each joint. The hinges should be secured to the cleats rather than to the panels of the sections. This will then allow each section to fold over onto the center piece when not in use.

As will be seen by the drawing, one section is four feet long, while the other two are six feet long. In folding the sections together the short one is folded in first. This allows the long one to lay next to it. The total length will be seen to be sixteen feet. At first this may seem a little short, but we have tried different lengths and find this to be the most handy and convenient of any. It is often necessary to make quick moves in sorting hogs, so that the three gates must not be made too heavy and unwieldy to handle.

The panels may be either four or six inch boards. However, we find four-inch panels plenty strong enough, and it reduces the weight of the whole device considerably. The two lower panels are four inches apart; above that they are six inches.

When we want to crate a hog we pen a bunch up in one of the smaller lots, and with one of us at each end of the sorting device we approach the bunch which contains the hog we wish to crate. By moving toward them slowly they will not be frightened, and often we can work in among the herd and get our gates thrown around the hog we are after almost before he knows it.

Sometimes we can use the fence as a fourth side to advantage. In such cases we may have several hogs enclosed, and this allows more room to work. As soon as we have enclosed the hog we are after with the gates one of us goes after the crate, which we bring right into the yard and place the open end of it at the gap



which we make between the two ends of the gates. A few moments more and we have succeeded in accomplishing our end.

Regarding the cost of this device, which we call a sorting gate, we would say that our experience is that it is comparatively nothing compared with the work and aggravation that it saves. It requires only a few hours of time to set it up, and it will last for years. It may be used in other ways. We find it very handy to pen a litter of pigs where we wish to get them out on grass in the barn yard. We have used this device for a good many years and would not know how to get along without it.—The Homestead.

ECONOMY OF SILAGE

The silo enables us to preserve in an economical manner and palatable form the largest proportion of the food properties of the corn plant known at the present time. Experts tell us that the necessary losses of nutrients incurred in the siloing process need not exceed ten per cent. By beginning to feed early, before the top few inches have spoiled, this loss can be reduced to five per cent.

The cost of placing the corn crop in the silo is comparatively less than caring for it in the old way. In the silage you have succulent feed eaten ravenously at all seasons of the year. The grain, being masticated with the roughage, is nearly all crushed, and its softened condition causes it to be practically all digested and assimilated; while in the corn fodder the leaves will be eaten with relish in winter, but the seventeen per cent of the food value of the original plant represented by the stalk is lost. In feeding the grain there is either the trouble and expense of grinding, or a loss of twenty per cent of the whole grain not masticated.

In determining the stage for cutting the grain, the ripest ears should have all kernels dented and hard and the greenest should have begun to glaze and dent. In very hot, dry seasons, when the lower leaves have fired, it is advisable to harvest somewhat earlier. On the other hand, corn too ripe and dry does not pack well in the silo, and whenever air enters, mold and decay are sure to follow. In case the corn develops with unusual rapidity on account of continued hot, dry weather, extra care should be taken in packing it firmly about the edges of the silo.

Making the corn into silage is a means of preserving the grain as well as the stalk in the best possible condition for feeding. Silage tends to a heavy flow of milk; with clover hay, economical milk can be produced with a small amount of grain. It is available as a succulent food during the winter as well as when pastures are short and dry. It involves less labor than soiling and permits the keeping of a much greater number of cows than when pasture alone is depended upon. It makes the grower comparatively independent of bad weather at harvest time. —P. N. F., in Southern Ruralist.

PULVERIZED LIMESTONE

A FACTOR IN SOIL FERTILITY

Outside of limestone areas, very much land is deficient in lime—carbonate of lime—pulverized limestone, the dominant factor in soil fertility, whose presence is essential to the effectiveness of the natural stores of plant food in the soil, and to the fertilizers we apply. The result of this deficiency is seen in the poorer kinds of natural forest growth, in poor clover sods and in lack of power of the land to stand cropping. The deficiency grows greater as land grows older. Some of the soluble lime leaches down, crops remove some of it, and acids accumulate, which make the demand for lime greater than at first. Much of this land would require four to six tons of ground limestone to the acre to give it the "advantages" of a limestone soil. Some of it would require our usual commercial fertilizers and humus-making material also, but the presence of the lime is essential to the effectiveness of the plant food, whether that be the inert stores in the land or the supply given in commercial fertilizers. However, the inert natural stores in much of this unproductive land are not small.

While four to six tons of ground limestone may be needed to reach the most desirable condition, an application of any size is an approach toward it. One to two tons is doing a lot of good on much land where this deficiency in lime exists. After years of study, roused by the effect of lime on my own land many years ago where a deficiency of lime had let free acids check the growth of clover, I believe that the matter of supreme importance to owners of vast areas of land outside of limestone sections is the supplying of the lime deficiency of their soils. Even where clover grows fairly well there often is a deficiency of lime that limits the yields of crops. If the lime deficiency is made up, good rich humus-making material can be grown with ease, and the conditions favoring plant growth are promoted.—Alva Agee in the National Stockman and Farmer.

DAIRYING GOOD FOR THE FARM

Dairy farming improves the land, increases its fertility and leaves the farm on which it has been conducted in better condition and more valuable to prosperity. Dairying adds to the profits of the farm without inconveniencing the other branches of farming carried on. Mixed farming is recognized as the best, and where dairying is included the most progressive farming will be found.

Dairying fits in and rounds out perfect farming. It fills a place that cannot be filled by any other industry with the same degree of financial success. It is the highest form of agriculture.—Kimball's Dairy Farmer.

Gardening

BY T. GREINER

POTATOES AND POTATO SCAB

I do not know of any better or surer preventive of potato scab, in soils where the scab fungus is already present, than a green crop plowed under to give to the land a somewhat acid character.

We seldom find seed potatoes entirely free from scab infection, and when such potatoes are planted in alkaline soil the product is sure to be scabby. An application of wood ashes, if generous, and sometimes one of lime are also sure to bring on scab.

My neighbor and friend, J. S. Woodward, says in "Rural New-Yorker:" "Plowing in any kind of green crop has a tendency to make land acid, and with us is very seldom attended with a show of scab. In fact, the heavier the crop of clover, or rye even, plowed in, the better crop we get, and the better quality of potatoes. Our land is a fine loam of a rather sandy order. The best crop of potatoes we ever grew was after plowing in a crop of rye so heavy we could scarcely get it all into the ground."

All this is in accord with my own experience. No need of being afraid of green stuff plowed under for the potato crop.

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DUST SPRAYS

The supposed greater convenience and reduced expense of dust applications over liquid sprays on orchard trees, potato vines, etc., seem to hold out irresistible temptations to some of our readers, and I have been asked again about the advisability of using Bordeaux powder. I confess that I have never taken kindly to the idea of making dust applications, and do not propose to use them. The operator who fills the air around and about a tree or in a potato patch with dust can hardly fail to inhale some of it, and the idea of having to fill my lungs with dust, a portion of which consists of an arsenical poison, has nothing in it that is in any way alluring to me.

Possibly, if the station experts who have made thorough and comparative tests, had given a verdict in favor of the dust spray, I might have overcome my prejudice and tried the dust spray. These experts, however, have unanimously reported that the results obtained from this form of fungicides was by no means equal to those obtained from liquid fungicides, and consequently I can see no good reason for using the Bordeaux powder or other dry forms of fungicides.

But we do not all think alike. Maybe some readers may wish to try the newer formula suggested by a recent circular issued by the Missouri station, and for which the station claims that by it the work is simplified and much of the annoyance of flying dust and lime is avoided. This formula is as follows: Dissolve ten pounds of copper sulphate in four gallons of hot water. From a barrel of quicklime five pounds of the best is taken to make a milk-of-lime solution with four gallons of water. The remaining lime is slaked to a perfectly dry dust. The copper and milk-of-lime solution are poured together simultaneously into a third vessel, and stirred until no greenish streaks appear, after which the mixture, water and all is scattered in the lime dust and mixed with a rake. While still somewhat damp it is rubbed through the sieve and spread out to dry. This requires a day or two, after which the mixture will keep indefinitely. These quantities make about two hundred and fifty pounds of powder.

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TOBACCO DUST FOR WOOLLY APHIS

Of recent years tobacco dust has been extensively used to prevent injury from the woolly aphis. L. A. Goodman, the well-known secretary of the Missouri Horticultural Society, has the following on this subject in a recent issue of the "Rural New-Yorker."

J. M. Stedman was perhaps the first professor to use tobacco dust for this purpose. He says:

"I was discoverer of this method of fighting this insect, and can say that from several years' experience with the tobacco that the only benefit derived from its use will come from the use of tobacco dust. I have never been able to get any benefit whatever from the use of tobacco stems or strippings. These stems and strippings make the very best and most effectual dust, but must be powdered by machinery. When I first started my experiments, tobacco dust was a drug on the market and had no value whatever; since the experiments were successful, tobacco dust has sold for ten dollars a ton, the next year for fifteen dollars, the next year for twenty dollars, and it is now sold for twenty dollars a ton, but half by bulk (which means vastly more by weight) is dirt, thus showing the means of adulteration employed to-day."

In a bulletin issued by the Missouri Experiment Station, Professor Stedman says:

"I would advise the use of finely powdered tobacco or tobacco dust as a means of killing the root-inhabiting forms of the woolly aphis on apple trees, and would urge its use every spring as a preventive. Always apply the tobacco dust, as above directed, by removing the earth from

Fig. 1—Japanese cedar (Auracaria excelsa) grown from a cutting of a side branch showing the weak reclining habit of this plant when grown from a side branch in contrast with the erect form of the same plant grown from cuttings of the central shoot

around the trunk of the tree for a distance of two feet and from four to six inches in depth, and evenly distribute the tobacco in this excavation, taking care to place it close to the trunk also, and then cover it with the earth. Judging from experiments, it is believed that the liberal use of tobacco dust, applied as stated, will cheaply and effectually kill and hold in check the woolly aphis and prevent serious injury from this pest. In planting an apple orchard in newly cleared timber land, it is advisable to cultivate the land in some other crop, such as corn, for two years before the apple trees are set out. This will kill the woolly aphis that may be on the roots of the wild crab and allied trees, which would otherwise infest in great numbers and seriously injure the young apple trees."

We have used tobacco dust when planting trees, using about a pint put around the tree after the hole was half filled up, so that the roots were covered, and find it an excellent means of keeping the woolly aphis from the roots. We have also applied from a pint to a quart to trees three to five years old, digging away the soil, applying the tobacco dust, and covering the dust with the soil again; this we find a good preventive and somewhat of a fertilizer. We have also applied loads of stems and the coarser stalks as a mulch, and find it the only mulch which has been a safe one for us to use. It helps to keep the borers from the trees, holds the woolly aphis in check, keeps the mice from girdling, protects the trees both in winter and summer, as does any other mulch. It is the very best mulch that possibly can be used. We have never had any trouble with mice in this mulch, although they may get in it. I should advise using all the tobacco that can be secured, and mulch all the trees possible of every kind and nature.

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GOOD RADISHES

If radishes go to seed, instead of making good roots, as reported by an "Old Subscriber," there must be something wrong.

Get good seed from a reliable seedsman, preferably of one of the first-early, turnip-rooted, quick-growing varieties. Select a rich, warm, sandy loam, if possible new, having been clover sod recently broken and manured heavily the year before, but not the same year, with stable manure, and sow the seed early in spring, or for succession at intervals during the fore part of the season, and if you keep the maggots off you will most likely get good radishes. Of course, if left for any length of time after they have made edible roots they are sure to go to seed. It is their nature.

Fruit Growing

BY SAMUEL B. GREEN

THE INDIVIDUALITY OF VARIOUS PARTS OF PLANTS

We ordinarily think of a plant as having the same general characteristics in all of its parts. That is, that cuttings from a branch would make just the same kind of a tree that a cutting from the stem would make. In the case of a few plants, however, this is not so, and probably there is a greater difference in this respect than we are prone to believe.

The Japanese evergreen, known as Auracaria excelsa, shows marked variations in plants grown from the side branches and those grown from a central stem. In Fig. 1 a plant is shown grown from a side branch. This makes a reclining plant, and has to be tied in order to give it an erect position. The specimen from which this plant was grown from a cutting is shown in Fig. 2, and it is noted for its very erect and regular form. I have grown many plants from the side branches of this plant, but have always found them to remain as side branches, and never to take on the erect form of the parent plant.

Quite a number of plants commonly grown are what are known as bud variations—that is, the variations are due to

Fig. 2—Japanese cedar (Auracaria excelsa) showing its very regular and upright form when grown from seed or from cuttings of the main central shoot

changes in the branches occurring on the plant, which may be as marked as any that occur from seed, although it is seldom so exceedingly variable.

Fig. 3 shows a plant of the variegated Abutilon, which has maple-shaped leaves, the outside of which have a rim of perhaps a fourth or half inch of clear white, while the balance of the leaf is green. Such variations in plants occasionally revert back to the original type, and in this case it will be noted that the tallest branch shows none of the white variations, but has reverted to the type of the parent plant. It will be noted, also, and I have frequently noted the same thing in others of this class of plants, that where branches of a plant of this description revert back to the original type, it grows with more vigor than other branches of the plant with the variegated foliage on which it is found. At the time the photograph was made the variegated portions of our plant had been pruned severely for cuttings. There are a large number of bud variations among roses and carnations, some being important commercially.

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SCALE ON OLEANDER

J. M. B., North Yakima, Washington—The scale to which you refer on oleander is often quite troublesome. I do not think, however, it has caused the leaves on your plant to wilt and drop off; that is probably due to some other cause. I would suggest that all badly infested leaves be removed and burned, and then the whole plant washed with strong whale-oil soap, using a soft toothbrush to remove the scales. Each leaf must be taken in the hand and treated separately in order to do the work well. It will probably be necessary to repeat this about once a year.

SETTING OUT APPLE TREES IN APRIL—BLIGHT

E. L., Clotho, Montana—No harm will come to your apple trees from setting them out by the middle of April, provided the ground was in good condition and the soil well firmed over the roots. There is no need of watering trees set out when the ground is as moist as it has been this spring. What is needed is to pack the soil firmly about the roots, and the moisture in the ground will then be sufficient to keep them moist. Trees that have not yet started into leaf need very little water. There is no necessity of watering now, nor do I think your apples will be at all injured by the cold weather you so much fear. In fact, a cold, backward spring like this is rather favorable to newly transplanted apples and other hardy plants.

Blight is a bacterial disease caused by bacteria—that is, germs. In other words, it is an infectious disease. There is practically no way of entirely preventing it. The best treatment is to cut off and destroy the infested portions as soon as they are seen. Anyway, the diseased tracts should not be allowed to remain on the trees over winter, since they are the source of the new infection which starts in the spring.

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THE LABOR QUESTION

Recently I received a letter from a leading fruit grower of this state which read something like this: "I am given to understand that you do not have the difficulties that I and others have in securing and retaining good help. Kindly tell me if this is so, and how it is that you are (I may say) so very fortunate."

I replied: "It is true that I do not seem to encounter many difficulties, but tact in a measure is brought into use, perhaps. We have men with us to-day that rain or shine have never left us in over twenty years. Others have been with us from ten to fifteen years. One or two left for a season, but found their way back again.

"For our tenants we build comfortable houses, for which we charge a fair rent—less than village houses of the same size would rent for. The wives and daughters have a chance to do office work when there is work to be done. Overtime is not asked or expected of any man unless paid for. Every one is treated honestly and in such a way that he is made to feel comfortable and at home. Fair wages are paid the first of each and every month.

"It is a very unusual thing to see a tenant moving off our grounds. Englishmen, as you may know, are inclined to

Fig. 3—Flowering maple (Abutilon) with white variegated foliage, a sport from the old Abutilon darwinii. This plant has one branch that has gone back to the original green leaves of the parent type. It is the strong branch to the right of the figure

settle down if they are comfortable. We like Englishmen. They are generally very good workmen, and strictly honest. We help them to make themselves comfortable, and they stay by us."

E. H. Burson.

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Do you know there are fake farmers as well as fake advertisers? Farm and Fireside doesn't have anything to do with either. We believe the Farm and Fireside folks are the most prosperous and most genuine farmers in the country.

Poultry Raising

BY P. H. JACOBS

PERIOD OF LAYING

It is of greater advantage to have the hens lay over a long period than during a shorter length of time, for the reason that the attempt to derive too much within a certain period may defeat the object in view by incapacitating the fowls. A hen may be induced to lay more eggs than would be the case if left to her natural inclinations, as the skill of the manager has much to do with the work of his flock.

To force a hen to an extreme may destroy her usefulness. Her capacity is limited, and when she is driven beyond that capacity she breaks down entirely. No hen can be forced to lay more than a certain number of eggs. Nature gives her a period of time during which this can be done, and it is not difficult to supply her with the needed elements for this purpose, any surplus being only a waste, for if she cannot divert the materials to the production of eggs she will either void them or lay them up in the storehouses of her body as fat, and will then become utterly unfit to perform her functions thoroughly as a producer of eggs.

There are many methods by which some endeavor to force hens to lay. One will put red pepper in the food to stimulate them, not being aware that red pepper has no more influence on the hen than so much sugar or salt. Another believes in putting tonics in the drinking water, believing that they are helpful. Tonics are composed of nearly all substances, many of which are rank poison, such as copperas, etc. Even the well-known Donglass mixture is taken by the hens with the water they drink to assist them in laying the eggs. Yet when the hens succumb to the several effects of the nostrums, they are condemned as not being hardy, or the difficulty is attributed to some disease.

FAIR PROFITS

A liberal allowance for drawbacks and a close comparison with the results usually obtained in other industries should convince those entering into the business of keeping poultry that there is no get-rich-quick methods connected therewith.

To make a success of the poultry business one must have a liking for the work and be willing to labor, as poultry will not thrive unless given close attention. There are many who go into the poultry business and make a good living out of it; others expect too much for the little work they are willing to bestow. Persons going into the poultry business often make too large an estimate of profit.

The only way to know what one is doing is to keep an account, also a record of eggs used and sold, and at the end of each year take an account of stock. But it has been found that poultry when properly managed will pay in proportion to the care given. It is the poultryman or farmer himself who decides the success or failure of the venture. There is nothing in the business to guarantee success more than is known in other industries. It is the one who fully understands the duties and the details incident to poultry management that will succeed where others have failed.

BREEDS AND CROSSES

The pure-bred fowl is the result of experiment, and cannot be improved upon unless patience, experience and time are devoted to that purpose. Much of the discouragement incident to the keeping of poultry may be traced to crossing of the breeds. As a rule, when one begins to experiment with pure breeds, in attempting to gain some desirable quality, or to unite the characteristics of two breeds into one, failure occurs, for the reason that a knowledge of how to select the best individuals for the purpose is wanting, and not only the work of a single season should be given, with the most careful condition and attention, but the experiments will naturally need to extend into succeeding years.

It has frequently happened that one or more enterprising farmers have introduced pure breeds into their communities, thereby creating considerable interest in poultry among their neighbors, with satisfactory and profitable results. While the evidences of improvement are usually visible for a year or two, many of the flocks soon appear to revert to mixed breeds, due to crossing, and the characteristics of the original pure breeds being obliterated, mongrels again hold their position.

When farmers understand that the pure breeds are themselves the result of crossing for certain characteristics, the breeders being compelled to extend their work over a period of many years, they will not attempt to gain better qualities by crossing meritorious breeds, as such a course destroys, instead of improving, them. The Brahma of to-day is the result of careful selection for about sixty years, and it is not yet considered perfect. To cross the Brahma with some other breed, with a view of making improvement, would cause the breed to become extinct; and even if an improvement could be effected, the work would be slow and difficult, for as a rule but one or two individuals could be selected each year as a satisfactory result of the experiment.

