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DETERIORATION OF GRAINS AND SEED SELECTION.

But very few of us seem to realize the binding influences of habit on ourselves. We get the habit of doing things in a certain way, and we do them without thinking whether it is the best way to accomplish the things which we wish to or not. It is worth the while to consider, sometimes, whether the habits we have formed are helping us to accomplish the desired ends or not.

We have fallen into the habit of buying new varieties of grains, keeping them until they run out, as we call it, or we run them out by our bad management, and then we look for, and secure, a new variety, and so on indefinitely. We do not stop to think that the variety breeders are making money out of us by breeding up new varieties of grain and selling them to us at an enormous price, when we might as well breed up our own varieties, and have something superior to that which we can buy from the seed speculators.

In the first place, we overlook the well known fact that hereditary influences are as active with plants as with animals. The inherent tendencies toward productiveness follow lines of breeding with our oats, wheat, peas, beans or barley, as with our stock. We would laugh at a poultry breeder who wishes to make money from securing the greatest number of eggs if he selected his stock of hens by their markings of feathers, and conformation of body, instead of selecting hens from a laying strain that had been bred for several generations for productiveness. We would also criticize a dairyman who paid more attention to color of the hair and beauty than capabilities of milk production. By the customary methods of preparing grain seeds we have acted as unwisely as the fad following poultryman or dairyman, and have been very persistent in our practices.

Our wise counsellors, as well as our forefathers, have urged upon us the importance of using the fanning mill in preparing our seed for sowing and planting, and we have followed along, listening to the beautiful theories of using only the largest and best kernels of grain. The cry has been, "Breed from the best only, and raise the best," a scheme that has sounded well, and we have followed along without looking into the matter, and giving it our close consideration.

I do not wish to be understood as deprecating the use of the fanning mill for the purpose of cleaning chaff, weed seeds, and shrunken kernels, out of the seed already selected, but I do contend that we are making our seed selections at the wrong time of the year, and in an improper manner. We are breeding in the wrong direction—away from instead of toward the desirable characteristic, productiveness.

Now let us see if we can not get at this matter in a manner in which it can be easily understood. While shelling peas or beans, we have noticed that in the short pods we find the largest and plumpest peas or beans. Those large peas look good, but there is not the tendency toward productiveness in a pod of two peas as there is with one that carries six or eight. The same is true with the heads of wheat and oats, the short heads carry the largest kernels. When we use the fanning mill to clean and screen seed the large kernels from the short heads are saved and sown. It is not any wonder that the varieties that are productive at first, run out.

If, instead of using only the fanning mill method of seed selection, we would

TO WHOM IT MAY CONCERN:

Those who read this and are not now regular subscribers of the Michigan Farmer we refer to page 463 in this issue. There you will find an offer of the Michigan Farmer on trial every week from the day the order is received until January 1, 1912 for only fifty cents. In addition a valuable premium is given free with each subscription.

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A FEW WORDS ABOUT THE MICHIGAN FARMER

Those who are now subscribers know the value of the Michigan Farmer, those who are not but should be will kindly look through this issue carefully. Notice that every department of agriculture is covered. Read the articles in each department and you will find them practical, intelligent and concise. Our editorial page will show you how fearlessly and energetically we help the farmer defend his rights. Our veterinary columns are for answering the questions asked by our subscribers. The Magazine section is an added feature which no other similar publication attempts to maintain; it costs us \$10,000 a year extra.

A NEW SERIAL STORY

In this issue we begin a new story entitled, "Once a Mormon", the story deals with a Mormon colony which at one time was located in the Beaver Islands in Lake Michigan. It is interesting and some of the situations intense. You will enjoy the entire story.

We have inserted in this issue a combination blank and envelope. Write your order, also premium wanted on the lines, then by wetting the mucilage where it appears and folding, an envelope is made which you can use. Don't delay your order as this offer expires on May 1.

THE MICHIGAN FARMER.

P. S.—DON'T FAIL TO READ PAGES 458 and 463.

select the peas and beans in the field, from stalks that carry the large number of pods, that have a large number of peas and beans in the pod, we could improve the productive tendencies of our peas and beans, and the result would be heavier crops and greater profits. The same is true with the wheat and oats. There is a great difference in the tendencies of the plants from different seeds. Some will only send up two or three stalks that will carry short heads, while others will send up several stalks, that will carry long heads, with a large number of kernels in each head. The variations are very apparent, and it is our privilege to avail ourselves of the opportunity to select and breed up the different kinds of grain we have on the farm.

The plan of seed selection suggested is not a new one. It is one which has been followed by some who have obtained excellent results. The so-called "pedigreed seeds," and "pedigreed plants," have been developed along the lines of careful selection, and careful breeding. While we need not expect that the methods of seed selection will be revolutionized in a short period of time, as most farmers are slow to adopt new plans, it ought to be apparent to every thoughtful man, that selecting seed from the best producing plants raised on the farm, and breeding along the line of productiveness, will bring much more satisfactory results, than we are getting under present methods.

Wayne Co.

N. A. CLAPP.

SEASON NOTES.

Alfalfa.

We may be a little slow in getting started with alfalfa, but it is better late than never and we are going to try some this spring. We have mixed a little alfalfa seed with the clover seed this spring, and intend to do so at each seeding so we will get the soil somewhat inoculated. The patch we intend to sow this spring is rather new ground, part of it having been broken up but a few seasons, its crops being potatoes, strawberries, wheat and clover. It is now a clover sod. We expect to put the cutaway on this and cut it up thoroughly as soon as the ground becomes more settled, then plow quite deeply, and harrow occasionally during April and early May, probably sowing about May 15, though this will depend upon weather conditions. We are not manuring or fertilizing the field, as I wish to keep it as free from weeds as possible, and it was given a heavy manuring while in strawberries, and the mulching was plowed under, so the soil is well filled with humus. It also had a good coat of wood ashes so I do not think lime will be needed. We have a small patch of sweet clover and I think we shall scatter soil from this patch over the field and harrow it in, and will get some alfalfa soil if we can, and possibly try the culture from the experiment station. I should like to be advised by those who are familiar with alfalfa culture if we will make any mistake in following this program.

Seeding Clover.

There are many opinions as to the best time and method of seeding clover, but I am convinced that as much depends upon the condition of the soil as upon the time or method. A poor soil may give a failure by any method, while one rich in humus and especially one that is top-dressed may secure a good stand by any method.

As for timothy I believe the fall is the best time to seed as spring seeded timothy does not have time to make much

of a growth if there is a stand of clover. I do not care for much timothy but think a little in hay improves its handling qualities, and prevents its lodging as badly, then if the clover kills out there is some timothy to fill in. If seeding is kept two years the second year will show considerable timothy, while the clover may go backward, but I think a clover sod should be plowed after the first crop to get the most benefit from it, and should be mowed a second year only in case of failure of seeding. From one pint to one quart of timothy per acre should be enough to produce a sufficient stand.

This season we seeded our clover with a "crank" seeder, taking two drill widths at a passage. This was done during the weather when the ground was freezing and thawing during the latter part of March and was well checked and cracked up. We sometimes sow a little later and harrow in with a spike-tooth, but the conditions were such that it did not appear to need the harrowing this year. We used about four quarts of June clover, with a sprinkling of alfalfa and on the lower ground a quart of alsike per acre. We have never failed to get a catch in this way, but it looks as if a part of our last season's seeding would be a failure from the drought last summer.

Manure Hauling.

Manure hauling goes on at odd times when it is too cold to work at pruning and such work. We have now mulched about 1,800 trees, and have a heavy coat on our strawberry ground, and have a good start on the corn ground. We still have quite a quantity to haul from town, and hope to get the corn ground pretty well covered. We use both the spreader and the low down wagon, the former for fine and heavy manure and short hauls, and the latter for light strawy manure and long hauls, as much larger loads can be taken on our wagon box rack. In mulching about the trees we could not use the spreader, so the wagon or bobs were used during most of the winter.

Calhoun Co. S. B. HARTMAN.

LILLIE FARMSTEAD NOTES.

It is now the first week in April and we are simply waiting for spring, burning at the rate of about half a ton of coal each week to keep the house warm. The oats ought to have been sown before this time; that is, comparing this year with last. But the older we get the more we find that we cannot compare one year with another. Each year is different. That is one of the things that the farmer has to contend with; the great variety in conditions which he must meet so that he cannot be governed by any set of rules and must use his own good judgment each year, and with each crop.

A Shortage of Hay.

We are feeling the effect at Lillie Farmstead now of the dry summer last year, because we have had to buy hay and also straw. One good rain in the middle of the summer last year would have prevented all this, but it didn't come. We had a good supply of ensilage and we have fed heavily on ensilage all winter long, but of course, you can't get through entirely on ensilage. Cows must have one feed of hay a day, anyway, and that is about what ours have been getting. We have been feeding one feed of hay and one feed of straw a day and two feeds of corn silage for roughage, and the shortage of hay has really drawn pretty heavily on our corn silage and I don't know as we will have as much as we ought to for summer feeding.

The Butter Market.

It is simply astonishing what a few months will bring forth with regard to conditions of the butter market. Now Elgin is quoted at 22½c, a year ago it was something like 32½c, and, of course, the farmer has to stand it. The city man who thinks the farmer is getting more out of his investment for his labor than he should ought to change places with the farmer earns every penny he gets, and that he has got to use pretty good judgment on a farm in order to make anything out of the proposition over and above living wages.

Sowing Clover Seed.

We finished our clover seeding of 55 acres on April 1st, and under what I call ideal conditions. The ground was frozen just enough so that a man wouldn't break through in tramping over it, and there was a light covering of snow so that he could see his tracks, didn't have to set stakes or anything of that sort, and this is what I call just ideal conditions for clover. If my memory serves

me right, I never yet got a poor catch of clover seed when we could sow it along the last of March or first of April and have a light snow on the ground.

Condition of Wheat.

Seemingly wheat has gone through the winter in very fair condition indeed, better than I expected. Of course, the early part of the winter it was covered with snow, but all of the latter part of the winter there has been no snow and considerable freezing, but the ground has been extremely dry and really I don't think the heaving and thawing has taken place to such a great extent as it has for many years. Not only that, but we haven't had any real severe cold weather this winter, and the wheat really looks promising. There is only just the top that is brown and dead, and underneath that is a nice green tinge which shows that there is life there. All it wants is nice warm weather and a good rain to give it a good start.

Young Alfalfa.

The other day I examined carefully the new seeding of alfalfa. I mean that which I sowed last year in oats that looked so bad last fall. I really never expected this seeding would last through the winter, but as near as I can judge, it is not dead. The crown seems to be green and full of life, but one thing I did not like when I took hold of the crown of a plant and pulled, I pulled the plant up by the roots and the root was two feet long. Now the question is, has the action of the frost broken the top roots and injured the plant in that way? Why should it pull out so easily?

Red Clover Seeding.

Last year's seeding of common red clover I have no fear for. I am confident that it will come through the winter in a safe condition and everything will be O. K. I have so much confidence in the red clover plant and have experienced so many different seasons with it that I feel sure in saying that our catch of red clover has stood the winter well.

The Amount of Work Ahead.

As one now looks over the amount of work which is to be done on the farm in the next few months, it hardly seems possible that it could be accomplished on time and properly done. There is an immense amount of work that is staring the farmer in the face between now and next fall. There is a chance for the farmer to use his head and his hands to splendid advantage, and he must not make a great many mistakes or he will cut down his profits amazingly. Let us see just what we have got to do at Lillie Farmstead this spring. We have 30 acres of ground to prepare and seed to oats and peas, 17 acres to put into oats alone, 45 acres to put into corn, 10 acres for sugar beets, five acres for potatoes, and about two acres for pickles. If the farmer could only figure as accurately with regard to his time as the manufacturer who works under cover, it would not be so much of a task, and there wouldn't be so much speculation about it. We have all of this work to do, and yet the weather conditions are something that we know nothing about. If the weather is favorable it is not so much work to get these crops in and have the work done properly but on the other hand, if conditions are not right and if it is a wet spring so that we cannot put in nearly all the time on the land, it hinders and the work drags, and it cannot be well done, and all these things are possibly in store for us in the future.