The farmer who has had but little experience with pure breeds should be satisfied with one breed, and he will find that the pure-bred fowls pay well. As to which breed he should select, it is almost impossible to advise him, each having its admirers, who are ready and willing to claim that it is the best for all purposes. In fact, climate, prices of foods, space allotted the flock, proximity to markets, transportation facilities, shelter and other conditions must regulate the selection of the breed.

One fact always appears, which is that the mongrel fowl should be discarded, for the reason that there is no uniformity in a flock of cross-bred fowls. A flock cannot improve if the pure breed is not employed for that purpose, and this is not as satisfactory as keeping a flock composed entirely of pure-bred individuals. The farmer or poultryman who resorts to the crossing of two distinct breeds will find that his flock has lost all uniformity and that the individnals differ so much as to reduce the flock to one of mongrels.

The farmer who determines to use the pure breeds should not cease with the matter of deciding which breed may answer his purpose, but should also seek strong and vigorous individuals as the foundation upon which to bnild up a flock, for it is upon the vigor and stamina of the individuals that success is to be obtained. Strong and healthy birds will entail less work, and also prove more profitable, than a flock selected without regard to the physical condition of the individuals, especially where one is making a beginning with pure breeds in order to establish something better than mongrels.

The careful observation and selection of the best of the flock each year is the best mode of improvement. It is the method adopted by all breeders who aim to make each breed better as the years come and go; but the farmer should observe for himself, and endeavor to know how to select. He knows what he has done with his flock, knows which hens are the most satisfactory, and knows how best to feed for eggs and for choice carcasses for market; but if he does not know the characteristics of each member of his flock, he should make closer observation in future, as the individual is an important factor in every flock.

Crossing is an old practise, and has been in vogue since pure breeds came into favor, but it may be claimed that no flock has ever existed longer than two years after the farmer began to cross, for he will, as has been the case with hundreds, fail to satisfy his expectations. He then leaves the ranks of the real promoters of the poultry interests, and allows his flocks to degenerate into scrubs of low degree, because he is no longer interested.

BOWEL DISEASES

From the beginning of spring until winter again appears the greatest number of inquiries from readers of the FARM AND FIRESIDE are for remedies for some form of bowel disease, and in many cases the writers mention that their birds have cholera. The fact is that cholera is a very rare disease, but few ever having seen a case of it. Indigestion is frequently mistaken for cholera. If a bird is noticed to be drooping, and moves with difficulty, it indicates indigestion, and it will soon be more pronounced in symptoms. It is caused by feeding them too much food, such as corn, and if continued the disease, which appears trifling at first, will develop into something more serious, and death will result.

As soon as a bird shows the faintest symptoms of indigestion it should have all food withheld for at least forty-eight hours, and be then put on plain diet, in small quantity. Administer a one-grain rhubarb pill to each.

Another excellent remedy for indigestion is to add a teaspoonful of tincture of nux vomica to every half gallon of the drinking water for a few days; but the main point is to withhold all food for forty-eight hours, and then allow one meal a day, for a week or ten days, or until a complete cure results.

After repeated experiments, hyposulphite of soda, if given with one half its weight of powdered mandrake root, is claimed to be the best remedy known for cholera. Give the mixture in teaspoonful doses twice a day, and begin its use as the symptoms appear. When a fowl has the cholera it drinks ravenously, shows a nervous, anxious expression, and the droppings are greenish in color, changing to white.

DAMAGE FROM DEPREDATORS

A large number of farmers are careless with poultry after the day passes, notwithstanding the fact that it is during the night that the greatest damage is done. How to prevent these depredations is a problem of long standing. Near streams of water minks will come up and devour the fowls, even in daylight. In such cases the best protection is a yard surrounded with a wire fence. At night the poultry house should be closed, using wire over the doors and windows, to allow of ventilation.

Traps can be bought, however, that will catch them, but the better plan is to prevent any small animal from entering, as dogs and cats are sometimes guilty, and even the fox and opossum will visit the barn yard to seize the birds if opportunity allows.

AILMENTS AND REMEDIES

It is not difficult to treat a horse or a cow, should either be sick, as an attendant can give his whole time and attention to the one animal, but a large flock of hens cannot be so carefully treated, as the individuals cannot be handled on account of their number, hence the failure to cure disease among large flocks. This difficulty has largely contribnted to the disappointment in the keeping of large flocks. The unexpected arrival of some contagious disease that sweeps off a large number of the best fowls reduces the capital to that extent and leads to failure.

Diseases are to be expected with poultry, and also with the animals on the farm, but the ravages are not as swift as with poultry. The changeable weather from winter to spring, when the days are alternately cold and damp, leads to roup. Rheumatism, colds and other ailments are the lot of the fowls in damp weather, and it is only when these difficulties appear that the danger of keeping large flocks is realized.

Remedies must be given to the sick fowls in their drinking water, as many of them will not eat if not in good health. To attempt to force medicines down their throats is a task that is not conducive to creating a fondness for the keeping of poultry in large numbers.

ECONOMY IN FEEDING

The cost of the food should be considered from the standpoint of profit. If corn has been giving good results, and then the hens cease to lay, corn is no longer economical. It may probably be purchased at less outlay than any other food that can be used, but it will not be cheap because it is of no further use. Lean meat, fresh from the butcher, is an expensive food when it cannot be conveniently procured, yet if the hens demand it, and the results are favorable, it is cheaper than corn.

There is no saving in buying grain because of its cheapness when other foods are demanded, and it is this point that the poultryman should keep in view. He should feed for eggs, no matter what kind of food may be required. It is not advisable to feed meat alone to fowls, unless they can forage where grain and grass are plentiful.

As long as the corn-growing sections of the West can send wheat and corn to every portion of the country at a lower price than other foods can be grown, just so long will those grains be used by farmers for feeding purposes. If too much corn prevents the hens from laying, by making them too fat, then corn is not cheap at any price; but when wheat and corn can be used with other foods, and the hens are productive, there is an advantage in utilizing such grains as foods for poultry.

These are vacation months for the boys and girls. They need their playtime, but don't let them waste it. They can pass it very pleasantly and very profitably by getting some of their neighbors and friends to subscribe for FARM AND FIRESIDE. We are paying liberal wages for work during the summer months. Encourage the boys and girls to spend their time profitably.

Live Stock and Dairy

FROM PIG TO PORK

It is a problem to keep pigs healthy and get them to market in the shortest time and in the best possible condition. In keeping pigs healthy we have found it necessary to pay attention to three things—namely, their bowels, beds, and feed.

Just after weaning, the pigs are liable to get out of condition, especially if they are weaned in the fall of the year. Sometimes they become wormy, and often they are afflicted with a kind of diarrhea, the latter being occasioned by the feeding of sloppy foods. It is a good plan to keep plenty of ashes and salt where they can have free access to it. When the diarrhea becomes serious it will be well to feed burnt corn and keep plenty of charcoal handy.

Then, too, for the health of the brood, good sleeping quarters are essential. The beds should be warm in winter and cool in summer and well ventilated at all times. It is never advisable to let young pigs sleep in an old straw rick. They will pile up under the straw, and some of them are most certain to be smothered. In winter time they will get very warm beneath the straw, and when they come forth into the cool air are very likely to take cold and get to coughing. Sometimes cholera will break out among them, especially if the straw is damp and decaying. In fact, old straw stacks are germ breeders, and hogs, young or old, have no business running to them winter or summer to sleep. In warm weather the brood can sleep most anywhere if the ground is dry. They do not need bedding of any kind. In severe weather they can get along with a light bedding of straw if it is protected from the northwest winds, the snow and sleet.

Again, the pigs must be fed good wholesome food and plenty of it if they make good porkers. A stunted pig almost invariably makes a stunted hog. There is no economy in starving the shoats until they have grown large enough for the fattening pen. In truth, my experience has proven that it pays to keep the pig moving right along until he is ready for the market. Plenty of corn, with a mixture of oats and bran for slops, will make his sides puff out with fatness and cause a rapid growth.

A farmer who had had large experience in hog raising told me not long since that he had experimented and proven to his satisfaction that it paid to keep the pigs on a full feed from the time they were weaned until they were ready to sell. By pursuing this method he was enabled to make six-months-old hogs weigh from two hundred and twenty to two hundred and fifty pounds. It is no doubt a bad plan to let shoats or hogs run down in flesh, for disease is more liable to strike them and greater amount of feed must be consumed in getting them ready for the market.

W. D. Neale.

◈

BREEDING AND TRAINING FOR DAIRY QUALITIES

Good breeding and training are two of the most essential points that the successful dairyman must keep in mind, in order that he may grow and develop a class of dairy cows that will prove profitable for use in his herd.

He needs to have a knowledge of heredity influence, of feeding and environment, of the effect of culture and training, and developing for use in that particular direction.

There is not a step in the production of a single animal, from the first problem of mating to the last of finishing for practical use, that does not require close study and balancing with all the care that the most learned chemist employs in his most critical labors. Breeding good dairy cows is no game of chance, no guesswork or a trick of fortune, but a complex study worth the attention of the most intelligent scientists and deep thinkers.

The natural tendencies of all breeds is toward deterioration, and unless we overcome this our animals will multiply and perpetuate defects and deficiencies and make the herd unprofitable and a bane and stigma to the breed to which it belongs.

The cow that is not fed and developed in the proper manner when a calf, and not milked when a cow, loses her capacity to give milk, and transmits the same incapacity to her descendants.

It is not necessary to reflect upon any breed of cattle or other domestic animals, for the same rule applies to all breeds and kinds. The Jersey breeder who breeds for color of the hair, horns, tongue and switch at the expense of dairy qualities of his cow injures the vitality and milk-giving qualities of the breed in every case. The dairyman who tries to breed his cattle along the lines of beef production impairs the dairy qualities of his herd in every case, and the shorthorn breeders and the advocates of the dual-purpose type of cows who are trying to incorporate both beef and dairy qualities in their animals are doing a great injury to both the beef and dairy interests.

The dairyman must have a definite aim and breed for a special purpose and develop the desired qualities in his cows.

The relative importance of the sires and dams in determining the qualities of the descendants depends upon the inherited qualities and how strongly they have become intensified by careful feeding and judicious selection and breeding and upon their comparative vigor and stamina.

The whole dairy business depends upon the cows more than any one point; much of course depends upon the care and feed, but the best of care and feed will not make a poor cow a good one, nor will it bring a cow with a capacity of two thousand pounds of milk and one hundred pounds of butter up to six thousand pounds of milk and three hundred pounds of butter a year.

There are a number of good dairy breeds, and all have many good and tried qualities, and are profitable if rightly managed. Good and efficient dairy animals do not necessarily mean extremely fancy or pure-bred stock.

I would not say a word against pedigreed stock. It is essential and has its place. But if you select pure-bred cows, insist upon the good qualities as well as pedigree.

Pedigree is valuable only when we understand what is back of it, the records and performances of the individuals that are in it. When we understand the qualities of the sires and dams, the grandsires and granddams, great-grandsires and great-granddams, we have a basis on which to calculate as to the qualities of the calves and cows that will come from mating animals whose pedigree we have.

The modern dairyman wants a cow whose temperament and functions are for milk and butter, and the great problem that confronts many who are contemplating going into the business is how they can get cows that have these desired qualities for use in their herds.

I would advise the purchase of a few good individuals, and study of their breeding, and the purchase of an excellent bull that came of a succession of sires and dams that were of a good milking ancestry, and by a liberal system of feeding grow up and develop my own cows.

I have been among dairymen most of my life, and I do not know of a place where it would be possible to buy an efficient herd of dairy cows at a price that a man could afford to pay. I mean a herd of practical business cows that would turn a good profit at the pail, and not a herd of pure-bred dairy cows.

There are men who have them, but they do not care to sell at any price that a man could see out. They know a good thing, and a man who has had the patience to grow up a good herd of cows is not one who is thinking of going into other business.

W. M. Kelly.

◈

PIGS ARE PROFITABLE

Farm and Fireside reader, Maryland, writes: "In your opinion, can we Eastern farmers compete with the West in swine husbandry?"

Yes. At present prices for pork in all our markets, I know of no farm animal quite as profitable as good hogs well fed. The sow pig will be a grandmother before the contemporaneous heifer calf is a cow.

In swine husbandry we Eastern farmers have everything in our favor. If you are a beginner, don't plunge into or among hogs. The successful hog man has things to learn by association. Start with a few well-bred ones and let your experience grow with them. Grow corn and clover.

W. F. McSparran.

◈

STORY OF GOLD AND GILT

THREE YEARS WORK OF TWO COWS THAT DIFFERED GREATLY IN THE MAKING OF MILK FROM THE SAME KIND AND AMOUNT OF FEED

At the agricultural experiment station are two cows, the story of whose work is well worth telling. They were brought up alike on a farm near Elgin, Illinois, and obtained their early education in the same herd of one hundred cows. Here at the university, with the very same surroundings and equal opportunities, they have drifted far apart in character, and their progress has been in opposite directions. It is not a difference of hide, or horns, or temper; it is not that one is wild and the other a pet; it is not a difference of beauty or intelligence, but solely a difference in the way they have worked, a difference in the money they have earned for the owner.

All the milk of these cows has been weighed and tested for three years. A record has been kept of every pound of feed consumed by each animal, both summer and winter.

Each year Gold produced on the average 11,390 pounds of milk containing 405 pounds of butter fat, but during the same time Gilt produced on the average only 3,830 pounds of milk with 138 pounds of butter fat.

These cows were both cared for in the same way; they were given the same kinds of feed and allowed to eat all they wanted. Gold ate one half more than Gilt, but produced nearly three times as much milk.

Equal amounts of feed made in the one case 188 pounds of butter fat, and in the other case 100 pounds of butter fat. The one cow produced nearly twice as much as the other from exactly the same feed in kind and amount.

Counting the butter fat at 23 cents a pound, and taking out the exact cost of feed in each case, the one cow brought in a profit of $34.59, while the other lacked $5.62 of paying for her board at market prices of feed, each year.

This comparison, exact and complete for three years and including the record of both milk and feed, means a great deal more than a single year's comparison or one in which it is necessary to introduce an estimate.

It would be very gratifying indeed if it could be truthfully said that these two records are extreme and exceptional, and therefore do not stand for any general condition of the dairy business in Illinois. But the very opposite is true.—Dairy Lesson, Agricultural College Extension, University of Illinois.

ROBERTA, AN AGED GUERNSEY

Roberta was purchased by me from James Logan Fisher, of Philadelphia, September 29, 1887, and has been in my possession ever since.

Roberta is registered in the American Guernsey Cattle Club Herd Register No. 3157. Sire, Imported Fargo, No. 756. Dam, Queenie 3rd, No. 507. She was born October 8, 1885.

She is now nearly twenty-two years old, is in excellent health, and is giving a good flow of milk. Roberta has given me eighteen calves; her last calf was born in 1905.

MRS. BENJAMIN W. RICHARDS.

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A HIGHER STANDARD OF JUSTICE IN BUSINESS

SECRETARY ROOT takes a hopeful and wholesome view of political and business affairs. In a lecture on "Citizenship," at Yale, he said:

"The prosecutions and convictions for violations of the anti-rebate law, things which were not heard of thirty years ago, are not evidence that we are growing worse, but evidence that we are growing better; that our government is applying a higher standard of justice in the control of public utilities.

"The fact that American popular government now has serious and difficult questions to deal with is no just cause for distrust. Government always has difficult questions to deal with, and we are assured by the advance already made of democracy's competency in the future. The great questions of capital and labor, of concentrated corporate wealth, and of diffused and general well-being, are merely natural incidents to progress."

◈

GOVERNMENT REGULATION OF RAILROADS NECESSARY

In an address before the National Manufacturers' Association, Interstate Commerce Commissioner Prouty said that the federal government should exercise some authority over the capital accounts of interstate railroads, and probably should place a valuation on railroads.

Such action seems absolutely necessary to put the roads under honest management, prevent the watering of stocks and the imposition of unjust rates, and to safeguard the interests of the real owners of the roads. Mr. Prouty says:

"When Mr. Harriman, by dealings like those in Chicago & Alton, enriches himself to the extent of many millions, he has not created that money; he has merely transferred it from the possession of some one else to himself.

"Railroad securities ought to be favorite investment for the savings of the small and great alike. It is not a feeling of apprehension that the people will confiscate any railroads which prevents permanent investment in railroad stocks, but rather uncertainty as to the future of those stocks. When it once becomes certain that no railroad stock or bond can be issued without the consent of the government, and that every dollar which comes from their sale shall be legitimately invested in the property, and when no interstate railroad can buy a dollar in the stock of any railroad without the consent of the government, railroad securities will be much more likely to assume their proper place in public confidence.

"Any comprehensive scheme of legislation should give to the railways the right to force and maintain traffic associations and to discuss and agree upon competitive rates."

One by one the men who are actually in charge of the transportation business are expressing themselves in favor of the government regulation. Second Vice-President Brown of the New York Central Railroad recently said in a public address:

"I am firmly in favor of the regulation of the railroads and all other corporations by the nation and the states. The power which creates can and should regulate. From the standpoint of the public and the railroad, I would regard any backward step in the great principle of corporate regulations as a serious mistake.

"I have said, and I am glad to repeat, that the business of the railroads should be as open and public as that of the national banks; rates should be reasonable, stable and absolutely equal to all. This regulation of the railroads, however, should be undertaken in a spirit of the most liberal conservatism. The radical, the agitator, the reactionist on both sides should be suppressed."

FOR THE BETTERMENT OF LIFE IN THE OPEN COUNTRY

In his Lansing address on the notable occasion of the Golden Jubilee celebration of the founding of Michigan Agricultural College, President Roosevelt made a vigorous appeal to American farmers for higher education, a broader application of the science of farming and for better rural social life. Following are some of his trenchant remarks:

"The fiftieth anniversary of the founding of this college is an event of national significance, for Michigan was the first state in the Union to found this, the first agricultural college in America.

* * *

"Our school system has hitherto been well-nigh wholly lacking on the side of industrial training, of the training which fits a man for the shop and the farm. This question is vital to our future progress, and public attention should be focused upon it. Surely it is eminently in accord with the principles of our democratic life that we should furnish the highest average industrial training for the ordinary skilled workman.

* * *

"We have been fond as a nation of speaking of dignity of labor, meaning thereby manual labor. Personally I don't think that we begin to understand what a high place manual labor should take; and it never can take this high place unless it offers scope for the best type of man.

* * *

"The calling of the skilled tiller of the soil, the calling of the skilled mechanic, should alike be recognized as professions, just as emphatically as the callings of lawyer, of doctor, of banker, merchant or clerk. The printer, the electrical worker, the house painter, the foundry man, should be trained just as carefully as the stenographer or the drug clerk. They should be trained alike in head and in hand. They should get over the idea that to earn twelve dollars a week and call it 'salary' is better than to earn twenty-five dollars a week and call it 'wages.'

* * *

"The chief offset to the various tendencies which have told against the farm has hitherto come in the rise of physical sciences and their application to agricultural practises or to the rendering of country conditions more easy and pleasant.

* * *

"Ambitious native-born young men and women who now tend away from the farm must be brought back to it, and therefore they must have social as well as economic opportunities. Everything should be done to encourage the growth in the open farming country of such institutional and social movements as will meet the demand of the best type of farmers. There should be libraries, assembly halls, social organizations of all kinds. The school building and the teacher in the school building should, throughout the country districts, be of the very highest type, able to fit the boys and girls, not merely to live in, but to thoroughly enjoy and make the most of the country. The country church must be revived. All kinds of agencies, from rural free delivery to the bicycle and the telephone, should be utilized to the utmost; good roads should be favored; everything should be done to make it easier for the farmer to lead the most active and effective intellectual, political and economic life.

* * *

"Nothing in the way of scientific work can ever take the place of business management on a farm. We ought all of us to teach ourselves as much as possible; but we can also all of us learn from others; and the farmer can best learn how to manage his farm even better than he now does by practise, under intelligent supervision, on his own soil in such a way as to increase his income. But much has been accomplished by the growth of what is broadly designated as agricultural science. This has been developed with remarkable rapidity during the past quarter of a century, and the benefit to agriculture has been great.