But it is a poor thing, and I realize it more and more, to worry about such things. We have all of this work to do, but we always have had it to do and it has always been done, and without any question it will be done this year. Some years we have been able to do it better than others, and each year we try to do it better than we did the year before. One can learn from experience, and if he profits by experience it will assist him in turning a good many short corners in the future.

WIREWORMS ON CLAY KNOLLS.

I have a field which contains several heavy clay knolls. Have planted corn on this field for two years and both years the wireworms have destroyed the stalks on the clay knolls. I would like to sow this field to oats this coming season. Would it be advisable, and if not what can I do to kill or destroy the wireworms? Wayne Co. SUBSCRIBER.

Soil usually becomes infested with wireworms after it has been occupied by an old timothy meadow or pasture for a considerable length of time. Wireworms find lodgement in the soil containing many

grass roots. They live and thrive on these grass roots, and generally stay in the soil until the most of these roots are thoroughly decayed, then they become extinct. Since it already has been two years since this field was in grass my judgment would be that there would not be enough wireworms left to do any serious damage to the oats, at least I would not expect to have any trouble this year from wireworms on this soil that had been exposed and cultivated for two years. There is very little that can be done to wireworms. If you use salt enough on the land to destroy the wireworms you will also destroy the crops. The best way is to make the ground rich with stable manure or fertilizer and stimulate the growth of the crop so that it will grow in spite of the wireworms.

The best way to get rid of wireworms is to never allow them to get into your soil, and this can largely be accomplished by growing clover instead of timothy in a short rotation of crops. Don't leave the land seeded down for any considerable length of time to timothy if you don't want wireworms.

COLON C. LILLIE.

NOT A GOOD PLAN TO PLANT POTATOES AFTER POTATOES.

I have an acre of ground that I wish to seed to alfalfa another year. It is in a good state of fertility. It was a clover sod with a fair coat of manure applied and then broken up and planted to potatoes. The potatoes were treated with a prepared powder for scab before planting, but at digging time there was about one-eighth of the crop scabby. Now I have given the piece a good coat of manure again, (rather coarse manure). Now what I would like to know is, if I plant potatoes on the same piece again and treat them for scab, would they be more likely to be affected with scab? I could plant it to corn and plant potatoes on another piece that had always been in pasture until last spring but have no manure to put on it. St. Joseph Co. W. W.

For more than one reason it is not a good plan to plant potatoes after potatoes. In the first place you ought to have a rotation of crops. In the second place if the bacteria which causes scab infests the soil your potatoes will be much more apt to be scabby. It is practically impossible to raise a field of potatoes without a particle of scab. Of course, we should not plant scabby potatoes, but there will always be some scab, consequently we want to treat the potatoes either with sulphur or formaldehyde to destroy the scab. But we never destroy it all. There is always some left. It seems to be practically impossible to destroy all the scab spores, although we can check its development and keep it fairly well under control. Now when you plant a field of potatoes even though there isn't a particle of this bacteria in the soil you will deposit some in the soil with your seed potatoes and that grows and multiplies and thrives, but if you have carefully treated your seed there will be only a very small percentage of potatoes that will be scabby, yet some of this scab bacteria will be left in the soil and if this field is planted to potatoes again next year there will be a greater loss from scabby potatoes. If you could select a soil without a particle of scab bacteria in it and you could select seed potatoes without a particle of scab bacteria then you might hope to grow potatoes without any scabs, but it is impossible and certainly impracticable to do anything of this sort and the best that we can do is to use the information which we have to keep scab in subjection. Consequently it would be better to sow the field that you had in potatoes last year to oats this year and plant your potatoes on the other field.

But you say you haven't manure to cover the other field. Even if you had stable manure it would not be the best practice to put it on now. If you are going to use stable manure on potato ground it ought to be put on in the fall before or at least some time during the winter. It ought not to be put on in the spring. It is apt to do more harm than good if it is put on late. None of us have enough stable manure to go around and the only question is, shall we stop feeding our crops when we run out of stable manure or shall we buy commercial fertilizer? I should say this would be a case where it would be absolutely proper to invest some money in commercial fertilizer, and I would buy a good brand of potato fertilizer and use from 500 to 1,000 lbs. per acre, and if it is properly put on it will prove a good investment.

COLON C. LILLIE.

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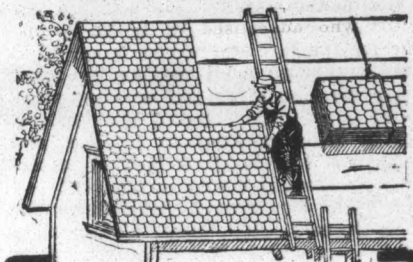
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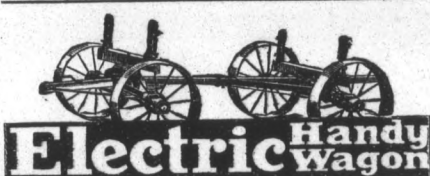


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WANTS TO BE SHOWED.

More About Fertilizer for Beans.

I want to thank you for the pains you took to answer my bean fertilizer questions in March 25th issue, even if you did roast me some around the edges. I'm going to ask you to bear with me a little further in this matter, even though I irritate you somewhat. You may lambaste me all you please if you will only "show me for sure" and clear up some items that are very foggy.

I'm just a common fool-farmer, Mr. Editor, like the vast majority of farmers in Michigan who have not had the advantage of a scientific agricultural education and who are striving to get down to the hard facts on which rest the basic principles of soil conservation. I've read everything I could find on the fertilizer question during the past two years and, as the Dutchman said, the more I learn the less I know about it. Fertilizer literature is surely a badly mixed up mess of contradictory statements of Tom, Dick and Harry. One authority says one thing and another the exact opposite. Tom says there's enough potash in the top six inches of soil to grow crops forever; Dick says it's there but not in available form, and Harry denies its existence and insists on applications of commercial potash. Dick says commercial nitrogen has never been used with profit on any field crop; Harry grows eloquent discussing profits produced by its use, and Tom takes the agnostic's position—don't know. Corner any of them and they tell me just as you do, e. g., "Experiment a little, Mr. Crum, and learn as others have learned."

When I found that 297 actual experiments with fertilizers had been made and properly check-platted, on bean soils, 92 of them right here in Michigan, I thought at last I was getting my felt-boots pretty well down on bed-rock facts. I was just fool enough yet to think those experiments meant something and were entitled to considerable consideration when compared with the bare say-so of T., D. or H. It seemed pretty plain to me that two pounds increase in yield of beans per acre at a cost of \$4.80 for commercial fertilizer might be a paying deal for the manufacturer of the dope, or the printer who advertised it, but a losing game for the farmer.

But you brush aside all this evidence as of little or no weight or value, saying: "Mr. Crum cites a large number of experiments to show that the heavy application of fertilizers to beans was unprofitable in Michigan. But it does not follow as a logical conclusion that a light application such as advised would be unprofitable."

You advise me to expend \$2.50 to \$5 per acre for 2:8:2 fertilizer and tell me to "experiment a little." Do you give me any assurance of an increase in yield sufficient to cover this outlay? You say: "Light dressing of fertilizer on beans has been found to give profitable results as many growers can testify by personal experience, as Mr. Cook has done."

Now, Mr. Editor, right here's where our trouble begins. If all the growers agreed with Mr. Cook there would be nothing further to say. But you know they don't. You know there are many other growers, equally intelligent, equally reliable, who testify as vigorously that the profit is out of pocket, and who assert that Mr. Cook gives the fertilizer credit for the extra labor he expends on his seed bed and the extra care he gives his crop. I can give you names of many men who think they have learned the same lesson taught by the 297 experiments cited. True, I find men like Mr. Cook, so positive regarding fertilizer virtues that they almost make you believe the stuff possesses miraculous power to increase bean yields for them. In like manner we meet those who praise the worst fake concoctions of the worst patent medicine faker, and who give him credit for curing all manner of ailments. Just so we find those who praise the wisdom of the doctor who saved their lives—not knowing that he prescribed nothing but sugar-coated bread pills.

But you will say this is not in point. Such people were not sick to begin with. Well, was Mr. Cook's soil sick to begin with? If so, was it the homeopathic dose of 2:8:2 that cured it, or the subsoil tonic he gave it, or the massaging of the land roller, or the turkish baths of the spring-tooth harrow? Are we real sure Mr. Cook is not in the class with the old woman who was cured by bread pills?

Please understand my position. If we are to ignore the results of the work of our experiment stations; if these 297 tests may be swept aside as being of no weight,

no value, no guide; then it seems to me it is up to you to substantiate your position with equally unimpeachable evidence. How many experiments with 2:8:2 property check-platted can you cite producing a net profit to the grower? If this formula gives a profit there should be unquestioned evidence of the fact aside from the say-so or guess of any man or publisher. If such evidence does not exist then what's the matter with trying to wake up our experiment station and organize a campaign for 500 or 1,000 experiments throughout the bean growing counties for the next few years until we shall have secured specific data of sufficient quantity to base a judgment upon, so that a farmer may know with reasonable certainty, (weather conditions excepted), what to expect from his investment in fertilizer?

If these stations have not been practical in the past, it might be necessary to find some way to pull the experimenters down to the earth and fasten them there while this work was going on.

My purpose in writing the above, Mr. Editor, is not to insinuate that you are wrong but to try to discover as far as possible just what we know for sure and certain about this matter and to get you to show me and thousands of other farmers who are hesitating at the forks of the road and undecided as to following you and Cook, who say it pays, or the other fellows who say it don't.

Montcalm Co. C. W. CRUM.

The true student is ever searching for the truth. Mr. Crum shows himself to be a true student of agriculture by his very pertinent inquiry, "does it pay?" If every farmer would ask himself this question with regard to his own practices or the methods which are recommended to him by others and search for the truth as diligently we would be much nearer the agricultural millennium. It is evident that Mr. Crum is approaching this question with an open mind, since he admits that "the more he has learned the less he knows about it." We believe this to be a common experience in all research work. The writer was once greatly impressed by hearing a prominent agricultural investigator say, when being pressed for a positive opinion on a much discussed subject, "it is better not to know too much than to know too much that isn't so." In this sense there was more behind the advice given Mr. Crum to "experiment a little for himself" than the implied roasting which he takes so good naturedly. The question which he is attempting to solve is a complex one, since so many factors enter into its correct solution. Mr. Crum has recognized that fact by likening the case of a soil which may need supplementary fertilization to the person who is ill from a real or fancied ailment and by the aid of a stimulated mind may be cured by the administration of bread pills, the extra care given the soil and crop by those who have used fertilizer with success, representing the mind cure in this case. In this connection he makes the pertinent inquiry as to whether Mr. Cook's soil was really sick. This inquiry is perhaps more pertinent than Mr. Crum realized, since if Mr. Cook's soil had been "sick" he could hardly have gotten profitable results from the use of fertilizer. Fertilizer is not a medicine—it is a food.

To illustrate this point let us compare the soil to a calf, and the crop grown to the growth the calf may make under varying conditions of feed and care. If two calves of like breeding are fed on skim-milk, which in one case is supplemented with a grain ration calculated to supply the deficiency of fat caused by the removal of the butter-fat from the milk and in the other case is not, the calf which is fed the well balanced ration will make much the better growth, other conditions being equal. But the other calf is not necessarily sick. He is simply poorly nourished, and the lack of proper nourishment is shown in his lack of growth and thrift. But if, on the other hand, the calf that was given the better ration had been sick, the results would have been different and, notwithstanding the better care and feed a correspondingly better growth would not have been secured. The same is true of soils. If a soil is in good mechanical condition, with a fairly plentiful supply of the essential plant foods, but lacking in their proper balance, then supplementary fertilization will pay, just as it pays to supplement the skim-milk with some feed which is high in its content of fat in the ration for the healthy calf. But if the soil is in a poor mechanical condition from a depletion of its humus or the absence of beneficial soil

bacteria which give it life and aid in the making available of its inert plant food, if it is in an acid condition which is unfavorable for the growth of the crop planted on it, if the cultural methods used are not well suited to the proper development of the crop or if the weather conditions are especially unfavorable, then beneficial results will not be at all certain from supplementary fertilization, just as good results would not follow the proper feeding of a sick calf.