* * *

"The farmer must prepare for using the knowledge that can be obtained through agricultural colleges by insisting upon a constantly more practical curriculum in the schools in which his children are taught. He must not lose his independence, his initiative, his rugged self-sufficiency; and yet he must learn to work in the heartiest co-operation with his fellows.

* * *

"The farm grows the raw material for the food and clothing of all our citizens; it supports directly almost half of them; and nearly half the children of the United States are born and brought up on farms. How can the life of the farm family be made less solitary, fuller of opportunities, freer from drudgery, more comfortable, happier and more attractive? Such a result is most earnestly to be desired. How can life on the farm be kept on the highest level, and where it is not already on that level, be so improved, dignified and brightened as to awaken and keep alive the pride and loyalty of the farmer's boys and girls, of the farmer's wife and of the farmer himself? How can a compelling desire to live on a farm be aroused in the children that are born on the farm?

* * *

"The drift toward the city is largely determined by the superior social opportunities to be enjoyed there, by the greater vividness and movement of city life. Considered from the point of view of national efficiency, the problem of the farm is as much a problem of attractiveness as it is a problem of prosperity. It has ceased to be merely a problem of growing wheat and corn and cattle. The problem of production has not ceased to be fundamental, but it is no longer final; just as learning to read and write and cipher are fundamental, but are no longer the final ends of education. We hope ultimately to double the average yield of wheat and corn to the acre; this will be a great achievement, but it is even more important to double the desirability, comfort and standing of the farmer's life.

* * *

"First in importance, of course, comes the effort to secure the mastery of production. Great strides toward this end have already been taken over the larger part of the United States; much remains to be done, but much has been done, and the debt of the nation to the various agencies of agricultural improvement for so great an advance is not to be overstated. But we cannot halt here. The benefits of high social organization include such advantages as ease of communication, better educational facilities, increased comfort of living, and those opportunities for social and intellectual life and intercourse, of special value to the young people and to the women, which are as yet chiefly to be had in centers of population. All this must be brought within the reach of the farmers who live on the farms, of the men whose labor feeds and clothes the towns and cities.

* * *

"It is true that agriculture in the United States has reached a very high level of prosperity; but we cannot afford to disregard the signs which teach us that there are influences operating against the establishment or retention of our country life upon a really sound basis. The overextensive and wasteful cultivation of pioneer days must stop and give place to a more economical system. Not only the physical, but the ethical, needs of the people of the country districts must be considered. In our country life there must be social and intellectual advantages as well as a fair standard of physical comfort. There must be in the country, as in the town, a multiplication of movements for intellectual advancement and social betterment. We must try to raise the average of farm life.

* * *

"Farmers must learn the vital need of co-operation with one another. Next to this comes co-operation with the government, and the government can best give its aid through associations of farmers rather than through the individual farmer; for there is no greater agricultural problem than that of delivering to the farmer the large body of agricultural knowledge which has been accumulated by the national and state governments and by the agricultural colleges and schools.

* * *

"The people of our farming regions must be able to combine among themselves, as the most efficient means of protecting their industry from the highly organized interests which now surround them on every side. A vast field is open for work by co-operative associations of farmers in dealing with the relation of the farm to transportation and to the distribution and manufacture of raw materials. It is only through such combination that American farmers can develop to the full their economic and social power. Combination of this kind has, in Denmark, for instance, resulted in bringing the people back to the land, and has enabled the Danish peasant to compete in extraordinary fashion, not only at home, but in foreign countries, with all rivals.

* * *

"All over the country there is a constant complaint of paucity of farm labor. Without attempting to go into all the features of the question I would like to point out that you can never get the right kind, the best kind, of labor if you offer employment only for a few months, for no man worth anything will permanently accept a system which leaves him in idleness for half the year.

* * *

"Most important of all, I want to say a special word on behalf of the one who is too often the very hardest worked laborer on the farm—the farmer's wife. I emphatically believe that for the great majority of women the really indispensable industry in which they should engage is the industry of the home. There are exceptions, of course; but exactly as the first duty of the normal man is the duty of being the homemaker, so the first duty of the normal woman is to be the homekeeper; and exactly as no other learning is as important for the average man as the learning which will teach him how to make his livelihood, so no other learning is as important for the average woman as the learning which will make her a good housewife and mother. But this does not mean that she should be an overworked drudge.

* * *

"The best crop is the crop of children; the best products of the farm are the men and women raised thereon; and the most instructive and practical treatises on farming, necessary though they be, are no more necessary than the books which teach us our duty to our neighbor, and above all to the neighbor who is of our own household.

* * *

"I believe in the happiness that comes from the performance of duty, not from the avoidance of duty. But I believe also in trying, each of us, as strength is given us, to bear one another's burdens; and this especially in our own homes. The school is an invaluable adjunct to the home, but it is a wretched substitute for it. The family relation is the most fundamental, the most important, of all relations. No leader in church or state, in science or art or industry, however great his achievement, does work which compares in importance with that of the father and the mother, 'who are the first of sovereigns and the most divine of priests.'"

Summer Time

BY WILLIAM EBEN SCHULTZ

When the good ol' days o' summer, with their hotness, come around,
An' the lack o' balmy breezes makes us seek the shady ground,
There are thoughts that make a discord, oft, in Nature's sweet-bells' chime—
They're that winter, spring or autumn beats the good ol' summer time.

But it don't make any difference, for we know it's never true,
Just as winter's frozen heavens can't come up with skies o' blue;
An' if ever any weather comes near reachin' the sublime,
It's the well-beloved season o' the good ol' summer time.

You may talk about the freshness o' the balmy air o' spring,
You may call unto your witness almost any other thing;
But the time o' watermelons, which I fancy as I rhyme,
Is synon'mous (that's a plenty) with the days o' summer time!

◈

The Rhododendron

ONE of the prettiest flowers to be found in the mountains of North America in July is the great laurel, the rosebay or the mountain rose, which is better known as the rhododendron. The handsome evergreen leaves and the remarkable beauty of the flowers leave a pleasing effect in the minds of those first seeing them. In some instances whole mountain sides are adorned with these pinkish-white flowers, which give the effect of prodigality. Down in the shady nooks by the tumbling mountain streams they bloom in sweet security. The gnarled and twisted branches of the bushes almost defy human penetration. In some places they are so closely interwoven that a bird can scarcely fly through a thicket of them. With all their beauty they detest the taming and pruning of the ruthless hand of man. The mountain is their home, and the crushing and taming influences of man are as distasteful to them as confinement is to the red man of the forest. Removed from their natural and congenial surroundings they pine and refuse to come forth in all their beauty and glory. To see rhododendron in all its glory you must go to it.

◈

Preached Straight Gospel

REV. DR. JOSEPH S. BRADDOCK, pastor of the Middle Creek Presbyterian Church in Winnebago County, Illinois, has made the unusual record of preaching to the same congregation from the same pulpit for forty-two consecutive years. On June 27th next, should he survive, he will be ninety years old, and he has tendered his resignation to take effect on June 30th. It has been his desire to continue preaching until he arrives at that age and then to lay aside his work.

Reviewing the remarkable work of Doctor Braddock, Mr. J. L. Graff states that in a period of nearly half a century Doctor Braddock has preached twice a day in the Middle Creek Church, and for fifteen years after he accepted the charge he preached three times a day, holding service in the afternoon in some other church in his county. In the capacity of either Bible-class teacher or superintendent he has attended Sunday school every Sunday during nine months of each year. It has been the custom to close the school in the winter months.

In forty-two years' time Doctor Braddock has never by reason of sickness been prevented from occupying his pulpit, and he has never been confined to his bed two days at a time during his entire life. In all of that time he has preached to three generations of the same congregation, has baptized the grandchildren of babes to whom he administered the same rites, has performed two hundred and fifty marriage ceremonies, and for a long time preached all of the funeral sermons in the region in which he was located. In all this time he has never had a jar of any kind with any of the three generations to whom he expounded the gospel.

Emerson once said: "I believe in a spade and an acre of good ground. Who so cuts a straight path to his own living by the help of God, in the sun and rain and sprouting grain, seems to me a universal working man. He solves the problem of life, not for one, but for all men of sound body."

In more than four decades Doctor Braddock made, within a territory that radiates six miles from his church, from six to ten pastoral calls a week, and it is only because he is growing physically unable to continue these calls that he has announced his readiness to lay aside his work.

Doctor Braddock attributes his success to the fact that he preached the straight gospel to a congregation of good listeners and to the fact that he regularly kept up his practise of visiting at their homes the people of his congregation.

Doctor Braddock was born in Pennsylvania, was married when he was a college boy, removed to Kentucky, where he established a ladies' seminary, was burned out by John Morgan, the notorious rebel raider, and went to Illinois in 1865, where ever since he has remained without a change.

Photo by Charles A. Hartley

A CORNER IN RHODODENDRON

◈

Preserving Our Forests

COUNTING the 17,000 acres contained in the thirty-two reserves created by President Roosevelt to thwart the plans of the great lumber syndicates, the national forests now aggregate 142,000,000 acres, a domain larger than France or the German Empire, five times as large as New York and six times as large as Ohio. It is the intent of the government to utilize the vast store of wealth embraced in the forests for permanent profit to the whole people. These tracts will be made to produce perpetual crops of timber just as certain as those of cotton, corn or wheat, although a much longer time will be required for the crops to mature. Last year the receipts amounted to more than three quarters of a million dollars. The plan is to increase that revenue to six million dollars a year by 1917.

All timber and wood in the national forests is for use. It is for sale to any man. Everybody who needs timber to establish his home gets it free of charge by asking for it. There is no chance for monopoly, for the Secretary of Agriculture can sell as much or as little as he pleases, to whom he pleases, and at such prices as he deems fair for the best interests of all the people. The government gets a fair return, whereas before, under the timber and stone law, timber was practically given away, and in such a manner that it was monopolized in vast tracts by corporate interests. After it was cut off, the land was burned over and became a non-productive waste. The range is used for grazing live stock.

The Bureau maintains nurseries for the purpose of propagating trees and shrubs likely to be valuable for transplanting to the national forests.

The national forests are located in the following states and territories: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, Oregon, South Dakota, Utah, Wyoming, Alaska, and Porto Rico. It will be noticed that they are all in the Western states. In order to treat all sections of the country fairly, it is important that the movement in behalf of reserves in the White mountains and the southern Appalachians should be successful. The appropriation of twenty-five thousand dollars by the last Congress for a survey of these Eastern watersheds is but a step, although a very important one, in the right direction.

Any one interested in the subject of forestry or desiring any other literature or practical assistance will find it of advantage to address the national forester, whose office is under the Department of Agriculture, at Washington, D. C.

◈

The Famous Goose Bone

LAST month Elias Hartz, the famous goose-bone weather prophet of Reading, Pennsylvania, died at the Friend's Asylum, near Philadelphia. Hartz was known all over this country on account of his peculiar weather prognostications. He was ninety-two years of age, and up to the time of his death he foretold the weather as indicated by the markings of the goose bone. He was a picturesque old character, had a wide acquaintance and a great number of followers, who, with him, never took any stock in government reports, but had implicit faith in Hartz's method of foretelling the weather.

It was his custom to select a goose hatched in the spring of the year. This he would carefully raise and watch until the following Thanksgiving Day, when he would enjoy the fowl for his dinner. On this date he would be besieged by neighbors, friends and newspaper men to give them his reading of the goose bone. No one ever questioned his accuracy, and if he predicted blizzards, severe cold weather and heavy snows, it was taken as a fact that that would be the state of the weather for the ensuing winter.

In January he would give a supplemental reading of the goose bone. Mr. Hartz never despised the lowly groundhog, and admitted upon all occasions that it was a valuable adjunct in determining that state of the weather.

He claimed that in his long career he made only one mistake, and that was when a wag palmed off on him the bone of a gander. After that he carefully looked after the goose from whose bone he made his forecasts. Farmers particularly believed in his predictions, and they frequently consulted him as to putting out their crops in spring.

About ten years ago the country enjoyed a mild fall, and during the Thanksgiving season Mr. Hartz issued his famous warning, "Fill your coal bins," at the same time issuing a portend of a disastrous winter. Many laughed at Hartz. Hundreds took his advice. It was the severest winter in a generation, and Hartz's reputation was more firmly established than ever.

◈

Its Fighting Days Are Over

THE old protected cruiser "Baltimore" which in her time has been one of Uncle Sam's most formidable fighting machines, has for the third time gone out of commission and been divested of her armament. This cruiser has probably seen more real service and been in more ticklish places than any other warship of the United States navy, and while she is given place in the American navy's Hall of Fame, her deeds are of the past, when the modern battleship was only dreamed of. Beside the new "Maine," the "Kentucky" and others of that class she is scarcely more than a plaything. She will probably be turned into a fleet repair ship, or will end her days in laying submarine mines. The "Baltimore" was one of the first ships of what was known in the eighties as the new navy. She was one of four authorized in 1886 after the ships of the "Atlanta," "Boston" and "Chicago" type had been built.

◈

Roosevelt on Inland Navigation

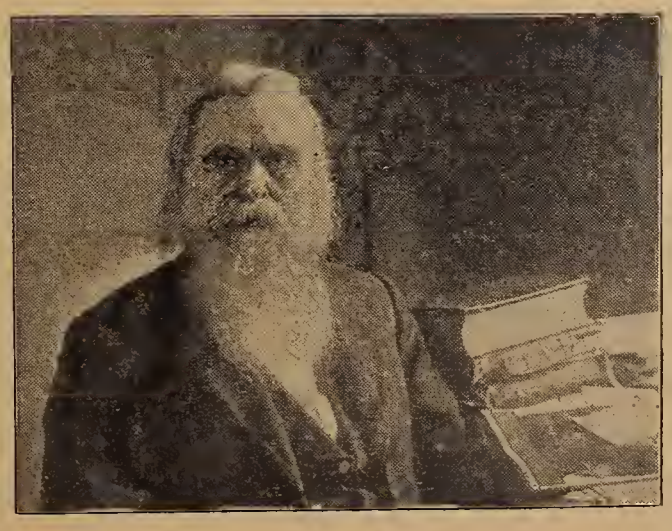
IT IS altogether likely that President Roosevelt will make a three or four days' trip next fall down the Mississippi River with the members of the Inland Waterways Commission. It is expected that the trip will immediately follow the dedication of the McKinley Monument at Canton, Ohio, September 30th. The President has shown keen interest on the subject of inland navigation, and this proposed trip is significant that there will be "something doing" after he "has had a look."

◈

Object to Title of Gentleman

IN SOME localities in Pennsylvania a peculiar issue has arisen, growing out of certain farmers having moved to town. Upon taking up their new abode they were listed as "gentlemen," and therefore assessed fifty cents more per capita than farmers. They strenuously protested, and in many cases their former standing was restored. The gentlemanly distinction was not worth the extra half dollar.

LIVED 42 YEARS IN THIS PARSONAGE



REV. DR. JOSEPH S. BRADDOCK

THE MIDDLE CREEK CHURCH

A Story of the Bunchgrass

By Kathryn Burkhart

War was on between the cattlemen and the sheep herders of Bunchgrass Land. Much of the territory over which the cattle ranged was government land, but by the stringing of a wire fence about the sections the law gave the cattlemen exclusive right to it for the range of their herds. The sheep herders, ignoring the fences, ranged their flocks over the territory of the cattlemen. As sheep bite off the grass close above the roots, they are destructive to the range. Thus the cowboys viewed the trespassing of the sheep herders as injury heaped on insult. Both sides took up arms, and the meeting of the two always meant a fusillade of shots and the injury or killing of men.

Such was the condition of things when "Cowboy Tom," as he later came to be called, made his appearance at the Double Bar ranch and applied for work. He rode a magnificent coal-black mount, rigged with a deep-seated saddle and fancy martingales. Though only a boy, he impressed Jack Simpson, the ranch "boss," as being a rider of experience, so he signed him at once.

"What's your name, sonny?" Jack inquired, after he had placed the horse in the stall and had an opportunity to get a good look at the youth.

"Tom Bradley," answered the newcomer in a voice keyed several octaves higher than Jack's deep bass.

"Tom Bradley," Jack replied, in loud surprise, as if the name suggested unpleasant things. The big cowboy eyed the youth keenly from hat to heels. Then he further interrogated. "Where you from?"

"Sheep Camp."

"You don't say? Look here, sonny, why didn't you tell me that before? Do you mean you are related to Bill Bradley, the leader of the sheep gang?"

"Yes, sir, I'm his boy," replied the youth, calmly.

The "boss" was taken aback. "Well, I'll be switched if this don't srtike me daffy," said the tall cowboy to the manager, as he turned and pulled an armload of hay from the mow. "I guess I made a mistake in signing you, sonny. I thought you was a real puncher—didn't know you was a herder. We got no use for sheepmen here."

"I'm not a sheepman, sir," the boy replied, lifting his head proudly, but tears of disappointment appeared on his cheek. "I'm a puncher, that's what I am, a cowboy straight through. That's why I left Sheep Camp. They hate me over there, even father hates me, and they all beat me around like they would a dog because I tell them the cowboys are with the law and are in the right. So I ran off over here and was so glad when you signed me Really, boss, I'm a puncher and will stand by the cowboys. You won't let me go now, will you?"

The boy pleaded fervently. The heart of the big "boss" was touched by the lad's sincerity. "Oh, I guess it's all right," he answered, "only the boys mustn't know who you are or where you come from. If they knew they would make trouble. We'll just call you Tom—Cowboy Tom—that's the ticket. Come on to the house now and we'll have supper."

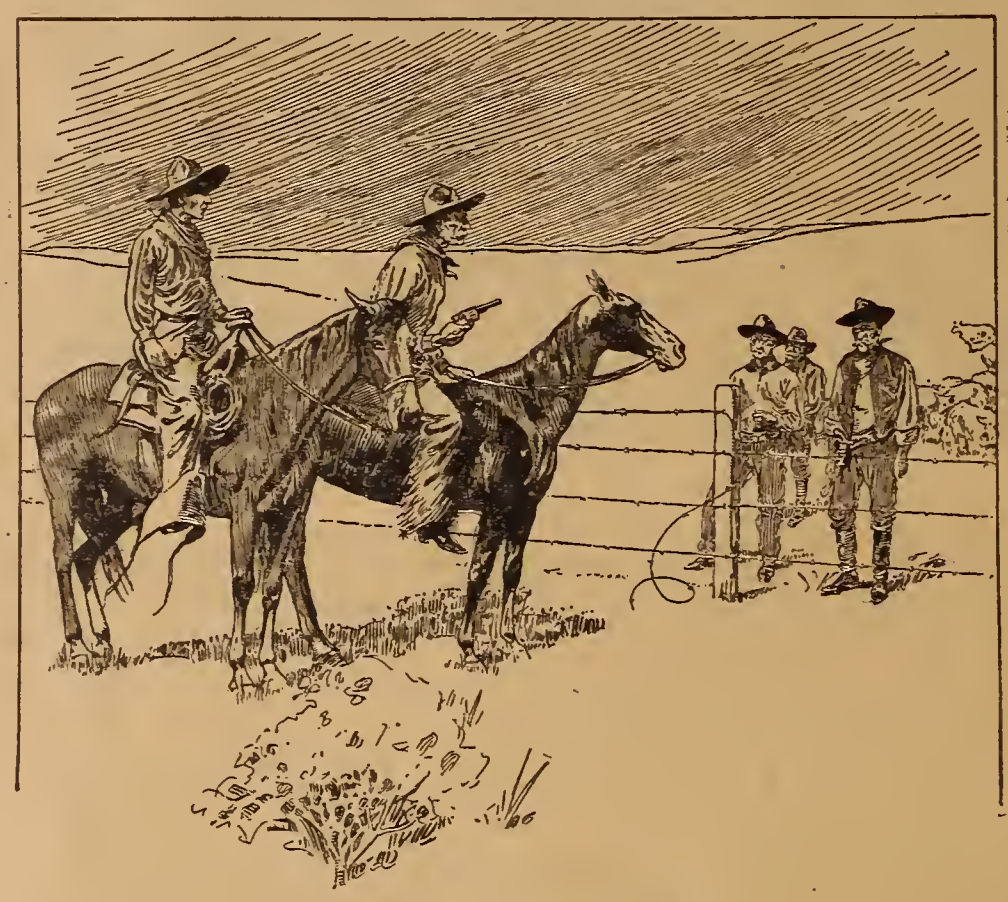
The remaining cattlemen of the ranch were seated about the messhouse table when Jack and the youth entered. "Boys," said the "boss" by way of introduction, "this is Tom—Cowboy Tom—a kid I signed this afternoon. He's small, but he's got ginger in him."