But Mr. Crum will say this is more theorizing. What he wants is facts. He has not found them in the conflicting testimony which he mentions, yet he admits that some of the most successful farmers, including bean growers, are enthusiastic in their belief in the use of fertilizers, while others, and we venture the presumption that they are among the less successful, are just as certain that it does not pay to use them. Unfortunately we can do no more than to cite similar cases, for the very obvious reason that the average farmer who experiments along this line is most interested in his own problems, and does not preserve and publish the data upon which he bases his belief in the use of fertilizers for the benefit of others. Mr. Crum's suggestion that there is room for more extensive experimental work by our experiment station looking toward the solution of this problem is also a good one, for we have far too little accurate experimental data on this subject. Yet soils vary so greatly in their physical condition and seasons are so different that far more conclusive evidence can be gotten from our own soils, hence the wisdom of putting the question "does it pay" right up to our own soils for a correct answer in our individual case by "experimenting a little" as Mr. Crum was advised to do in a previous issue. Nor should we neglect to make all other conditions as favorable as possible for the crop grown if we are to make an experiment of this kind of the greatest possible value to us, for the more favorable the other conditions the more conclusive, and we believe as well the more satisfactory, the results of the experiment will be.

In this connection a word regarding the plant foods used in the experiments made will be pertinent. In this discussion a 2:8:2 formula has been repeatedly mentioned, not because it is necessarily the best formula, because we do not know what the best formula would be on any given soil. This is a matter for individual experimentation, and has an important bearing on the question, "does it pay?" We trust that Mr. Crum will continue his inquiries along this and other lines, and that when he reaches the positive yet elusive conclusions for which he is so diligently searching, he will not hide his light under a bushel, but let it shine for the benefit of his brother "fool farmers," including The Editors.

HOW TO FERTILIZE BEANS.

I grow beans as a cash crop and that is my hobby. I have fertilized beans for eight years, and what I know I have learned by hardheaded experience, and I have learned there are only two ways to use fertilizer on beans. Either sow 200 pounds per acre on each side of bean row, that is, to use a fertilizer grain drill (11 hoe) and let six tubes run with fertilizer and get 200 pounds per acre. Don't let the fertilizer run in with the beans, as there is too much danger of burning the beans as they are very meaty and tender. Or, sow 300 pounds of fertilizer broadcast and harrow it in and then plant or drill the seed.

Now I am going to sow 50 acres of beans this spring. Some of the ground is very poor, and on the poorest I will sow 300 pounds of fertilizer broadcast. That is, I will sow it with drill and work ground in good shape, and then when I sow my beans will sow 200 pounds more on each side of beans, that making 500 pounds per acre on poorest ground, and on good ground 200 pounds.

I have used a good many brands of fertilizer and different kinds and analyses, and all my tests show that 3:8:6 analysis beats them all, while 2:8:5 is the next best. Some authorities claim that you don't need any ammonia for beans. Now, whether they have experienced that or whether it is a theory, is a question. My experience in growing beans is to have a fertilizer with a good percentage of ammonia, phosphoric acid and potash, although I am told that in some localities farmers get the best results from using complete fertilizers analyzing 2½:8:1½ or 3:9:2. My experience has been, don't sow fertilizer with beans, for the risk is too

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MADE FOR WORK AND WEAR YET SO EASY IN ACTION A GIRL OR BOY OF SIXTEEN CAN OPERATE IT



KRAUS PIVOT AXLE SULKY CULTIVATOR

No pushing or pulling the shovels from one side to the other. Just a touch of the foot and the wheels and shovels move easily and quickly to right or left. No stopping the machine to regulate the width between gangs or the depth of the shovels. **Uneven Land, Crooked Rows and Hillsides as Easily Cultivated as Level Ground.** Made in high and low wheel and KRAUS pivot gang. Built entirely of steel and malleable iron. Every possible adjustment. Light Draft. Perfect balance. Choice of 26 different equipments gives you just the one you need for your work. Also the Dipper Hammock, Seat and the Carpe Walker. Don't accept a substitute. If your dealer does not handle the KRAUS write us for full descriptive catalogue. **KRAUS CULTIVATOR CO., DEPT. 12 AKRON, OHIO**

20th CENTURY HOE



EVERYBODY WANTS ONE. Sells at Sight! One man does the work of two. **AGENTS WANTED** Write for information and territory **20th Century Hoe Co.** Grand Rapids Mich.

PATENT your invention. Free preliminary search. Booklet free. **MILBURN STEVENS & CO.,** Estab. 1861. 601 F. St., Washington; 576 Monmouth Bldg. Chicago

WHEN writing to advertisers just say "Saw your ad. in the Michigan Farmer."

great and you can't feed them enough that way.

I wish to say that last season on a soil that wouldn't grow ten bushels of beans per acre, by using 500 pounds of fertilizer (300 pounds broadcasted and 200 pounds on each side of the rows), I grew 28 bushels per acre. Let me say to you, don't be satisfied with 10 or 11 bushels per acre. If your soil isn't too heavy, if you get it rich enough, you can grow 30 to 40 bushels per acre. I am speaking about pea beans, for they are the kind to grow. Sow from three pecks to one bushel per acre, according to size of beans. Where they have been grown on strong land beans will be a little larger, so will need more seed.

Sanilac Co. J. H. LINCK.

THE AUTO ON THE FARM.

I am sending you my experience with the auto on the farm. I have owned a number of horses, not many of them without some fault, either in driving or working. A good work horse can not be depended on for a road horse, nor is a good driver much account for working on a farm. Most of the good drivers are too nervous, and fret when put to hard work. In the spring of 1909 I sold every horse I had that was fitted for driving, and when I wanted to buy one I found the price was too high, and I finally bought a second-hand auto. It was a runabout. The tires were worn and they made me trouble. The machine was worn and that gave me more trouble. I ran this machine during the season of 1909 and in the spring of 1910 I sold it, the experience I had making me think that if I ever bought another auto it would be a new one.

When the roads began to get good again I began to get the fever for another auto. I drove a work horse for a time, but that was too slow. I then bought a driver, but did not like it and sold it again after a couple of weeks. I found that a horse that suited me was hard to find and that the price ran from \$200 to \$250, so I gave it up. A little later I bought an automobile of the runabout type and rode home in it from the factory in less than two hours without a stop. There were no wet hairs on this horse when we arrived home. It stood without a tie strap and did not need a feed of oats or a pail of water, yet we had made 30 miles in less than two hours. This machine has been run ever since without a stop for adjustment to exceed five minutes; never had a flat tire; never refused to go up the steepest hill or through the deepest mud without a stop. My expense for maintaining this machine has been small. Outside of gasoline and cylinder oil, the total cost has been \$1.36 for batteries.

One thing I like about the automobile is that it has never refused to go where I wanted it to go. I have had some horses that wanted their own way, but not so with the automobile. One don't have to carry a whip to make it pass another rig or another machine. All that is required is to keep a level head to avoid accidents, which cannot always be prevented with horses. Then when not in use it does not lower the oat bin or need to be cared for night and morning. Just keep some good cylinder oil in the oiler, keep the dope cups filled with grease and don't forget the gasoline, and it is ready for service at any time. A horse may stop breathing, and all you have left is the hide; but if the auto stops breathing there is a remedy, and it eats only when in use.

Macomb Co. J. L.

FARM EXPORTS FALLING OFF.

According to figures recently prepared by the Bureau of Statistics, there was considerable decrease in the value of our farm exports during the eight months of the present fiscal year, as compared with the similar eight-month period of last fiscal year. Of breadstuffs, corn, wheat, oats, etc., \$76,194,043 worth was exported in the last eight months, against \$95,853,304 worth in similar eight months of last year. \$76,182,732 worth of meat and dairy products were exported this year, against \$76,892,250 last year, while in cattle, hogs and sheep, we exported only \$7,014,348 worth against \$10,492,197 in the eight months of last year ending with February.

Pick up loose nails, pull them, or bend them over if they are found in boards. Keep the garden rake and scythe where they cannot be knocked down, and the children or the horses or other stock injured by them.

Tires 10% Oversize

25% More Mileage—No Extra Cost

If you buy tires for an automobile, let us explain how to cut the cost half—as tens of thousands are doing.

The tires which we tell of—Good-year No-Rim-Cut tires—are now the sensation of motordom.

Last year our tire sales trebled—jumped to \$8,500,000—because we controlled these tires.

This year 64 leading motor car makers have contracted for them. They outsell our clincher tires six to one.

And these are the reasons:

No Overloading

About 25% of the average tire cost is due to overloading.

The tire size is adapted to the car when stripped. But when you add extras—top, glass front, gas tank, extra tire, etc.—the tires have too much weight. And you overload them otherwise frequently.

The result is a blow-out.

Goodyear No-Rim-Cut tires, to take care of these extras, are made 10% oversize. The rim flanges flare outward when you use this tire, so this extra size is possible.

We supply this extra size at no extra cost. That means 10% more air, and air carries the load. It means 10% greater carrying capacity. It means, with the average car, 25% additional mileage per tire.

You get the same result as though you paid for a 10% larger tire.

No Rim-Cutting

Then these patented tires end the damage of rim-cutting. Other tires are ruined when you run them flat. Rim-cutting, on the average, adds one-fourth to one's tire bills.

Note the picture below.

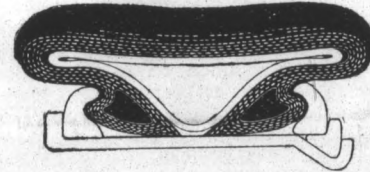


The No-Rim-Cut Tire

This tire is fitted on a Universal rim—the standard rim now adopted by nearly all motor car makers. But the tire fits any rim.

The removable rim flanges are simply set to turn outward, instead of inward—as with the old-type tires.

The tire, when deflated, comes against a rounded edge. You can see why rim-cutting never occurs.



Ordinary Clincher Tire

With ordinary tires these removable rim flanges are set to curve

inward, to grasp hold of the hooks in the tire. That's how the tire is held on.

Note how those thin edges dig into the tire. That is what ruins a tire—in a moment—when puncture makes it flat.

How We Avoid It

In the base of our tire we vulcanize 126 braided wires. That makes the tire base unstretchable. It can't be stretched over the rim flange—can't be forced off—until you remove the flange.

When this tire is inflated the braided wires contract. The tire is then held to the rim by a pressure of 134 pounds to the inch.

That's why the hooks are unnecessary. That's why the rim flanges don't need to dig into the tire.

This feature is controlled by our patents. And there is no other feature ever invented which makes a practical tire of this sort.

Tire Book Free

We have sold enough of these tires to equip over 100,000 cars. The demand has become overwhelming. You should know the reasons if you own a car.

They are told and pictured in our Tire Book in a clear, convincing way. Let us mail it to you. Write us a postal for it.

You will insist on tires which cut upkeep cost half when you know the facts about them.



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Branches and Agencies in All the Principal Cities We Make All Sorts of Rubber Tires

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have a world wide reputation for high quality and our prices have made them famous. THIRTY-EIGHT YEARS' experience selling to the consumer means success. We ship for examination, guaranteeing safe delivery, satisfaction and to save you money.



Catalog shows all styles of pleasure vehicles and harness, pony vehicles and harness, spring wagons, delivery wagons, farm wagons, and harness.