Many sly winks were passed around as the boy quietly slid into a seat and almost hid himself behind a heaping plate of boiled beef and potatoes. There were happy anticipations of the fun that awaited them in giving the lad the customary "toss up" in a blanket.

And early next morning the "toss up" was given in the most approved style. Tom bore the ordeal with supreme good nature and with the calm indifference of a Stoic. It was this that pleased the cowboys and led them to show the lad due respect. It was plainly evident to them that the lad had been tossed in a blanket before. It was also plain to them, long before the day closed, that Cowboy Tom was not a stranger to the saddle.

Unfortunately, and ere Tom had been twenty-four hours on the ranch, the horrible truth was known to every rider on the Double Bar that the boy was the son of "old Bill Bradley." The knowledge that a son of the lawbreaker, the despised leader of the "sheep gang," should be signed as a rider of the Double Bar struck the cowboys like the lash of a whip in the face.

Ike Morris, the red-faced foreman, who was the first of the crew to come by the truth of the boy's parentage, made immediate and irate remonstrance to Jack, the "boss." But Jack was already decided in the lad's favor, and was unmoved by Ike's disgruntled growlings. Failing to remove Tom by this means, Ike and the crew began at once to make life miserable for the youth. The foreman assigned him every task that bordered on the impossible. The wickedest "strays," "hard ropers," "jumpers" and



"'The next man that cuts a wire will get hurt'"

unruly "critters" were all put in Tom's care. During the following three days troubles that would have bent a strong man to his knees were piled on the boy's narrow shoulders. He bore up under the load with the same calm indifference that characterized his behavior when given his first "toss up" on the Double Bar.

It was the morning of Tom's fifth day on the ranch that the culmination of events occurred, and they came as suddenly as the storm that brought them. That night the threatening clouds, which had hung over the backbone of the Cascades all day, were caught in a furious west wind and sent flying over the prairies of Bunchgrass Land. Pierced by the darts of lightning, the clouds broke and poured their torrents down.

At midnight the storm reached the ranch, and the "boss," ever awake to the safety of his stock, arose and called Ike from his bunk, ordering him to take one of the boys and ride at once to the range beyond the John Day River. Over there was a wandering band of horses that must be driven back to the ranch before the water rose to its winter height.

Ike made good his opportunity to heap more troubles on Tom, and so awoke the boy. The lad leaped from his bunk with such ready response that the rough, hardened foreman was disappointed because of Tom's stoical indifference to danger.

The two saddled their horses in the yellow light of the stable lantern, and were soon galloping across the rolling plateau, through the black darkness and the blinding sheets of rain. They reached the river and crossed with little difficulty, but they knew that within a short time the water would reach a level that would make swimming impossible.

They rounded up the scattered horses and returned to the river, reaching it just as day dawned. After an hour's work of whipping and yelling the band was driven across. By this time the John Day was a rushing torrent of gurgling, swirling black water.

Tom's horse was a good swimmer, and the lad was soon across. Ike spurred into the murky stream and attempted to follow. But he rode only a light cayuse, and when in the middle of the stream the pony was caught in a whirlpool and suddenly went down. Ike slipped out of his saddle and struck for shore. The swift current carried him down stream at a rapid rate, and he soon realized that there was but small chance of his making the distance. He uttered a wild cry for help.

Tom was leisurely waiting on shore, paying no heed to the cowboy behind him. He was surprised when he heard the hoarse cry for help. He was still more greatly surprised when he saw the foreman struggling helplessly against the swift current. Then the truth came to Tom that Ike was drowning—Ike, the man who hated him, who was doing all possible to make his life unhappy, whose joy it was to torture him, to heap troubles upon him. For a brief moment the sting of something the lad had never before known stung within him. Must he answer the drowning man's appeal for help? Yes, yes, Tom concluded quickly, he must help him. Ike was his enemy, but he would help him. He would, he must, save him.

Tom released the rope from his saddle, and dismounting, ran along the shore with the coil whirling and buzzing over his head. "Take the rope, Ike; here it comes," the boy yelled aloud.

The toss of that rope was the work of no novice. Like a living thing it unwound itself over the dark water, the end falling squarely into the hand of the upraised swimmer. The cowboy grasped it with the eager grip of a drowning man, and the boy hauled him safely to shore.

When the foreman had expelled the surplus water from his huge being he took the boy's slender fingers in his own big palm and gripped them till the youth winced with pain. "Tom," said he, with deep feeling, "you've saved my life. You're no tenderfoot, for there ain't another puncher on the whole ranch that can handle a rope like you handle one."

A horse was caught from the band to replace the one lost in the river. Cowboy-like, Ike did not deplore the loss of the pony as keenly as he did the loss of his new Mexican saddle.

As the two rode slowly back toward the ranch behind their drive they came suddenly upon three sheep herders and a herd. The sheepmen were in the act of cutting the fence surrounding the ranch when Ike and Tom rode up.

"I guess you'd better let that wire remain as it is and keep your sheep on the outside," Ike remarked.

"We'll take the matter under advisement." the leader of the herd curtly replied. But to prove that he had no intention of doing so, the herder snapped the wire in twain.

Ike cautioned Tom to seek the shelter of a near-by ravine, but the boy refused. The foreman slipped his revolver from its holster. "The next man that cuts a wire will get hurt," Ike yelled. "Now skip, all of you."

Instead of heeding the warning, another of the herders cut a wire, and the cowboy's weapon spoke instantly. There was a reply of three weapons from the herders. Tom threw his hands into the air, gave a sharp cry and fell from the saddle. Before Ike could do any effective work the sheepmen dashed into the cañon and found shelter behind a boulder heap.

Ike dismounted and picked up the lad. At first he thought the lad was killed, but the brown eyes finally opened and gazed into the bronzed face of the big cowboy.

"I'm not hurt much, Ike," said Tom with a smile, putting his hand to his breast. "I got it just below the shoulder; but I'll soon be all right. Don't mind me. Get behind your pony and give it to 'em. They'll get you out here sure."

Tom's hand was covered with blood when he drew it away. Ike was alarmed. His whole thought now was for the safety of the boy. "You're losing blood, sonny. You'd better let me get at that hurt."

Ike started to open the boy's loose blue shirt. Tom pushed his hand away. "Leave me be, Ike; leave me be. I'm all right. Look out." A volley of shots cracked from the boulder heap, and bullets struck the matted sod.

Ike's left arm dropped limp. "They've winged me, sonny," he said, calmly, and crawled around to shield the boy with his own huge body. "You're cowards," he yelled in the direction of the rock pile. "Why don't you come out in the open? Why don't you come out and fight fair?" But his cry of defiance was smothered in another volley that sputtered spears of flame from the boulder heap and sent a rain of bullets about them.

"Don't shoot, you cowards," Ike yelled again. "Don't shoot, you'll kill the boy—there's a boy here."

A head appeared above the boulders, and a voice asked, "A boy? What do you mean?"

"I mean boy," Ike replied. "This ain't any trouble of his. Wait till I get away from him, then shoot at me."

Ike started to crawl away, but his limp arm dropped uselessly and he groaned with pain.

"Whose boy?" inquired the voice from the rock pile.

"He's old Bill Brad— Well, never mind. he's ginger," Ike answered.

Instantly a man leaped from the boulder heap and ran toward them. He was short and stocky and grizzled.

"Stand back," Ike yelled, drawing his revolver. "And don't shoot, you'll hurt the boy."

But the herder, with rifle lowered, came unhesitatingly forward. "I'm not going to shoot," said he. "Boy—why, he's my boy, my boy. Curse me if I've shot him."

The herder stooped and lifted the boy's head on his arm. "Tom, Tommy lad," he cried, "look at me. You brave little cow puncher, look at me."

Tom opened his eyes dimly and raised his hands to his father's unshaven face. "You'll forgive me, won't you, father—forgive me for running away? But I'm a cow puncher and couldn't stay where everybody hates me."

"Forgive you, lad? It's me that ought to ask that. It's me that was wrong. I can see it now. There will be no more fighting for me. This ends the range war on Bunchgrass Land."

The herder tenderly gathered the boy in his arms, and mounting the youth's horse, led the way to the Double Bar ranch. That night the glad news was spread from end to end of the broad prairies of Bunchgrass Land that old Bill Bradley had surrendered and that the bloody range war was at an end.

EW

The New Men

BY WILL PAYNE

[BEGUN IN THE JUNE 10TH ISSUE]

It was hot in dog days in the ill-ventilated coop under the high roof. Men discarded coats, vests and shirt collars. When the five-o'clock edition went to press they lopped down in their chairs and groaned with relief.

At half-past three Miss James crossed the big room to Morser's den. She looked so light and cool and gay that Morser, mopping his steaming face and breathing noisily, thought of spring flowers. She dropped at once into the vacant chair and put her hand on the end of the desk, leaning toward him and beaming at him.

"I suppose I'm to have a vacation this summer, Mr. Morser," she said, gaily.

"Suppose so," said Morser, grumpily.

"Then I should like to go next Monday."

"Well," he assented, still grumpily.

She looked at him a bare instant, in surprise, then sprang up lightly. The business was over; but as she stood up she flashed out a brilliant and good-humored smile, then tilted her head back a little and laughed happily and with a sort of gay confidence.

Morser glowered up at her. He understood perfectly that she was laughing her triumph and her appreciation of the immense joke of having gotten it out of him so easily. She had expected objections, even a grumpy refusal. She knew by that time what a terror he was to drive things; but they had come around to a footing of the friendliest quarrel. He had a premonition that on the heels of the laugh she was going to thank him prettily.

"Want passes?" he asked, curtly.

"Oh, can I? Will you?" she said quickly, her soft eyes shining.

"Where you want to go?" he demanded, discontentedly, ready to write on the pad of paper before him.

"Why, I intended to go with my mother to Oakville, Wisconsin. Her brother lives on a farm near there, and we could stay the two weeks—"

"What road's that on?"

"The St. Paul."

He made the memoranda for the passes, and then he seemed a little to forgive her. "Nice sort of place, eh?" he asked, sociably.

"It is perfectly lovely! Oakville is just on the other side of Lake Marquette. A great many people go to Lake Marquette."

"Yes; I've been there. Stayed at the Hotel Lake Marquette, where you have to eat the name if you want enough to fill up on."

"You can row across the bay a quarter of a mile from the hotel, and then it's only ten minutes' walk to the farm. You must walk over the next time you're there."

"Thank you," said Morser, with palpable sarcasm.

He was struggling with his limp collar, preparatory to leaving the office at half-past four, when Clarke sailed blithely in, airly arrayed for the heated term. Morser went on fumbling at the collar button, and the artist waited with a slight, nervous smile. When the editor finally settled his bull neck into the limp band and reached for the rumpled string tie Clarke spoke. "I'd like to take my vacation the fourteenth, Mr. Morser," he said.

"Can't," said Morser, simply, adjusting the tie with large, sweaty fingers. In a moment, as he reached for his vest—for Clarke still waited—he added, "I told you to take a vacation early if you wanted one."

"Yes, I know you did." The young man smiled nervously. "But, you see, I didn't want a vacation then. I've made some arrangements now—and I'd really like to go, Mr. Morser."

The editor shook his head and took his linen vest from the hook. "Can't do it," he said, as he got into the vest. "Nixon's away now, and Pruett and Miss James are going. The fourteenth will come—" He glanced at the calendar over his desk. The fourteenth was the following Monday. Morser turned rather slowly, got down his coat, and put it on, then took up his hat. "Where you want to go, Clarke?" he asked.

"Why, I thought I'd go up to Lake Marquette."

Morser put on the hat. "Well, go ahead," he said, simply.

The young man beamed happily. "That's a great accommodation to me, Mr. Morser," he bubbled, gratefully. "And if it don't put you to too much inconvenience—"

"Won't put me to any inconvenience," Morser cut in, coolly, looking the happy young man in the eye. "I can get out this paper with an office boy and a lead pencil. Nobody'd know the difference. Go ahead."

He loitered at the desk for a moment after Clarke had taken his confusion away, and he turned to look out of the window at the wilderness of smoky roofs before he finally closed the desk and walked out.

Clarke told Morser of the engagement soon after the return from Lake Marquette.

"Glad to hear it," said the editor, turning his big head to look across the bulk of his shoulder at the beaming young man, his forearms resting on the desk. "I hope you'll be married soon, because there's a chance of your doing some good work for the paper again after you're married. You haven't been much good this summer. You have put her in everything you've drawn, when you could remember to draw at all. It's best for her to get married. She started off tiptop, but this running around to do assignments with you all summer spoiled her; took all the ginger out of her stuff. So it's a good thing all around. Wish you joy, Clarke. I'll raise your wages when you're married. Compliments of the paper."

At half-past three Miss James went in as usual with her clippings from the exchanges, and came out puzzled, oddly agitated. Not much happened. When Morser had found fault with some of her paragraphs, and she was ready to step out, he said, abruptly, "Mr. Clarke tells me you're engaged. I hope you'll be happy, Miss James." He said it very simply, his popping blue eyes fixed upon her face. "It's been nice to have you here. If ever I can do anything for you hereafter you'll know where to find me."

The unusual tone, very quiet and simple, without the grumpy note, would have impressed her anyway. But there was something in the steady look of his eyes, in his very bulk and ugliness, which contributed to the odd, puzzling sensation, as though she had suddenly seen him off guard and had discovered a man defeated, a giant bound.

The habit of his grumpy and sarcastic presence was strong upon her, and she answered, lightly, "Perhaps I'll want a job again," just as though he were still chaffing her. But she was hardly out of the room before, amid her confusion, a little storm of impassioned remorse for the levity overtook her. She should have answered his seriousness seriously. She knew well enough that he had made good tender of affection—and that from Morser! The poor man! The poor man! she kept thinking confusedly, without thinking why he was poor.

Morser himself gave them the assignment to the opening gala performance of the Polish theater in West Side Hall Sunday afternoon. He wished some pictures for Monday's paper, and a little text. It was to be Miss James' last work on the paper.

There was a spacious softness in the October air that Sunday afternoon even amid the deserted and gloomy cañons of the down-town streets. Morser felt it as he came out of the "Mail" building, and it reconciled him to his purpose. A man might give way once; the mournful, spacious richness of a dying summer might wholly possess him once.

When he dropped off the trolley car in the skirts of the ghetto he found a crowd on the flagging before the hall. The crowd was as foreign as the neighborhood. The bare four-story brick building which contained the hall was the most imposing structure in the square. The doors were closed, and a policeman stood on guard before them, for the hall was already packed. Morser knew the place well enough. Labor meetings were held there in his reporting days. So he turned at once to the three-foot passage between the building and the frame structure next it. The side door was open. The policeman there recognized the authority of the reporter's star, and Morser climbed the dark narrow stairs. The door at the head of the stairs was open for ventilation, but a dingy curtain was drawn across the doorway. Morser pushed the curtain aside and found himself at once in the hall.

He could have constructed the scene from memory. The hall was merely a large, bare room, a hundred feet deep perhaps, and forty wide. There was a shabby little stage at the lower end, on which just now—for it was between acts—a swarthy orator, speaking Polish, toiled and perspired. The floor was of one level from stage to door, solidly filled with rows of wooden chairs. Overhead a narrow gallery ran around the rear half of the room. The windows were on the opposite side. Morser stood in the shadow the gallery. Every chair was taken. Boys perched on the ledges of the high, narrow windows opposite. Across the back of the hall was a packed, standing fringe of humanity. Some men and boys sat on the floor in the aisles.

"Morser went on fumbling at the collar button, and the artist waited with a slight, nervous smile"

The audience had the same foreign aspect as the crowd out on the flagging.

Morser's eyes slowly searched the hall, beginning at the stage, and it was a full minute before he saw them, almost within reach of his hand. Naturally the light was bad there, and Clarke was leaning over, making his sketch. He was laughing, too—every minute looking up, laughing, into the face of the girl beside him. The beggar, what did he care about the sketch! Morser watched them. The minutes slipped by. Still he did not turn away.

A stillness fell upon the hall. Morser glanced at the stage mechanically. The orator had stopped to take a drink of water and mop his brow. Morser's glance was coming back, when he saw beneath one of the windows a little feather of smoke floating up. By an instinct quicker than thought he drew the curtain over the doorway and put his bulk before it. Somebody yelled, "Fire! Fire!" The audience arose like a flock of frightened birds. A woman screamed. The rush began. It all came in a twinkling.

"Clarke! Clarke!" Morser bellowed.

Chairs were flung aside. Wild men sprang over them. Shrieks arose. It was a storm of witless human atoms, abrupt, furious, uncontrollable. Clarke was fighting to keep Miss James from being trampled. A sudden barricade of chairs, coming from no one knew where, appeared between them and the side aisle. A press of frantic people was bearing them toward the fatal crush at the front door.

Morser dashed half the chairs aside and bent over, holding out his arms. "Come!" he said.

The girl looked into his face. His two huge hands seized her, lifted her over the chairs like a baby, swinging her to the doorway. He put her down at the head of the narrow stairs. It was all in the division of a second, in one long flash as they looked each other in the face; but as though that instant had been a continuation of the moment in the office when he bade her joy she saw the man fully, and understood, before he left her, turning back to the unguarded door.

Clarke had scrambled through; but some others had seen this unexpected egress, too. Half a dozen wild men were rushing over the chairs, crowding into the door. Morser threw his bulk against them, his arms beating like flails, an engine in action.

"Women first here! Women first!" he shouted. "Here, Clarke!"

"No! No!" The artist was squaring off at the crowd.

A huge hand seized him and hurled him through the door. A press of frantic women poured in behind him and swept him down the stairs. He found Miss James weeping in the passageway between the two buildings. The stream swept them to the street, where they clung at the mouth of the passage, distraught, all eyes. Wild men and women were spilling from the front door. The street was thick with gathering people, through whom already some were carrying limp, heavy burdens. The clatter of patrol wagons and clangor of gongs blended with the human babel.

It passed almost as swiftly as it came. The storm suddenly spent itself, and subsided. The police were forming lines across the street, clearing a wide space in front of the building, from which people were now pouring in perfect safety. There was no fire. The fit had come and gone inexplicably.

Ambulances were gathering in the cleared space before the building. Policemen and physicians were busy. A dozen women and children and two men were brought down maimed. One little girl was dead. They carried down Morser last with labor.

"Wedged in the turn of the stairs and stove in all over," a police sergeant explained to Clarke. "He fought 'em like a tiger while the women and children was gettin' out. Never saw a man so used up—like a house had fell on 'im."

At the hospital, where they waited, the surgeon shook his head. He briefly mentioned the character of the internal injuries. "You can see him," he said; "it won't be for long."

Miss James caught her affianced's hand: "Let me go in—alone, dear," she said.

Morser knew her at once. "Come to say good-by?" he asked. "Guess there won't be anybody else. And I'd rather you came than anybody else. You know—" he questioned.

"Yes, I know," she whispered. "Oh, why did you—what made you—" She leaned over him, her soft eyes yearning into his.