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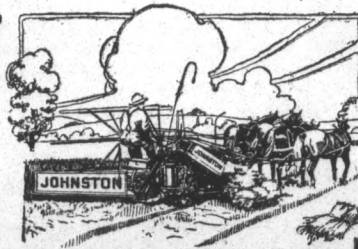
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LIVE STOCK

MANAGEMENT OF THE FARM WORK HORSES.

It requires the mind of a master farmer to provide steady, profitable work for his farm horses, even through the busy season. Successful crop growing depends largely upon the correct management of work horses. They furnish the great productive force which enables us to circumvent nature and coax abundant crops from reluctant soils.

To secure the best results from both men and horses the whole farm must be managed on a far-seeing plan. Horses should have steady, profitable work every day when the weather is favorable. There is no excuse for work horses to stand idle on a week-day. Horses need even, steady work to maintain their health. More horses die from azoturia following a few days of absolute idleness than from steady work. Unfavorable weather will cause some loss of time, but there are always odd bits of work apart from crops, that can be done as well a few days ahead of time as when they demand our immediate attention. Much work is accomplished and there is less rush and expense if plans are made to do everything possible a few days or weeks ahead of time instead of a few days behind time as is usually the case during the busy season. When this policy is enforced there is less temptation to overcrowd the horses beyond their strength to make up for the lost time. Every day horses are crowded beyond their strength is

the wind and weather is cruel, but spring clipping after the weather has become settled is very beneficial, especially if the hair is long and thick. It makes the horses far more comfortable, and it is much easier to keep them clean, which is a very important item to a man during the rush of spring work when his time is limited. Horses that are clipped should be kept moving and blanketed every time they are left standing, or taken out to work during stormy days.

On many farms more horses are kept than are used for work during the winter, and consequently they get but little grooming during the time they are in the stable. Their coats become very thick and long, when put to work they sweat profusely, and it is difficult to keep them dry and clean. Such horses had best be clipped. It will require less feed to keep them in condition, and they will be much easier to keep clean. We all know how disagreeable it would be for us to do a hard spring's work with our winter clothes on. The work horse with his heavy coat is in precisely the same condition. It is a loss of time, money and horse flesh to have drivers stopping to rest over heated teams during the rush of the spring work. The removal of dirt and the stimulation of the skin goes far toward preventing harness sores. Next to snug, perfect-fitting collars and well-adjusted harness, spring clipping is most essential.

The farm teams should be evenly matched as to size, strength and disposition, for it must be borne in mind that the two, three or four-horse team is no stronger than its weakest member. Much of the horsepower on many farms is wasted through the driver's not adjust-



Ingomar 30047, a Percheron Stallion of Useful Type, Owned by M. A. Bray, of Ingham County.

dearly paid for in loss of condition and broken spirits, if not in actual sickness.

A pair of well matched draft mares is the most profitable farm team. They will perform almost a full season's work and raise as good a pair of colts as mares that are supported in idleness the year around. Except in a few instances draft horse breeding has never been found profitable when large numbers of mares have been kept exclusively for breeding purposes. The man who plans his work thoughtfully can perform a good season's work on the farm with a team of brood mares and secure this double income.

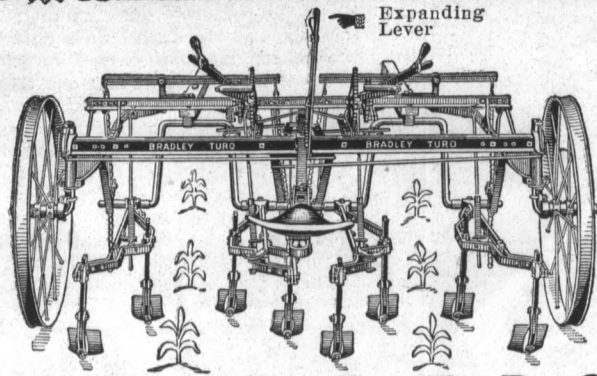
Good feeding is an integral part of success in the economical management of farm work horses. It is the healthy, well fed team that exhibits the greatest efficiency and endurance in the collar. To be well-fed the horses should not be stuffed on heavy grain feeds for a few days and then confined to hay alone as the activities of the farm are partially completed. It is regular, even feeding that makes strong muscles and furnishes energy on which to perform hard work. Sound, wholesome grain and sweet, well-cured hay supply the horses with suitable material for developing energy and power. Avoid sudden changes in the kinds of food and the times of feeding. Early pasture is detrimental to the general health and thrift of horses that are being worked hard on the farm. Hay is better, except for an occasional variety, which may be supplied by mowing an armful of grass and feeding it to them in the stable, but this should not be practiced until after grass has become hardened by the midsummer sun.

Clipping work horses during the winter and allowing them to stand exposed to

ing the hitch to accommodate the several horses. If one horse is able to do more work than one of his mates, make him do it. The whiffletrees can be adjusted to divide the load, and economy demands that each of the team do a full day's work according to his strength. However, the ease with which this can be done is no reasonable excuse for keeping a miscellaneous bunch of farm work horses. It is hard to overestimate the stimulus given to the business of the farm by well-matched teams. Good men are attracted to the farm where the work is done with high-class farm horses.

Good, strong harness and durable implements increase the efficiency of the work horse. The horse that has a well-fitted and properly adjusted harness can do more and better work than one that is compelled to wear a poorly-fitted, dilapidated harness to annoy and irritate him every step he takes while at work. Strong and durable implements reduce breakage to a minimum and avoid delays required to make repairs during the busy season. Fly nets are necessary during the summer if the horses hold their flesh and the drivers their temper. They are not an expensive luxury and will last a long time if well-cared for. Large implements save the time of men and horses. There are many times when one man can handle three or four horses to profitable advantage and leave an extra hand to do the work that requires a man alone. With several horses under one man's control, there is more opportunity to keep up with the other branches of farm activities without allowing the work horses to stand idle in the barn. The cost of suitable farm horses and furnishing them with adequate food makes it imperative that

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The David Bradley Tu-Ro Cultivator

The only successful two-row cultivator made. Built to withstand the severest strain and hardest usage. Saves horse flesh, time and labor. One man or boy and three horses do the work of two single row machines.