"That's all right," he answered after a minute. "It was all right. If a man's a scrapper he must scrap for all he's worth when the right time comes."

"But—oh, we love you! I love you!"

"Yes—now," he said, quietly; and, after the pause, "You mixed me up a good deal. But it was nice to have you around. I'm glad I had you. I'm glad you're here—to say good-by. If I'd been made different—" His voice sank, and he closed his ugly eyes. "But there's no regret." He looked up again with an effort. "If a man's a scrapper—a scrap—"

THE END

A Vigil

BY EUGENE C. DOLSON

The fire on my hearth is low—
I sit in the house alone—
The flickering lamp burns dim,
And the night goes on.

Outside I can hear the moan
Of wind through the orchard trees,
And the dismal sound of rain
From the dripping eaves.

It was here she sat with me—
She whom I used to know—
Was it a lifetime since,
Or a year ago?

The Housewife

Lazy Women's Ways

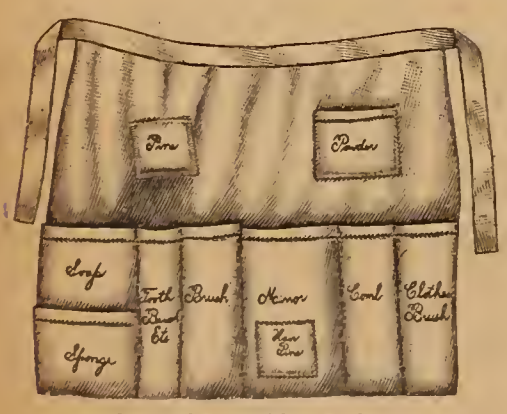
BY HILDA RICHMOND

THE mistress of the farmhouse was severely criticizing a neighbor for using a washing machine to lighten her burden on Monday, and more especially because she frequently asked her husband to operate the machine. "Thank goodness!" she remarked grimly, "I have no use for lazy women's ways." This same housekeeper rose long before daylight to have her washing on the line before her neighbors could do theirs, and generally "drove" her work. She was a competent worker in every department of her household, but she could not see that her vision was so narrow that she could see nothing else. She had no pity for weakness in any form, and her neighbors who could not keep pace with her were unhesitatingly stamped careless and lazy in her mind.

There are women in every community who are still joined to their idols. Their husbands would not try to farm by the methods of fifty years ago, but the women regard it as a sign of laziness to allow some of their burdens to slip off their shoulders. One old lady, who makes by hand the garments used in her family, has nothing but contempt for sewing machines and ready-made garments. For summer she struggles with heavy unbleached muslin and goods for shirts for the men's under and outer wear, and in winter the heavy flannel in red and blue is laboriously made up to keep out the cold. Her sons rebelled against the clumsy clothes long ago, and left home, but she still considers herself very virtuous as she plies her needle, and regards women as lazy who have their sewing machines and buy made-up clothes.

Of course, the women without sewing machines are few and far between, but there are other idols in the land. Last summer a woman hung over a hot stove baking and boiling and canning when her husband was willing and anxious to buy her an oil stove. "A wood stove was good enough for my mother, and it's good enough for me," she said stubbornly. It is a good thing her mother had not kept the fireplace of the generation preceding, or she might now be baking her bread on the hearth and using the old-fashioned crane. There is no particular virtue in sticking to old ways unless they really are better than new ones. A great many people cannot afford to buy oil stoves, and some timid women are deathly afraid of them, but to deliberately choose a hot fire in preference to a comfortable heater for summer is folly, pure and simple.

Some women are foolish enough to believe that everything in the vegetable garden must be planted in small beds, that are spaded and raked and cultivated by hand. One good woman gave a little sniff when she saw her neighbor's garden neatly plowed, harrowed and arranged in long rows. "She'll have no garden this year," she said, with a satisfied air. But the neighbor did have a garden. Now why can't peas and onions and corn and cabbage and tomatoes go in long rows, to be plowed and hoed, rather than into little beds, where all work must be done by hand? In the horse-cultivated garden there are no paths to be kept up, and the work may be done in one fourth the time. Of course, every family needs a few early beds of lettuce, radishes and such things before the big garden is ready, but



THE TRAVELER'S APRON

do get away from the idea that garden truck will not grow in long rows as well as in little beds.

Perhaps in little things more than big ones women make themselves trouble. A country lady confessed that she liked bread made from yeast she bought at the bakery in town, but it looked so lazy not to make her own that she gave up buying. Another lady, who had much trouble in keeping canned tomatoes, had the opportunity to sell her fine crop of this vegetable to a grocer, who offered her cash or the equivalent in canned tomatoes of a good quality from his stock, but she said that looked so shiftless she would not exchange. She picked the ripe fruit from the vines as usual, and as usual threw the soured, spoiled canned tomatoes out a few weeks later, but she was satisfied because she had not been lazy.

"The old order changeth" is true everywhere. It is not laziness, but good management, that prompts a woman to save her strength in every way possible. Often time saving means money saving as well, for overworked women are apt to pay out more for medicines than the price of bakers' bread for the hot weather and labor-saving devices for the kitchen. Before calling new ideas "lazy women's ways" it is well to carefully investigate and see if they are not wise women's ways instead.

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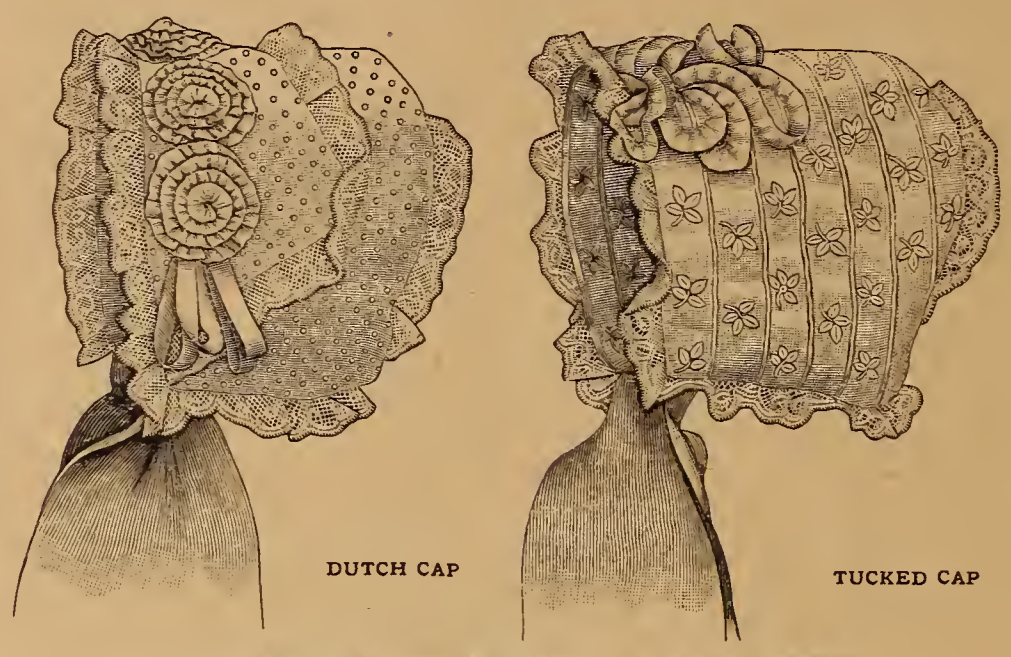
Plants and Liquid Fertilizers

MANY failures with plants and flowers, both in and out of doors, are due not so much to poor preparation of soil or unfavorable conditions and locations as to a lack of knowledge concerning when and how to water.



DUTCH CAP TUCKED CAP

TWO LATE AND ORIGINAL STYLES OF HOODS FOR THE BABY

For instance, the hot rays of the midday sun should never be allowed to fall upon a freshly watered plant. For this reason, watering should usually be done early in the morning or just about sundown. A thorough soaking of the soil once or twice a week is far better than a daily sprinkling.

Water should be used sparingly, if at all, on cloudy, wet days.

Nearly all plants drink more during summer than in the winter months.

For house plants use tepid water, never cold.

A small amount of soapsuds will do no harm at all, but salt and water will kill most plants.

Very small plants raised from seed must be carefully watered. A hair brush or a whisk broom will be found excellent for this, as its use will prevent the dashing up of the soil, so injurious to young plants and seedlings.

Primroses and several other varieties prefer watering from the bottom. If a plant is not doing well, try giving it at least an occasional drink from a saucer of good warm water. It may be that its toes need warming up.

The habits of plants must be considered. For instance, some require only a moderate amount of water, while others, especially the lily varieties, thrive in a wet, swampy soil as near like their native marshes as can be artificially prepared.

Then, again, all plants have seasons of growth and seasons of rest, some requiring a much longer period of rest and giving a correspondingly longer time of growth.

When a plant which has grown or blossomed continuously for several weeks fails to send out new buds, and some of the leaves, in spite of care, begin to turn brown and drop off, it is usually ready for a rest, and should be set in a rather dark place and watered sparingly for a few weeks. Never give any kind of fertilizer at this time.

When the plant is returned to the light, and new shoots begin to appear, water liberally. It is often surprising how much a growing, blossoming plant will drink. Fertilizers can be used now with good results, but it must be remembered that a little goes a long ways.

Bloody water is an excellent fertilizer, but of course all tiny scraps of meat should be carefully removed, as they are potent breeders of disease.

A very good fertilizer is made by pouring hot water over a small pailful of fresh barn-yard manure. A little of the water is then poured off and diluted until the color of very weak tea. Care must be taken not to get this too rich, and not to allow a single drop to come in contact with leaves or buds, as it will burn brown spots wherever it touches the leaves and blast all buds.

An old teapot is just the thing for applying water or any liquid fertilizer, as with the long spout the liquid may be placed directly upon the soil near the roots of the plant, with no danger to foliage.

For those who object to the filth of barn-yard manure, there are several more cleanly methods of enriching the soil, which usually produce excellent results.

One tablespoonful of aqua ammonia added to eight quarts of tepid water makes an excellent fertilizing fluid, especially for ferns, palms, asparagus, etc. Care must be taken with this, as with the other: It must not be used too strong.

Another excellent fluid for promoting rapid growth is composed as follows: Take four ounces of sulphate of ammonia and two ounces of nitrate of potash; add to these one pint of boiling water, and when dissolved, bottle, and cork tightly. To every three quarts of water use one teaspoonful of this mixture.

Any of these fertilizers applied regularly once a week to healthy, thoroughly rooted plants (never to "slips" or very young plants) will stimulate to rapid, vigorous growth and large, fine blossoms.

Plants hate dust. Their leaves are their lungs and should be kept clean. Ordinary varieties may be given a thorough bath once or twice a month, as follows:

If, after the week's washing is over, there is a liberal supply of moderately clean soapsuds, bring the plants to be washed into the laundry room, and place both hands around the plant and over the top of the pot, to prevent the soil from falling out, gently dip the leaves three or four times in and out of the water. Set in a shady place until thoroughly dry. Blooming plants are best not treated this way, as the blossoms are apt to become draggled and soiled.

All ordinary varieties love to be placed out in a sheltered corner during a nice warm rain, and allowed to drink in some of heaven's own showers of blessings.

PEARL WHITE MCCOWAN.

◈

Gift for the Traveler

ONE of the nicest gifts I know of for the comfort and convenience of a woman who travels is a toilet apron, a receptacle for the small toilet requisites indispensable to a woman. In this compact form for carrying, much annoyance can be avoided by simply pinning the apron with its contents around the waist while making the toilet. "A place for everything, and everything in that place," is the idea. When not in use the apron can be rolled up tightly and placed in a hand satchel, taking up no more room than each article separately wrapped would require.

A piece of natural colored linen eighteen inches long by twenty-two inches wide is required for the apron, which is fitted by means of four darts into the belt. A few inches below the belt on one side is a small pincushion, supplied with pins, on the other side a chamois-lined pocket for powder. Across the bottom of the apron is a piece of the same linen divided into pockets of different sizes, for the articles they are to hold. On the right-hand side baste into position, one overlapping the other, two pockets six inches long by eight inches in width, lined with rubber cloth, for soap and sponge. These must, by means of a small plait in each side, fit into a five-and-one-half-inch space. A long piece of linen as deep as these two pockets and thirty-one inches long is divided and placed as follows, for stitching securely in place: Beginning at the right-hand end, overlap the end of the soap and sponge pocket (each division is fitted to its space by means of two plaits) —for the clothes brush, five and one half inches into three and one half inches; for combs, six inches into three inches; for mirror, eight and one half inches into five and one half inches (on this pocket at the bottom is attached a small pocket for hair pins); for hair brush, six inches into three inches; for tooth brush, four and one half inches into two inches. The pockets can be secured to the foundation by machine stitching between each pocket, or feather stitching with brown floss. The same finish is given to the hem at the top of the pockets. Stitch the edges of the pocket piece, across the bottom and at the sides, and bind the whole apron with No. 2 brown satin ribbon. The name of the articles for which each pocket is intended is outlined on the front.

One yard of linen, one fourth of a yard of stork rubber, two yards of No. 2 ribbon, six skeins of floss and a small piece of chamois are the materials needed.

M. E. SMITH.

◈

Infant's Caps

THESE dainty little caps are made of dotted swiss. The pattern is in three pieces—the body of the cap, the circular crown and the plain mull strings, which are finished with a dainty rolled hem and hemstitched ends. One third of a yard of goods is required for each cap.

The Dutch cap is finished around the turnback, face and crown with a frill of valenciennes lace half an inch in width, and ornamented on top with five cunning rosettes of narrow white satin ribbon gathered on one side, so as to ruffle it. Sew the ribbon in a circle the size of a fifty-cent piece, circle around to the center, and turn in the end. Four loops of the ribbon at each side of the row of rosettes gives a finish and relieves what would otherwise be a stiff ornament for a small cap.

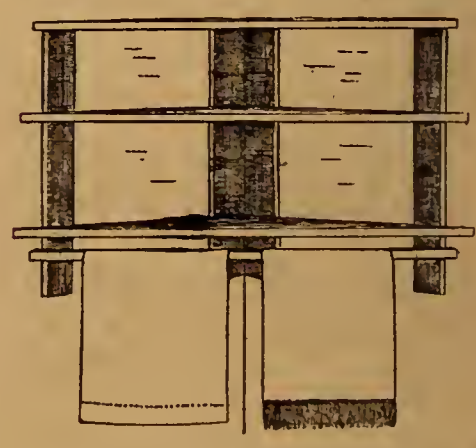
The other cap has five tiny hand-made tucks one inch apart across the body of the cap. A frill of lace finishes the edge and the crown the same as the Dutch style. The top ornament consists of one large rosette of the gathered ribbon, with loops of the gathered ribbon on each side. It also has the mull strings, about five inches in width, hemmed by hand, and hemstitched on the ends.

HEISTER ELLIOTT.

◈

Shelves and Rack for Bath Room

IN THE bath room, or the room where the family makes its toilet, two or three shelves, on which can be placed the various articles used in making the toilet, are a convenience which will be much appreciated. Tooth brushes and tooth powders, jars of vaseline or cold cream, combs and brushes, individual boxes of soap, bottles of tooth lotion, lotions for



CONVENIENT SHELVES AND RACK

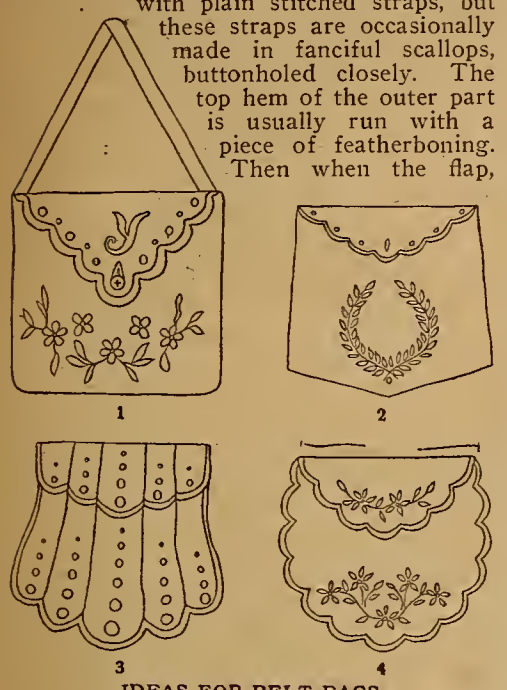
the hands, lips or face, etc., may be placed on the shelves, while sponges, wash cloths, etc., may be suspended from hooks screwed into the front of the shelves. As space in the wash room is generally limited, corner shelves, that take up little room, are the most satisfactory. Three triangular pieces of three-quarter-inch pine are fitted together by means of strips at the back and the sides to form the shelf cupboard shown in the sketch. A bar is nailed from side strip to side strip just under the lower shelf for the accommodation of towels. Curtains of white muslin or swiss may be suspended in front of the shelves if preferred. Hooks screwed in at each end of the top piece will serve to support the rod for the curtain or curtains. The wood may be stained or enameled to suit the taste.

The New Belt Bags

LAST summer witnessed the advent of that most practical and satisfactory fad, the washable belt bag, or pocket, and from all indications this season will see its already great popularity increased by leaps and bounds. All the shops are showing the most attractive creations along this line, the Easter bazaars were well supplied, and every one who embroiders seems unaccountably busy with these bits of linen.

The materials are greatly varied. There are the plain linens, white or colored, owing to the gown they are to accompany; the piqués and madras; the all-over embroideries; the lawns, dimities and organdies, whether plain or figured, and numerous other fabrics. The best liked and most practical, because it goes nicely with any light tub dress, is the plain white linen decorated with handwork.

These pockets are ordinarily finished with plain stitched straps, but these straps are occasionally made in fanciful scallops, buttonholed closely. The top hem of the outer part is usually run with a piece of featherboning. Then when the flap,



IDEAS FOR BELT BAGS

which is really an extension of the back of the bag, is turned down over it, the upper part is held taut and smooth. Without this boning the bag would have a tendency to sag open as soon as anything was deposited in it.

The two parts of the bag, front and back, may be seamed together on the wrong side or buttonholed neatly on the outside in some pretty scallops.

Four desirable designs are shown herewith for these pockets. The first is a small square affair, seamed up, but with the flap buttonholed in scallops and secured in position by a button and buttonhole, the most convenient method of fastening. The embroidery is done in solid and eyelet work, the initial on the flap being solid over padding.

No. 2 is also to be seamed together, and has a scalloped flap. The wreath in this instance may be worked all solid, or the leaf forms cut like ovals and overcast around the same as eyelets. The stem in either event is outlined. This wreath forms an ideal setting for the owner's initial, if desired.

A rather unique shape is shown in No. 3, rows of outlining or chain stitch dividing the bag at the intersections of the scallops. The disks should be heavily padded and worked solid. Little disks of this kind are a favored method of decorating this year. Of course, if one preferred, these could be converted into eyelets. The edge is buttonholed closely.

No. 4 is a pretty pattern, and quite roomy as well, measuring six inches across at the widest point, and being of about the same depth. This is a trifle larger than the other designs illustrated. The embroidery may be solid or a combination of solid and eyelet work.

The various mercerized cottons on the market are well adapted to the needlework on these wash bags, for they stand laundering so much better than silk floss.

The bags may be carried out in all white, or white needlework may be used on the colored materials, owing to the costume with which it is to be worn. The straps may be arranged in a loop at the top, through which the belt is slipped, or they may be pinned to the waist with a safety pin underneath the belt.

A supply of these useful trifles is a desirable addition to any wardrobe, and since they require but a slight outlay of time or money there is no reason why every one who delights in dainty toilet accessories should not enjoy them.

MAE Y. MAHAFFY.

◈

PLAIN CUSTARD—Beat together five eggs, one quart of sweet milk and one and one half cupfuls of sugar. Sprinkle the top lightly with grated nutmeg or cinnamon or flavor with vanilla. Bake one hour, and serve warm.

Three-Sided Seat for Yard

A YARD seat that may be as small as a chair or as large as a settee is shown in the sketch. On the shelf, across the top of the seat, flower pots may be set in three semi-circles, their bright foliage and flowers being in striking contrast to the dark bark of the tree. Such a seat is admirable for a hillock which commands a beautiful view on every side, or for setting off some particularly handsome tree near the center of the lawn.

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Women's Sections of Farmers' Institutes

EXTENSION lectures for farmers' wives was introduced into the Michigan system of farmers' institutes twelve years ago.

Mr. K. L. Butterfield, now President of Massachusetts Agricultural College, was at that time appointed superintendent of institutes, and immediately projected new lines by which it was hoped to reach the "nooks and corners" of the state.

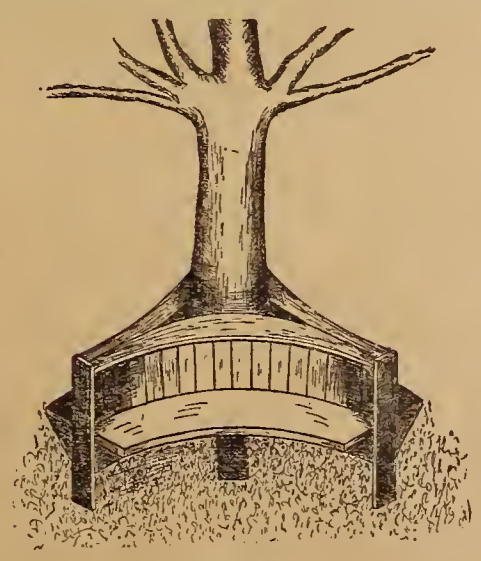
One of his plans was for a Women's Section. He went to the one woman best fitted to advise him, and asked her opinion. This was Mrs. Mary A. Mayo, who understood the conditions of farm women better than any one else in the state. There had been separate sections for women, in the form of cooking schools, known in Michigan and other states for probably ten years, but this plan was for the discussion of varied topics, all of special interest to women.

Mrs. Mayo said it was the thing to do, it was what she had long wanted to do, and consented to try it that first year of the new order in institute work. The first Women's Section of the kind was conducted by her at Kalkaska, Michigan, November 14, 1895. That winter fifty-six women's meetings were held in various parts of the state, with an attendance of 8,326.

This work has been continued. Its place is assured with us. Occasionally the women of a county vote not to have a separate section for a year, but in the major number of the institutes it is a popular feature. Not only is this true at the county institutes, but also at the annual state meeting. There were about six hundred in attendance at the Women's Section of the state institute last February. Half a dozen state women speakers were present to aid in the discussions, in addition to the program furnished by the local people. There is little doubt but that a hundred thousand women have been in these meetings altogether.

In the main women feel the need of conferring together on those topics that they are most free to express themselves upon when in the separate section, as the training and care of children, habits of home, self-culture and the household arts and sciences.

The attendance is not confined to farm women, about forty per cent commonly being from the towns. Through this fact the separate section is able to perform one of its highest uses, that of bringing women



YARD SEAT

from the country and villages into closer relationships and sympathy; for, as one bright little woman at one of our meetings said, "About the only real difference between us is a matter of a few miles."

Repeatedly women whose children are grown say, "Oh, if I had only had these things when I was younger, I'd have been a better mother." Young housekeepers and mothers crowd about the older women at the close of the meeting, asking eager questions, and all lingering to exchange bits of experience and appreciation.

As these Women's Sections of the farmers' institutes afford the only occasion in the year to most women who attend them for consulting heart to heart with other women regarding those topics most vital to them as homekeepers, their value is inestimable. JENNIE BUELL.

Of Interest to Women

JOHNS HOPKINS UNIVERSITY has opened its doors to women in those classes where the professors are willing they should enter. President Remsen, one of the greatest chemists of this country, is worthy of praise for this progressive spirit.

The dearth of household servants, of which women so bitterly complain, has been a blessing in disguise. It has shown that housework is really an industry to be ranked with productive enterprises. The coal in an engine, the oil to lubricate its joints, are just as essential to the production of energy as is the engine itself. While women have borne heavy burdens because of the lack of household help, they are not to be compared with those that they have borne when help was plenty. Not only has the scarcity of household labor brought out the economic relations of woman's work; it has also tested genius to find easier and quicker methods. There was a golden age for women, economically, hundreds of years ago. Women are again entering on a golden age whose splendor the imagination cannot yet voice.

Denatured alcohol promises to be one of the greatest boons to farm women, because it can be used as motive power for performing much of the drudgery in the home. Speaking of its use, a gentleman asked if it would ever be greatly used, saying that in ten years everything would be done by electricity. He said that in his house a match was never struck for light or heat, as everything was done by means of the mysterious fluid. This is all right for the city, but it will be several times ten years before the remote rural districts will have the convenience. In the meantime, as long as these aids can be had in the city and not in the country, there will be a drift cityward, easeward. Mechanical alcohol will supply the need and make the work on the farm and in the home a delight. Here is opportunity for the inventive genius of the housewife, and there's money in it, too.

Whenever women take up the matter of civic improvement something is done. "I tried to get the man across the street to plant some trees, but he growled that they would never do him any good," said a townsman. "I spoke to his daughter about it, and told her to get her mother to persuade the lot owner to plant trees. Within half an hour I saw him digging holes. 'What are you doing?' I asked. 'I thought I would plant a few trees,' was the response." Sometimes the talked-of "influence" does little good save to arouse ill temper. Next best is to put in a few trees oneself. If a woman takes a notion to do it she will find a way.

To renovate black ribbon, take black coffee that has been strained until it is quite clear and free from grounds. The ribbon should be well brushed, gently sponged with the coffee, and ironed carefully on the wrong side till dry.

Teach children, both by precept and example, never to throw paper on the ground. If papers or letters are opened on the way from town or the mail box, crush the paper, take it home and burn it. Slip the torn ends of letters in the envelope and burn when you reach home. It's only a little thing, but it may save a runaway, and will surely prevent unsightly roadsides. Form the habit.

A good idea when buying a wash dress of a solid color is to purchase enough of the same material for a drop-skirt, which does not show soil nearly so quickly as a white skirt, and is laundered much more easily. When the dress-skirt is past wearing it may be used to renova the underskirt, which can either be worn with another dress of the same color or of a different color. In fact, petticoats of gingham in various colors are fast taking the place of the white ones of our ancestors' days.

MARY E. LEE.

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Pointers Worth While

ATTACH a small bag to the clothes basket, and whenever a button comes off in the process of laundering place it in the bag where it will be at hand when the weekly repairing is done after ironing.

An admirable cure for headache is a sponge wrung out of very hot water and applied to the nape of the neck.

Grapes are very likely to cause acidity when the stomach is empty. They should be eaten at the end of the chief meal of the day.

Many people who try the experiment of dining on fruit alone have, after a few weeks, to consult the doctor as to how to cure their dyspepsia.

HONOR ROLL

This is the last appearance of the Honor Roll of Farm and Fireside's Great Four-Pony Contest. The names below are those contestants who have been put on the Honor Roll since the last issue of Farm and Fireside. Every person whose name has appeared on the Honor Roll has been sent two handsome prizes, one of which the winner could choose. The value of the prizes and rewards we have given Honor Roll contestants alone amounts to over $1,500. That is certainly giving a "square deal," isn't it? Farm and Fireside wants to congratulate every person whose name has appeared on the Honor Roll. It is indeed an honor to be a prize winner in the greatest prize contest ever conducted in America.

Earl D. Anderson, Texas.
Harry Avers, Michigan.
Mrs. Bell Anderson, Texas.
S. H. Baldwin, Ohio.
Ada Briggs, California.
Wm. T. Blackburn, Ohio.
Mrs. Sam Burns, Pennsylvania.
Ethlyn Bowles, New York.
Howard Brashear, Ohio.
Mamie Baird, Pennsylvania.
Mrs. Amy M. Coile, Ohio.
Edw. Covington, Maryland.
Hazel Corbin, Pennsylvania.
Stacy H. Desmore, Indiana.
Harold Doster, Ohio.
Clara M. Dreyer, Ohio.
Master Perry Daugherty, Illinois.
Oma O. Dulin, Indiana.
Jessie Lee Dix, Virginia.
Mrs. J. C. Emmons, Ohio.
Lucy Earick, Ohio.
Mrs. J. W. Ellis, Massachusetts.
Mattie Eustace, Missouri.
P. A. Gobble, North Carolina.
Mary Gray, Pennsylvania.
Willard Griest, Indiana.
Melvern Hall, Nebraska.
Ralph Himstedt, Illinois.
Bertha B. Hyman, Wisconsin.
Laura Howe, Connecticut.
James M. Hirl, Iowa.
Lillian L. Hazlette, Indiana.
Edith Madeline Hanger, Virginia.
Whit Harris, Arkansas.
Louisa Imlay, Oklahoma.
Mrs. Daisy Jones, Illinois.
Clara W. Kirby, Ohio.
Fannie G. Larmer, Alabama.
Mary E. Lawhorn, Virginia.
Jessie Locke, Pennsylvania.
N. C. Lanier, Ohio.
Sylvester Mersch, Indiana.
Clarence Mosser, Illinois.
Nela McWilliams, Wisconsin.
Calvin Morgan, Pennsylvania.
Mrs. Sally McClannan, Virginia.
Alice Mills, Ohio.
Harry Prescott, New Hampshire.
Mrs. Maggie Pope, South Carolina.
Bertha Radtke, Minnesota.
Edythe Scott, Ohio.
Ethel Sternburg, Pennsylvania.
Bernice E. Swift, Michigan.
Mabel E. Scott, West Virginia.
Gene Sherwood, California.
Fannie Strauser, Iowa.
Raymond J. Smith, Virginia.
Theo Schober, Missouri.
Elizabeth Trump, Missouri.
C. E. Tupps, Ohio.
Anna B. Trager, Illinois.
Leila Wise, Pennsylvania.
Bertha E. Wenger, Virginia.
Lora Webster, Indiana.

Linen Gowns Are Now the Vogue

Miss Gould Tells About the Craze for This Material and the Novel Ways in Which It is Used This Summer

No. 941—Jumper Waist With Large Armhole—Including Guimpe

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medinm size, or 36 inch bust, one and three fourths yards of twenty-two-inch material, or one and one fourth yards of thirty-six-inch material, with three yards of contrasting material twenty-two inches wide for guimpe

No. 942—Four-Gored Skirt With Fan Plaits

Pattern cut for 22, 24, 26 and 28 inch waist measures. Length of skirt, 42 inches. Quantity of material required for medium size, or 26 inch waist, ten and one half yards of twenty-two-inch material, or eight and one half yards of thirty-six-inch material

THERE are so many different styles in the linen gowns this summer that this fact may be regarded as an important new feature of the season's modes. There are linen gowns suitable for almost every occasion, and some of them, with their combinations of Irish lace and artistic embroideries, are quite as elaborate as the silk frocks. The three linen gowns shown on this page illustrate designs which are particularly fashionable. The linen frock with the jumper waist having the large armhole, and the skirt with fan plaits, is a very charming model, and will look well made up in any of the fancy linens. A scalloped edge finishes both the opening of the waist and the skirt, which is in the front.

Many of the most fashionable of the hot-weather gowns are made of linen in dark shades. A dark blue linen is used for the gown, which has the waist band-trimmed and made with a vest, and the skirt plaited and cut in seven gores. Lawn tucking in white or pale tan is used for the vest and the cuffs. The linen bands which trim the gown may match the tucking or be introduced in a shade darker.

No. 943—Band-Trimmed Waist With Vest

Pattern cut for 34, 36, 38 and 40 inch bust measures. Quantity of material required for medium size, or 36 inch bust, three yards of twenty-two-inch material, or two yards of thirty-six-inch material, with seven eighths of a yard of tucking and one yard of contrasting material

No. 944—Seven-Gored Plaited Skirt

Pattern cut for 24, 26, 28 and 30 inch waist measures. Quantity of material required for medium size, or 26 inch waist, nine and one half yards of twenty-two-inch material, or seven and one half yards of thirty-six-inch material

No. 945—Coat With Japanese Sleeves

Pattern cut for 32, 34, 36 and 38 inch bust measures. Quantity of material required for medium size, or 36 inch bust, two and one half yards of twenty-two-inch material, or two yards of thirty-six-inch material

No. 946—Skirt With Side Fan Plaits

Pattern cut for 22, 24, 26 and 28 inch waist measures. Length of skirt, 40 inches. Quantity of material required for medium size, or 26 inch waist, ten yards of twenty-two-inch material, or eight yards of thirty-six-inch material

No. 947

No. 943
No. 944

No. 941
No. 942

No. 945
No. 946

No. 947—Box-Plaited Shirt Waist With Revers

Pattern cut for 34, 36, 38 and 40 inch bust measures. Quantity of material required for medium size, or 36 inch bust, four yards of twenty-two-inch material, or three yards of thirty-six-inch material, with three eighths of a yard of tucking for chemisette

NO MATTER how many other linen gowns she may have, the fashionable summer girl will add to her wardrobe at least one or two linen coat suits. She really couldn't help it after seeing the new models, for these three-piece suits are a novelty in themselves. The coats are fetching, short and fanciful, and the greater number are made with Japanese sleeves, which are cut in one with the coat. If the skirt and coat are of plain linen, say dark green, then the waist to wear with it will be of green and white check or striped linen. Or sometimes the gown is planned in quite the opposite way, like a Doucet model just imported, where the skirt and little short coat were of green and white striped linen, with the shirt waist of green linen elaborately embroidered with soutache braid. Linen baby princess dresses are much in vogue also, and they come with a little short coat made mostly of Irish lace, though the foundation is really linen. The linen note is often seen in the silk coat. Sometimes it will appear only in the buttons and in an inset outlining the buttonholes.

Send all pattern orders to the Pattern Department, Farm and Fireside, 11 East 24th Street, New York City. In ordering, give number of pattern and bust and waist measures required. The price of each pattern is ten cents. Write for our new summer catalogue; sent free on request.

A Page of Summer Shirt Waists

Here Are the Newest Fashions in Both the Severe Tailored Shirt Waists and the Lingerie Models

No. 907—Vest Jumper With Guimpe
Sizes 34, 36, 38 and 40 inch bust measures.

THE dividing line between the tailored shirt waist and the lingerie waist has never been so marked as this summer. Both waists are in fashion. The smartest of the tailored waists are made in severely plain designs. These waists show a broad-shoulder effect and have long sleeves finished either with a wristband or a starched cuff. Sometimes they are made with box plaits stitched from shoulders to waistline, and then again they are perfectly plain with just a few tucks on either shoulder. Pockets are now appearing on these waists, and those most in fashion have a little buttoned-over flap.

With these waists a stiff linen collar and a smart little bow are invariably worn. They have entirely taken the place of the stock. The bows are very small indeed, and are of satin or silk, oftentimes in two shades of one color.

The well-put-together girl is always careful in the selection of her belts to wear with her different shirt waists. It is in very bad taste to wear a satin girdle belt with a tailor-made shirt waist, and even the ribbon belt is no longer considered smart style with a severely plain shirt waist. A kid belt is quite the proper thing, or a linen belt. The newest linen belts are either embroidered or trimmed with an appliquéd design in soutache braid.

Linen, mercerized madras, piqué and cotton rep are always good materials to select for this style of waist. To have the belt match the material of the waist is advisable. The woman who can afford to have but few shirt waists will find the new Marie Antoinette fronts a great convenience. They consist of a band of the material or insertion, if one prefers it, edged with a plaiting of lawn finished with a little lace frill. They are invaluable in making the plain waist look dressy.

Double-breasted effects are good style for the tailor-made shirt waist fastening with large buttons.

MADISON SQUARE PATTERNS

Our magnificently illustrated summer catalogue of Madison Square patterns will be sent free upon request. Order all patterns from Pattern Department, Farm and Fireside, 11 East 24th Street, New York City.

Full descriptions and directions are sent with the pattern as to the number of yards of material required, the number and the names of the different pieces in the pattern, how to cut and fit and put the garment together, and also a picture of the garment as a model to go by.

ALL PATTERNS ARE 10 CENTS EACH

When ordering be sure to comply with the following directions: For ladies' waists, give bust measure in inches; for skirt pattern, give waist measure in inches; for misses and children, give age. To get bust and breast measures, put a tape measure all the way around the body, over the dress, close under the arms. Order patterns by their numbers. Satisfaction guaranteed or money refunded.

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We will give any two of these patterns for sending two yearly subscriptions to Farm and Fireside at the regular price of 25 cents each. Your own subscription may be one of the two. When ordering write your name and address distinctly. We will send Farm and Fireside one year, new or renewal, and any one pattern for 30 cents.

No. 857—Double-Breasted Shirt Waist
Sizes 32, 34, 36 and 38 inch bust measures.

No. 811—Box-Plaited Shirt Waist With Pockets
Sizes 34, 36, 38 and 40 inch bust measures.

No. 885—Misses' Plaited Shirt Waist With Pockets
Sizes 12, 14 and 16 years.

THERE is no end to the amount of money one may spend in the big shops for lingerie waists this summer. But it is a comforting thought that dainty and pretty effects may also be obtained with very little expenditure of money by the woman who does her own sewing. The woman who makes her lingerie waists must be very careful to adapt the style of trimming that she uses to her own individual figure. That is the first rule for success. All the lingerie waists are made to button in the back, and the sleeves are short, either ending just below the elbow or an inch above it. The sleeves are all very elaborate, and are tucked and trimmed with lace. Many of the prettiest of the waists show the double-yoke effect. That is, the upper part of the body of the waist will be laid in a mass of fine tucks stitched down to simulate a deep yoke, then above this yoke effect will be a little yoke, and it is here that a touch of color may be prettily introduced.

The waist shown on this page in pattern No. 922 is a good illustration of this style, the color note being introduced in the embroidered design which trims the little yoke. Separate motifs of embroidery or lace frequently in the form of flowers make a charming trimming for the lingerie waist. If one cares to take the trouble, the lace design may be outlined in a colored embroidery stitch and then appliquéd upon the waist.

For the lingerie waist white batiste is about the best material to use, although fine lawn will make a dainty waist, and of course nainsook and handkerchief linen, if one can afford them. Many of the waists made of sheer fabrics are trimmed with rather coarse lace, though it is always good style to use the fine imitation Val as a trimming. The majority of the lingerie waists have the soft lace-trimmed collar consisting of a straight band fastening at the back with tiny buttons or hooks and eyes.

IF YOU want your dress skirt to hang as it should, straight through the season—every plait in its place, etc.—be sure to see that you take good care of it when you are not wearing it. Never hang your skirt up until it has first been adjusted to a skirt hanger. By doing this the skirt will hang evenly. There are all sorts of skirt hangers these days, but one which keeps the skirts in perfect shape is made of nickel with a hook at the top, and two firm clasps at either end. The clasps are attached to the band of the skirt, which is, of course, first folded, back and front together. The center hook hangs from the closet hook or a nail, and the lower part slips through the placket of the skirt, so that there is no sagging.

THE collapsible hat box is something new. It folds up perfectly flat and occupies but little room. It is very easy to make. The box is in three parts. Two square hat box covers are used, one forming the bottom, and the other the top of the box, and the collapsible side walls of the box. These are made by cutting a square hat box carefully, and then joining the pieces with muslin strips, which give the corners sufficient play to allow folding. The bottom of the box is strengthened by a square piece of muslin, which must be cut diagonally, so that it does not interfere with the folding. Ribbons are fastened to the sides of the collapsible walls, and tie in a bow over the cover.

No. 873—Plaited Shirt Waist
Sizes 32, 34, 36 and 38 inch bust measures.

No. 922—Tucked Lingerie Waist With or Without Yoke
Sizes 32, 34, 36 and 38 inch bust measures.

No. 698—Lingerie Waist With Yoke
Sizes 34, 36, 38 and 40 inch bust measures.

No. 891—Plaited Shirt Waist With Tab Yoke
Sizes 32, 34, 36 and 38 inch bust measures.

Jes' Plain Torpedoes

The good old Fourth's a-comin'—
the best day in the year,
And little chaps get anxious-like,
when once it's drawin' near;
They talk of fire crackers and they
dream about the noise,
The dear old Fourth was certainly
jes' made fer little boys.

Bill's got a great big cannon, with fuse you
have to light,
And lots of great big crackers that's filled
with dynamite;
But I'm a little feller—ain't half as old
as he,
And I guess that plain torpedoes will have
to do fer me!

Pa says that giant crackers ain't fit fer
little chaps.
He's sore on all toy pistols and hates these
paper caps.
He don't intend his children shall ever
celebrate
By blowin' off their fingers—he says they'll
have to wait.
"You're nothin' but a baby," my father says,
"as yet,
And your daddy can't quite spare you; he
needs you bad, you bet.
Bill's got some giant crackers? Well, that
I know is true,
But I guess that plain torpedoes will have
to do fer you."

It's hard to have big brothers and watch
them at their play,
And jes' to be a little chap and sort o' in
the way;
To have folks always tell you, you can't
do thus and so,
Because you're jes' a little chap—not old
enough, you know.
But ma, she sees I'm tearful, so she takes
me in her lap
And says, "Why, what's the matter, you're
cryin', little chap."
Then, as she bends to kiss me, I'm brave
as I can be,
I guess that plain torpedoes are good enough
fer me!

—Louis E. Thayer.

◈

An Uncle Sam Party

THE kind of party that will best suit the little folks will be found to be an Uncle Sam party. Make a large figure of Uncle Sam with beaver hat, striped clothes, painted on cheap muslin and placed against the side wall. Give each child a tiny flag with pin stuck in the end of the handle. Place the children in a row and blindfold them all at the same time, then start them out to find the Uncle Sam and place the flag in his hand. Warn them against moving swiftly and bumping into each other, and clear the room of all furniture, so they cannot get hurt, guarding the windows and doors. For outdoor sports have a target and arrows and let the boys have a shooting match and arrange a series of athletic events. A doll race for the girls may be arranged by having the dolls dressed as they run—at the first distance have the doll's shoes and stockings, at the next her dress, at the next her hat, at the next her coat. Start the girls at a signal, and they must run and catch the articles and put them on the dolls as they go. Give a small silk flag to the girl who gets her doll dressed first.

◈

Where liberty dwells, there is my country—Benjamin Franklin.

◈

Pick-Ups From History

[CONTINUED FROM LAST ISSUE]

SINGULAR DEFENSE OF A FORT

TOWARD the close of the seventeenth century the Iroquois Indians made various attacks upon the French in Canada. During this period one of the forts was defended with such singular courage and presence of mind that it has been deemed worthy of a place in this series. At one time a party of these Indians so unexpectedly made their appearance before Fort de Vercheres that a girl of fourteen, the daughter of the proprietor, had but just time to shut the gate. With this young woman there was no person whatever except one soldier; but not at all intimidated by her situation, she showed herself sometimes in one place, sometimes in another, frequently changing her dress, in order to give some appearance of a garrison, and always fired opportunely. In short, the faint-hearted Iroquois once more departed without success. Thus the presence of mind of this young girl was the means of saving the fort.

NOBLE EXAMPLE OF A RUSSIAN PRINCESS

'Tis true that the "good alone have joy sincere, the good alone are great." Although high in station, the heroine of our present sketch was great because good. As the story runs, Michael Schupbach, the Swiss doctor, who, by the wonderful cures he wrought on persons who had been given up by regular physicians, had obtained so great a celebrity during the last century that he was visited often by people of distinction and fortune, especially from Germany. There was once assembled in his laboratory a great many distinguished persons from all parts of the world—partly to consult him and partly out of curiosity—and among them many French ladies and gentlemen, and a Russian prince with his daughter, whose singular beauty attracted general attention. A young French marquis attempted, for the amusement of the ladies, to display his wit on the miraculous doctor, but the latter invariably turned the laughter on the other side, and the Frenchman was wise enough to desist. During this conversation there entered an old peasant, meanly dressed, with a snow-white beard. The doctor directly turned away from his great company to his old neighbor, and hearing that his wife was ill, set about preparing the necessary medicine for her, without paying much attention to his more exalted guests, whose business he did not think so pressing. The marquis now turned his wit on the poor old man. After many silly observations on his long white beard, he offered a wager of twelve louis d'ors that none of the ladies would kiss the dirty-looking fellow. The Russian princess hearing these words made a sign to her attendant, who brought her a plate. The princess put that amount on it, and had it carried to the marquis, who, of course, could not decline adding the same. Then the fair princess went up to the old peasant with the long beard, and said, "Permit me, venerable father, to salute you after the fashion of my country." Saying this, she embraced him and gave him a kiss; she then gave him the gold which was on the plate, with these words: "Take this as a remembrance of me, and as a sign that the Russian girls think it their duty to honor old age."

◈

SETTING OFF A PACK

A Fourth of July Rebus. Can You Read It?

Answer to Horse Puzzle in the June 10th Issue: Poll, Withers, Throat, Pasterns, Breast, Loins

'Tis the star-spangled banner,
Oh, long may it wave
O'er the land of the free
And the home of the brave.

—Francis Key.

◈

Our National Flag

THE history of the American flag is one of great interest, and every boy and girl should be sure to read the following:

"The red in our flag stands for valor, the white for purity, the blue for justice. Our first Revolutionary flag generally used was called the Grand Union flag. In this the colonists, who, we must remember, were still Englishmen, kept the red ground of the old English flag, but striped it with white bars, so that there should be thirteen lists, or stripes, as an emblem of the thirteen colonies. Also, they kept the blue field of the English Union Jack, but took out the crosses of St. George and St. Andrew, and put instead thirteen stars in a circle. This flag was inaugurated by Washington at his camp in Cambridge, Massachusetts, in January, 1776, though it was not adopted by Congress until the fourteenth of June, 1777.

"Some of our flags of about this time show the stars arranged in the blue in the shape of one big star, and some show them arranged in a circle. The permanent present fashion was adopted after 1818, when Congress passed a resolution that a new star should be added to the blue field for every new state.

"Our nation's flag is hoisted at the main of all our ships of war. Some people believe that the use of the stars and stripes in our flag was suggested by the escutcheon of General Washington, which bears both these emblems.

"The great beauty of our flag is very generally recognized by other nations. When it was first carried by an American ship into Chinese waters, the Chinese thought it was as beautiful as a flower. Every one hurried to see Kaw-Kee-Cheun, or the flower-flag-ship. This name at once became a part of the Chinese language. America is still called by the Chinese, Kaw-Kee-Kah, or the flower-flag-country, and Americans are known in China as Kaw-Kee-Koch-Yin, flower-flag-country-men."

◈

The God who gave us life, gave us liberty at the same time.—Thos. Jefferson.

◈

It Still Lives

WHEN Daniel Webster spoke the words "Liberty and Union, now and forever, one and inseparable," he indited on the pages of American history something that will never cease to furnish renewed interest to Americans, young or old, in the re-reading. In school life this patriotic literary gem becomes familiar to every boy and girl, and it is too good to ever be forgotten.

"When my eyes shall be turned to behold for the last time the sun in heaven, may I not see him shining on the broken and dishonored fragments of a once glorious Union; on states dissevered, discordant, belligerent; on a land rent with civil feuds, or drenched, it may be, in fraternal blood! Let their last feeble and lingering glance rather behold the gorgeous ensign of the Republic, now known and honored throughout the earth, still full high advanced, its arms and trophies streaming in their original luster, not a stripe erased or polluted, not a single star obscured; bearing for its motto no such miserable interrogatory as, 'What is all this worth?' nor those other words of delusion and folly, 'Liberty first, and Union afterward;' but everywhere, spread all over in characters of living light, blazing on all its ample folds, as they float over the sea and over the land, and in every wind under the whole heavens, that other sentiment, dear to every true American heart, 'Liberty and Union, now and forever, one and inseparable!'"

The Wedding Ring

It is remarkable what significance the ring holds with different people and in different countries. The Quaker and Swiss Protestants do not use rings at their marriage ceremonies, while the women of the Upper Bayanzi on the Congo wear their wedding rings around the neck. These rings are made from thick brass, strongly welded, and the more wealthy the husband, the heavier the ring, in some cases weighing as much as thirty pounds. The Egyptians are given credit for the pretty custom of placing the wedding ring upon the finger of the bride, it being a token entrusting the wife with all the husband's property. The custom being used by the early Christians was thus handed down.

◈

Long-Term Congressmen

Of the twelve thousand and more congressmen who have served since the foundation of this government, only thirty-four have served twenty years or more. John H. Ketchum, of New York, served thirty-three years and was a member when he died. Mr. Cannon comes next in length of service, he having served thirty-two years, and since he is elected to the next Congress he will, if he lives to the end of his term, take first rank in the list of congressional veterans.

◈

Raising the Eskimo

The Eskimo baby is not greeted by the orthodox cradle and swaddling clothes. Until he can shift for himself the baby lives absolutely naked inside his mother's sealskin blouse.

Spared the miseries of soap and water, and early weaned to the readily swallowed diet of blubber and raw seal meat, the infant rapidly develops that invaluable layer of subcutaneous fat, which, while it enhances the "jolly" appearance of the lads and the shapeliness of the maidens, assists materially in the economy of clothing.

Thus in their frigid clime, once in their skin tent, the whole family will divest themselves of every stitch of clothing, unembarrassed by the fact that so many families share the tent with them. Sociability is early developed when one's next-door neighbor on each side is only separated by an imaginary line between the deerskin you sleep on and the one he uses. The winter deerskin serves as bed and bedding at night and as parlor furniture during the day. Community of goods is almost imperative under this arrangement. Thus, when one kills a seal, all are fed; and likewise, when he doesn't, all go hungry together.

Of Curious Interest

Illustrated Contributions to This Department Are Invited, and Those Accepted Will be Paid For

DECK VIEW OF THE GREAT FERRYBOAT "SOLANO"

Largest Train Ferryboat

The great ferryboat "Solano" transports freight and passenger trains of the Southern Pacific Railroad Company across upper San Francisco Bay. This ferry is said to be the largest of its kind in the world.

The ferry runs into a slip prepared for it on either shore, and fits so snug, when the landing is made, that the tracks on land and those on the boat fit exactly end to end. The train on the boat runs ashore, and the one waiting rolls aboard. As the ferry is over four hundred feet long, a passenger train of five cars need not uncouple; but the long "overland" trains, consisting of twelve and thirteen cars, are cut in the middle and drawn aboard in two sections.

◈

Wedding Superstitions

Married in January's hoar and rime,
widowed you'll be before your prime;
Married in February's sleety weather,
life you'll tread in tune together;
Married in March winds' shrill and
roar, your home will lie on a foreign
shore;
Married 'neath April's changeful skies,
a checkered path before you lies;
Married when bees o'er May blooms
flit, strangers around your board will sit;
Married in queen rose month of June,
life will be one long honeymoon;
Married as July's flower banks blaze,
bitter-sweet mem'ries in after days;
Married in August's heat and drowse,
lover and friend in your chosen spouse;
Married in gold September's glow,
smooth and serene your life will flow;
Married when leaves in October thin,
toil and hardship for you begin;
Married in veils of November mist,
Fortune your wedding ring has kissed;
Married in days of December cheer,
Love's star shines brighter year to year.

The Truth Proven

A visitor to Ireland was told that no tip, however large, would be considered enough by a certain jarvey. To make the test complete, he gave the man a sovereign. "That's for yourself," he said, "to buy a drink."

The jarvey looked at it pathetically, and said nothing.

"Isn't it enough?" asked the visitor; and then the jarvey's gratitude broke out.

"'Twould be a shame," he concluded, "to break upon that bonny piece for the price of a dhrink. Maybe you've as many coppers about ye as'ull pay for a glass for me?"

THE GLORIOUS FOURTH

Small Boy—"Would you mind holding this dog for a minute, mister?"

Kind Man—"Certainly not, my young man. How long would you like me to hold him?"

Small Boy—"Till I get this pack of fire crackers tied on his tail."

A True Fish Story

Admiral Sigsbee, at a banquet in Washington, was once called on unexpectedly to reply to a toast. His impromptu reply was very graceful and brilliant, but at the start he was rather confused, and he covered his confusion in this way:

"I am taken aback," he said. "I am in the position of the fisherman who fell into the water and was nearly drowned. A hunter, however, rescued him, and after he had brought him to, the hunter said, 'How did you come to fall into the water, sir?' 'I didn't come to fall into the water,' the fisherman answered, 'I came to fish.'"

◈

Handy

A man who is always on the lookout for novelties recently asked a dealer in automobiles if there was anything new in machines.

"There's a patented improvement that has just been put on the market," replied the dealer. "A folding horse that fits under the seat, for use in emergencies."—St. James's Budget.

◈

Court or Caught

"Sold your automobile, eh?" exclaimed Wyss. "What was the trouble?"

"Couldn't control it," explained Acher. "When I ran fast it took me to the police court, and when I ran slowly it didn't take me anywhere."—Harper's Weekly.

Wit and Humor

Handed Hot

A judge in Kentucky, by reason of his bad temper, found considerable difficulty in controlling individuals in the courtroom. On one occasion there was unusual disorder. At last the judge could stand it no longer. "It is impossible to allow this persistent contempt of court," exclaimed his honor, "and I shall be forced to go to the extreme length of taking the one step that will stop it!"

There followed a long silence in the court. Finally one of the leading counsel arose, and without the suspicion of a smile, asked, "If it please your honor, on what date will your resignation take effect?"

◈

Troubles Enough Already

A highwayman held up a gasoline runabout on the outskirts of Rome with a shot in the air. Then he ran forth from the tomb that had concealed him—the hold-up happened on the Appian Way—and found, to his surprise, only a woman in the little car.

"Where, madam, is your husband?" he demanded, sternly and suspiciously.

"He's under the seat," she answered, flushing.

"Then," said the highwayman, "I won't take nothing. It's bad enough to have a husband like that, without being robbed into the bargain."—Argonaut.

Her Way of Putting It

"If you please, ma'am," said the servant from Finland, "the cat's had chickens."

"Nonsense, Gertrude!" returned the mistress of the house. "You mean kittens. Cats don't have chickens."

"Was them chickens or kittens that master brought home last night?"

"Chickens, of course."

"Well, ma'am, that's what the cat has had."—Youth's Companion.

◈

Her First Attempt

Mrs. Newlywed had her first venture at cooking dinner in her own home, which passed successfully, and they sat in silence at opposite ends of the table, wondering at the novelty of it all and gazing at each other.

"Honestly, honestly—on your word of honor—did you like it, darling?" she asked finally.

"Never enjoyed anything so much in my life," he said, and swallowed a lump.

"Everything, everything—from soup to pudding?"

"Every mouthful, from soup to pudding," he said bravely.

"Oh, I am so relieved, then!" she said, as a huge sigh escaped her. "You see, I forgot to order the sirup for the sauce for the pudding, and I had to have something, so I took your cough sirup, and I was so afraid you'd taste it."

Prison Repartee

Senator Tillman was discussing a recent quarrel among financiers.

"Those men threw a great deal of mud at each other," he said, smiling, "and most of the mud stuck. It was an interesting squabble. It reminded me of an incident in a Southern jail.

"There were two prisoners in this jail. One was in for stealing a cow. The other was in for stealing a watch.

"Exercising in the courtyard one morning the first prisoner said tauntingly to the other:

"'What time is it?'

"'Milking time,' was the retort."—Washington Star.

POINT WELL TAKEN

Farmer—"You mean to say, then, that you caught a trout that weighed ten pounds and that he got away?"

Fisherman—"Yes, sir."

Farmer—"Will you swear to that?"

Fisherman—"No, sir. I'll take no more oaths. I swore enough about it when he got away."

A Bloodless French Duel

A bloodless duel has just been fought between a newspaper editor and a politician. The latter regarding himself insulted by an article published by the former, addressed to him the following letter:

"Sir:—A man who respects himself refrains from sending a challenge to an individual such as you. He satisfies himself by simply smacking your face. Herewith please consider your face smacked twice, one on each side."

To which the journalist replied:

"Dear Sir:—I am in receipt of the two smacks which you sent me and for which I am obliged. Kindly accept a bullet through your head. With kind regards to your corpse. Yours truly."

And all honor was satisfied.—Pele Mele.

◈

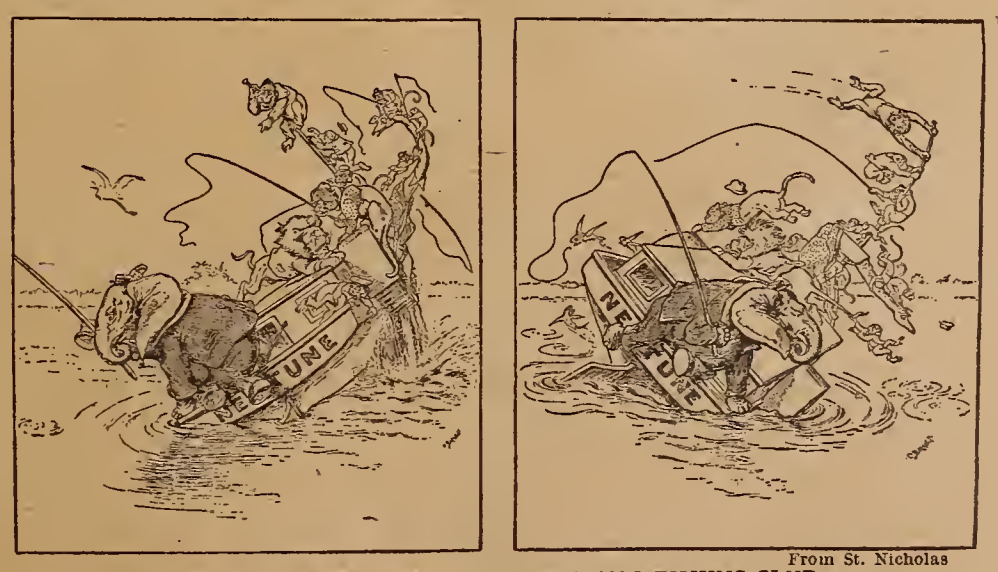
Love Your Enemies

An Irish priest had labored hard with one of his flock to induce him to give up whisky.

"I tell you Michael," said the priest, "whisky is your worst enemy and you should keep it as far from you as you can."

"Me enemy, is it, father," responded Michael. "And it was your riverence's self that was tellin' us in the pulpit only last Sunday to love our enemies."

"So I was, Michael," rejoined the priest, "but I didn't tell you to swallow them."



From St. Nicholas

THE ANNUAL EXCURSION OF THE CONGO FISHING CLUB

Chorus of Members—"Hey there, in the stern! Trim the boat."

The Thick-Skinned Member—"Beg pardon, were you speaking to me?"

The Grange

BY MRS. MARY E. LEE

OFFICERS WHO ARE WORKERS

I HAD not kept in close touch with the work of the church, and so said to a minister of the General Assembly of the Presbyterian Church held recently, "I want to get the heart of the work for my readers. To whom shall I go?"

He named several.

I replied, "But they are officers, and my experience has taught me that quite often the officers of an organization are not workers save to get the office."

He looked surprised, and said, "Our officers are workers, and there is enthusiasm in every one of them, because they have won their spurs. There are others who are capable and worthy, but there isn't a Presbyterian that does not recognize the wisdom of placing the men in office where they are."

"But," I said, "the men and women who work because they must work, who find no hardship too great, no sacrifice too deep to hinder them from working, who are inspired from on high, who possess a boundless enthusiasm for humanity and for service, whose conception of pain is loss of opportunity of working, these are the men and women I want to see. These are the ones my readers want to hear from. Official honors are good and hardly won, but very often those who win them are content with that service alone. They may have no organization in their own localities, may seldom take part in a meeting, yet by the peculiar chicanery, known to shrewd politicians, get into office."

"All of our officers are workers," he replied.

For two weeks I listened to the speakers, and would have done it two weeks longer. Seldom has there been more enthusiasm, more generous appreciation of others' work, more determination to win the world, than at this meeting. If there were troubles, they did not appear. It was a vast concourse, with over one thousand commissioners all working for humanity, and, I thought, the minister was right, that these men in power deserved the place, and that there were others who would fill their places when their services were ended.

The bickering, the plotting, the scheming, if present, did not appear to those who gladly spent time in gaining the spiritual uplift that came from this great concourse of workers. And with the prayer that constantly went up for greater power to better do my work came this deep plea, that only those who loved the Grange well enough to serve it at home or abroad, whose splendid enthusiasm could not be resisted, might lead the Grange in each state to greater effort and richer achievement.

I prayed that the membership in each state in the Union might be so quickened, so touched with the spirit of endeavor, that never again could it be said that in their state were elected to places of leadership those who from one year's end to the other never entered their Grange halls, whose home Grange was dead, who rode miles to an occasional meeting instead of working up a Grange at home. I prayed that the membership might be so quickened into life that only those of splendid enthusiasm and noble achievement, who could inspire the state to greater and better effort, might ever again be chosen as leaders. When this is done, when the leaders are known because of service for humanity, and not because of office in the Grange, when from every nook of the state there is splendid enthusiasm for better service, then will the Grange take its rightful place among the great powers of this country; then can nothing withstand it, because its work is good and its leaders leaders in truth and in spirit; then will every member and every visitor at the state meetings go home filled with such exaltation and love of service as will make them invincible; then will the Grange grow in power and in magnitude.

Ah, when this is done, then will the farmers cease complaining of injustices, because they will be in shape to right them. Then will workers, chafing under the constant restriction of those who will not work themselves, nor let others work, turn with renewed courage to the work for the uplift of humanity.

◈

CHILD-LABOR LEGISLATION

There is wide-spread interest in child-labor legislation. Senator Beveridge has a bill in the Senate. New York passed a law that no child under sixteen shall be employed more than eight hours a day, the hours to be between 8 A. M. and 5 P. M.

While I sympathize with every effort to make better citizenship, I earnestly question the wisdom of raising the age limit above fourteen years. The vice of indolence will break down the character of the child faster than the gain in intelligence will strengthen it. Far better than to raise the age limit would be to have men or women of high character as truant officers, who thoroughly understand the conditions of the wards or precincts in which they operate. Let them gain a thorough knowledge of the situation from the point of the school and of the home. If the child is worthy of more training in school, and will yield an increase in intelligence commensurate with expense, surround him with every possible opportunity to gain more schooling. If he is needed at home, and will go to night school or improve himself out of school, see that he has such an opportunity. But do not make a compulsory law keeping all children, irrespective of taste and inclination to study, in the schoolroom till sixteen. The time will be worse than lost, losing not only the money value of a wage earner, but forming habits of indolence.

Mrs. Hyre of the Cleveland School Board well says that eight years will qualify the average child in the essential studies and demonstrate whether it is wise to select a higher education or enter upon some trade or business career. If a child is not sufficiently interested in book study to finish his grade work except as he is forced to do so by law, he had better go to work at fourteen and find out where he does belong if not in school. If he is not interested in intellectual pursuits by the time he is fourteen then the best place for him is in some factory or shop or business, where he will be interested and where he can work off the superfluous energy that is often spent in a manner that brings him before the juvenile court or sends him to the reform farm.

If the next legislature could give enlarged and discretionary powers to the truancy department, empowering them to keep a record of every child that leaves school at fourteen years, and for the next two years thereafter see that he works or else compel him to return to school, I believe that this guardianship would start him upon an industrious life.

In addition to this, the truancy department should be a labor bureau for boys of this age, to whom manufacturers and business men could apply for boys of legal age to work.

The aim of all legislation is to make the youth a helpful member of society. Some can be made so by education in the schoolroom, others who would make no progress in intellectual pursuits by education in life. Lack of employment is doing more to sap the moral stamina of the youth of our day than any other thing. The reason farm children reap greater success than city and town is not because of superiority of school advantages, but because of thrift, industry, economy, regular hours and a temperate life. These qualities bring success in spite of the lack of educational advantages. Legislation should aim to keep the child employed in gainful pursuits, both mentally and physically, and any legislation that arbitrarily limits this will work against the best development of the citizen.

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THE OBSERVATORY

Pennsylvania has a pride in her state and its workers, for which I am devoutly thankful. They are doing something to make them worthy of the claim. Cyrus DeMott writes: "Hon. John G. McHenry should not be credited to Kansas, as given in the May 10th issue, but to Pennsylvania. He was elected Congressman from the Sixteenth District of Pennsylvania. He is the special representative of the State Grange on banking interests."

The entire country is watching Pennsylvania's experiment of establishing Grange national banks.

Kansas has for many years conducted with signal success Grange co-operative business affairs, and Grange banks as well as insurance. While the Grange itself does not do the business, only members can be shareholders or officers.

"Tax commissions have had their day in many states, and many times in some states, yet no state is particularly well satisfied with its taxation system. Called to do a work of high value, requiring close study, tedious investigation, the rarest kind of ability to grasp a multitude of details, tax commissions require ample time in which to perform their work, and ample payment for their time, so they can afford to devote themselves to the work to be done."—Public Policy Editorials.

MANIFOLD USES OF THE COW PEA

For the maintenance of fertility and the restoration of soils the cow pea is the greatest acquisition of the age, there being practically no competition in this respect between it and alfalfa. It is with another member of the legume family, clover, that we must compare the cow pea as a fertilizer, and in this comparison it is well able to hold its own.

That which gives a peculiar value to the pea is the remarkably short period in which it matures and forms a bulk of vegetable matter to turn under. Clover, as we all know, requires fifteen months to complete its growth; the cow pea, only three. Clover, too, is particular about the kind of soil, and will not start readily on poor land. While the pea makes a larger growth on rich soil, yet the ground seldom gets too poor to sprout peas. On the contrary, rich soil is not best for them; they make a great growth of vine at the expense of seed, while on thin soils they stand erect and are loaded with peas.

In an intensive system of farming or fruit growing, where the object is to keep the land constantly growing some crop, the cow pea fits in to fill out short spaces between crops and to supply the necessary humus to the soil in a way done by nothing else. Where land is scarce and high it is impossible to give to clover the time required by it to make its full growth.

In southern Missouri and on south the pea can be sown after the wheat is cut, and will mature in time for another sowing of wheat in the fall, thus enabling this rotation to be kept up indefinitely.

The seed always commands good prices at the large markets and is itself a profitable crop. The yield will run as high as fifteen bushels to the acre; and after the peas are hulled, the fodder still makes fine hay, so that it virtually supplies two crops—hay and grain. When sowing for a large yield of seed, never sow them on rich bottom land; they will all run to vine and make very few peas. Put them on rather thin sandy or clay soil, and sow rather late, about the first of June, or when clover is about in full bloom.

On the fruit farm they make a fine preparatory crop for almost anything, and especially for strawberries. On land that is benefited by fall plowing they may be turned under in the fall, but otherwise they may be left till spring, with a top dressing of manure scattered over them to add to their effect.

Were it not for the pea there would be intervals between crops that would be hard to fill up with anything. When the old strawberry bed is turned under, for example, peas should be sown to fill the gap between that time and fall.

Their use as a cover crop in the orchard is too well known to dwell on. In the East, or at least a portion of it, crimson clover flourishes and can be sown in August, but in the West it is not successful. Peas sown about July 1st, when cultivation of the orchard should cease, form a dense mat on the ground, shading and cooling it. They will also keep down the weeds if sown thick enough. For smothering weeds I should recommend two bushels of seed to the acre. I find them valuable to sow even in the narrow middles of the blackberry and raspberry fields. Cultivation kept up all summer is a great depleter of the humus in the soil, and the best way to avoid this is to cease cultivation in July and sow the ground to peas. They can be allowed to lie until the next spring, and their effect is to loosen up the soil and make it friable and porous, the large roots of the peas decaying slowly and forming conductors for the water to penetrate deep.

They also make a good pasture for the poultry. The fowls will forage through them, hunting for ripe pods and breaking them open for the seed. A little of the hay thrown into the scratching shed during the winter will set the hens to working as energetically as wheat or corn. Peas are excellent egg producers, and their effect is at once noticeable in late summer and early fall when they begin to ripen.

I find that six acres of good pea hay will furnish plenty of forage for two horses and a cow from grass to grass, and if the peas are not hulled, the team will require no grain at all while they are idle. A good rotation for a poor piece of ground, and one that will annually improve it, is to sow peas every spring for hay, and sow rye as soon as peas are cut. for fall, winter and spring pasture. The land will thus be constantly producing either a crop of hay or a good pasture, while all the time it is improving in fertility. L. R. JOHNSON.

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Every reader of FARM AND FIRESIDE should read our guarantee about advertising. If you have not seen it, turn to the editorial page of this issue and read the paragraph "About Advertising."

OATS FOR HAY

In a season when hay is going to be scarce it is very essential that the farmer should mow at least a part of his oats crop for hay. We almost always mow our entire crop for hay, as it makes a splendid feed for dairy cattle and horses.

Some farmers have never heard of this way, and others have heard, but never tried it. I would advise them to try some this season. The prospect for clover and timothy hay is very poor in some localities, and if the farmers will try mowing oats for hay they will find it quite a boon.

Mow the oats when the grain is in the dough and the stalks are green or just turning yellow. Let it cure and mow away the same as other hay.

This method also gives clover that is sown in oats a better chance to grow, as the oats are off the ground earlier and do not take so much nourishment from the clover as when left to ripen.

F. KING.

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FORAGE CROPS

I am somewhat surprised that there is so little mention of vetches in all the articles about green feed for farm stock. I was in hope some one abler than myself would call attention to vetches in FARM AND FIRESIDE, but I hope I can induce some farmers to try it.

Value being a first consideration, compared with alfalfa hay (Farmers' Bulletin No. 22), I give the three principal elements:

Vetch hay, protein, 17.0; nitrogen free ext., 36.1; fat, 2.3; average five analyses.

Alfalfa hay, protein, 14.3; nitrogen free ext., 42.7; fat, 2.2; average twenty-one analyses.

This shows that vetches are higher in protein than alfalfa, and entitled to consideration accordingly.

I use the analysis of the hay to show the relative value of vetches. Being an annual, the vetches would not take the place of alfalfa for hay.

But wherever one has land they can devote to growing green feed, they will produce a great amount of rich, palatable feed. Being a gardener, as soon as land in the fall is cleared of crops, I sow vetches with rye in every available spot; and where land lies vacant in the spring long enough, as where only a late crop, such as cabbage or celery is grown, it pays to sow it early with rye and vetches.

The seed is similar in appearance to sweet peas, and being hardy, it can safely be sown in the fall with rye. It attains a height of four to six feet, depending on the richness of the soil, is greatly relished by all kinds of stock and poultry, besides being a wonderful producer of milk.

On rich, moist garden soil several crops can be cut in a season, which leaves a sod almost equal to a clover sod, the roots being well covered with tubercles, as it belongs to the nitrogen-gathering class.

The past season I sowed my celery ground on March 26th, and had really more green feed than I could use before I needed to plow for celery in June, and the sod left the ground in fine friable condition for the celery.

There are spring and fall varieties, but the spring is the only one sowed here. The seed is raised in Oregon, and sells here for three dollars and fifty cents per one hundred pounds.

In cases where the green feed cannot all be used it cures into an excellent hay. It is, however, somewhat difficult to cure, similar to a heavy crop of clover.

HARRY KEMP.

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COW PEAS IN CORN

I have often seen it recommended to sow cow peas in the corn at the last cultivation and allow them to be either pastured off after the corn crop is removed or to be plowed under for the benefit of the soil.

This may be a very good plan for some localities, but my limited experience indicates that the corn gets so much the start of the peas that they do not amount to much.

A plan I like much better is to take a hand corn planter and plant the cow peas midway between the corn hills as soon as the corn comes up enough for me to see the hills.

The cow peas will not injure the corn crop. In fact, they seem to be a benefit to the corn. They will make a heavy growth and be full of pea pods.

If it is desired to save seed, the pods may be gathered by hand. If it is desired to use them for feed, stock may be turned in to harvest the peas as soon as the corn is harvested. If they are to be used for the benefit of the soil, they may be plowed under or cut into the soil with a disk harrow. The peas will be of benefit to the soil any way they are managed, since they will leave a large amount of material for humus, and the roots and stubble are both rich in nitrogen. A. J. LEGG.

PAYING NATURE'S PENALTY

As ALL men know, we are a daring people. "Next to the inhabitants of Mars, we have taken more liberties with the face of Nature than any other race." Every year, however, we have a reckoning day. The Chicago "Evening Post," in a strong plea for the preservation of our forests, puts the situation thus:

"Within the short period of thirty-six hours a few weeks ago the Ohio River flood caused $15,000,000 damage at and near Pittsburg, and made idle more than 100,000 workmen, besides claiming a number of lives and placing thousands in danger. It is called the spring flood; it might be termed Nature's revenge.

"The causes of the high water in the Ohio, as usually stated, are unusually heavy rains coming with a sudden rise in temperature that almost in a night melted the deep snows in the mountains. That is the immediate cause, back of which stands the 'tragedy of the trees.' Years ago the hills, whence flow the streams that unite to make the Ohio, were covered with dense forest growth. In those days the snow, protected from the direct rays of the sun, melted slowly in the spring time, and the soil, absorbing a great part of the water, robbed the freshets of much of their menace. Heavy rains, of course, brought high water, and sometimes floods, but not such a one as that which swept down the Ohio Valley more than once this spring.

"But the coming of the white man sealed the doom of the forests. To-day the trees have all but gone from the mountains, and the result is told in the telegrams from Pittsburg. Of recent years the government has been aroused to the necessity of saving what is left of our forest lands in the East and West. Strange as it may seem, this wise plan, championed by President Roosevelt, has been opposed in and out of Congress. How many more floods in the river valleys, how many more droughts on the plains will be needed to teach us that, clever as we are, Nature's plan cannot be changed entirely without disastrous results?"

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CAPPING THE OAT SHOCKS

"But we don't know it is going to be a wet time, do we?"

Laddie placed a great deal of stress on that word "know." And when it came to that, he had me fast, for who of us does know what the weather will be save as it comes from day to day?

"Man across the creek sets his grain up just two and two. He says it dries out quicker and saves a lot of work. Why shouldn't we do the same way?"

We stood looking across the creek to the oat field of the neighbor, and certainly the shocks did look nice, ranged like companies of men drawn up in line of battle. And it could not be denied that he had done the work of setting his oats up in a good deal less time than we could do ours and cap them, as we always have. We were at the moment putting the cap on a shock. Laddie had brought the splendid bundles to me, ten in a place, and I was fixing one of the largest for the north side of the cap. The other side had already been covered.

I must say over again the word I had said so many times. How patient must be the man with his growing boys!

"That's so, laddie," I begin, still with my head deep in the bundle. "We don't know. Some folks think they do, but they miss it, don't they? That's what I think about capping the oats. Just because we can't tell, we need to be careful."

"No signs of rain now, are there, pa? No streaks in the sky. Barometer's all right. Arrow on the barn is in the good-weather quarter. It don't seem—"

There I was again. Everything was against the idea of bad weather. If there had been even a few signs we farmer folks count on, it would be different.

"That is nice, isn't it? If we have good weather a few days we will have the oats in the barn, out of danger of storms. And we will hope that it will be that way."

Laddie moves on to pick up some more bundles for the next shock.

"Do you think capping them keeps them dry? I should think the water would run right down through these cap bundles and make 'em just as wet as if there wasn't a thing there."

"When we put on the next cap we will look at that a little."

So when it comes to that part of the next shock, I slip one of the bands on the two bundles we have laid out for the cap down toward the butt of the stalks. Then, pressing the butts up to my breast, I opened about half the bundle into the form of a fan, parting the straw first to the right and then to the left. The other half I leave as it was, the straws all straight out. Then I place the bundle thus prepared over the top of the shock lengthwise of the standing bundles. The other cap sheaf is done the same way. Then the butts of both bundles are pressed closely together, forming a sort of roof. The straws now point downward in every direction about the shock and the shock is ready for whatever may come. If the wind blows hard we try to find a small stone to place on the top of the cap.

"There, laddie, you see how it will work. When the rain comes, the straws sloping downward will take the drops off, and so help to keep the under bundles dry. Of course, if there should be a long, hard storm, the bundles would wet through and we could not help it. We rarely have such storms at this time of the year, though."

And we keep on to the end; and that end, as it happens, does count for the caps. For sure enough, a heavy storm comes up. For days the oats stand in the field. The rows of our neighbors standing army are not as fine looking as they were that first day. The shocks are beaten down until some of the bundles are partly lying down. Our own shocks are up in good shape.

But the rain passes away at last, and there comes a day when laddie says, with quite a different tone from that used when we were spending so much time with our caps:

"They say the man's oats on the farm across the creek are all sprouting in the shock. He is worrying about them a good deal."

No wonder. We go out and look at our own. Lifting the caps, we find that while the tops are damp there is no sign of growth. The heads are all fresh and green yet.

"All right, ain't they, pa?"

"Fine! We'll just take the caps off when the sun shines out bright and stand them up. It will not be long before they will all dry out. Then in they will go."

And in they do go. And when the time comes for thrashing—ah, that tells the story! Our grain is as nice and bright as it can be, and the straw is fit for any animal to eat. But what about the man across the creek? Why, the thrashers have had a fearful time doing his job. The bundles were wet as sop. The grain was black and badly damaged. What will the horses and other stock think about it when it comes to next winter? I know what ours will think. They would say it in words if they could; as it is, they will lay on the fat, if they cannot express their gratitude in any other way. They will tell us something very much like this:

"Those oats are just great! Thank you for them. We'll give you the best there is in us, to pay for capping the shocks after the harvest last summer."

And that is enough to make it all worth while. Laddie says so, and his judgment is good—better than it was—about a great many things. E. L. VINCENT.

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WHEN TO CUT HAY

Some time ago I bought some hay from a neighboring farm, and while I was hauling it I frequently heard the remark from persons passing, "That is good hay." But was it?

It was mixed hay of timothy, redtop and other grasses. A close examination showed that when the hay had been cut much of the timothy seed had already fallen off, and of course the timothy stalks were little better than straw. The hay would have been reasonably good if it had been cut at the proper season.

Warrington gives the albuminoid contents of meadow hay cut May 14th as 17.65 per cent; from same field June 9th, 11.16 per cent; June 26th, 8.46 per cent.

The later cutting showed an increase of nearly three per cent of carbonaceous matter over the earliest cutting, and the fiber content increased from 22.97 per cent to 38.15 per cent from May 14th to June 26th; but as fiber is not very digestible at any time, it is plain that there is great loss of nourishing food by allowing hay to stand too long.

Practically all hay should be cut when in bloom. The most valuable food constituents are in the leaves and stems at this stage, but when the grass and clover are allowed to mature seed the food value is principally in the seed. The seed shatters off, and is lost usually.

Another good reason for early cutting is that it is the nature of plants to mature seed, and then die or lose much vitality; but when seed production is prevented by cutting, the plants spring up again more vigorously in the effort to reproduce themselves. Early cutting thus prolongs the life of such short-lived perennials as medium red clover and timothy, and even if the vitality of the plants was injured by early cutting, the gain in food value of the hay would pay for the damage done. A. J. LEGG.