The Tu-Ro embodies the famous David Bradley patented pivot axle seat bar dodging principle. The instantaneous dodge saves almost every out of line hill, often paying for the tool in one season. Operator has a clear view of both rows at all times, with both hands free to drive.

Pivot Axles and Seat Bar Dodging Lever: easiest, quickest, widest dodge. Operator shifts gangs to right or left by light pressure with either foot and swaying his body in pivoted seat, without changing gait or direction of team. The only two-row cultivator suitable for hillside work.

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Depth Regulation Lever for each gang and **Combined Gang Raising and Balancing Lever** that lifts all gangs at end of row without disturbing their depth adjustment.

Short Hitch and Direct Draft: easy on horses. Draft helps to lift gangs, also keeps shovels in ground.

Wheels, 42 inches high, wide tires, staggered spokes. Bearings dustproof and oiltight.

Gangs of every style for all kinds of soils: pin break, spring trip and surface or gopher blade, all interchangeable. One or more styles can be used on the same cultivator.

Materials, only the best of steel and malleable iron throughout; money can't make it better.

What Tu-Ro Users Say.

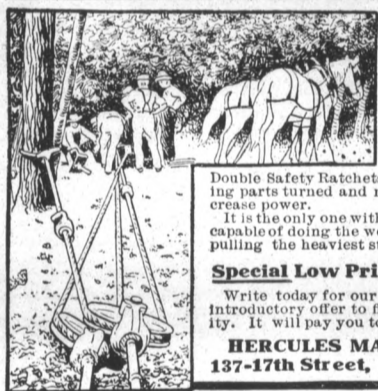
R. F. D. No. 4, Box 82, Blissfield, Mich. Sears, Roebuck and Co., Chicago, Ill. Gentlemen:—I want to say that the David Bradley Tu-Ro Cultivator I bought of you is the best put up and most satisfactory cultivator I ever owned. No more single row cultivators for me. I hitched three horses to the Tu-Ro, one unbroken colt, and started in to work. My boy had its operation learned in no time, and the work he did with the machine was an eye opener to my neighbors. At least twenty-five farmers have been over to see my Tu-Ro work and I think nearly every one of them will get one, too. If anyone wants to know how good a machine your Tu-Ro is, tell them to write to me. Yours truly, A. J. SELL.

R. F. D. No. 4, Box 41, Marion, Iowa. Sears, Roebuck and Co., Chicago, Ill. Gentlemen:—I am well pleased with my David Bradley Tu-Ro Cultivator. I have plowed corn crossways, used it in sod, cornstalks, and for fall plowing. I can guide it with one foot and dodge every crooked hill. A neighbor saw it work and said: "That suits me," and then went over to another man plowing with a single row and told him I was doing better work. I plowed 8 acres the first half day, the first time over and it did not cover up any more than a single row. I also like it because it is close to the ground and I can always see both rows. I am advising all my neighbors to get a Tu-Ro. Yours truly, LEWIS WEIS.

Our big General Catalog shows pictures, complete description and prices of the Tu-Ro Cultivator; also David Bradley plows, harrows, planters, single row cultivators, manure spreaders, etc., the farm tools backed by eighty years of knowing how. If you have not a copy, send today for our Book of David Bradley Farm Implements.

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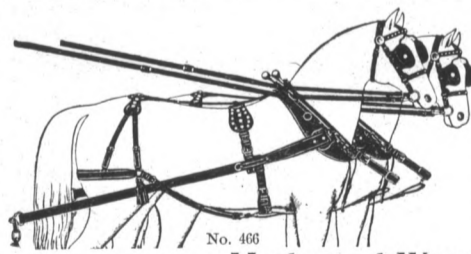
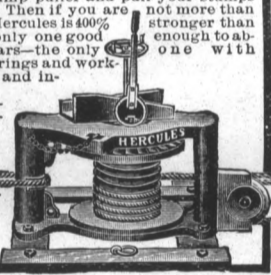
Send for our Hercules stump puller and pull your stumps for 30 days at our expense. Then if you are not more than satisfied send it back. The Hercules is 400% stronger than any other puller; it is the only one good enough to absolutely guarantee for 3 years—the only one with double safety ratchets—the only one with all bearings and working parts turned and machines to reduce friction and increase power.

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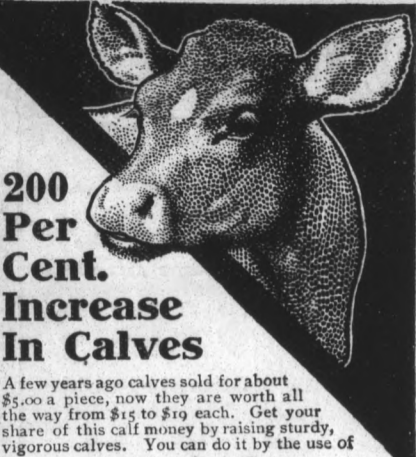
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OUR LAST IMPORTATION OF
Percheron Stallions and Mares

We cordially invite everybody to come and visit our stables and learn our method of doing business. We can sell you a first-class stallion or mare for less money than any importer in America. Terms to suit purchasers.

Niles is ninety miles from Chicago on the Michigan Central.

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200 Per Cent. Increase In Calves

A few years ago calves sold for about \$5.00 a piece, now they are worth all the way from \$15 to \$30 each. Get your share of this calf money by raising sturdy, vigorous calves. You can do it by the use of Pratts Animal Regulator... Pratts Animal Regulator pays for itself in feed economy... Guaranteed or Money Back... Pratts Healing Ointment cures galls.

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by my simple method. I can teach you to break any colt in 8 hours thru my wonderful mail system, or break your horse of any bad habits, such as balking, kicking, shying, being afraid of automobiles; in fact, any habit can be cured by my method. Instructions complete and simple; mastered in a short time with little study. \$1,200 to \$3,000 a Year At Home or Traveling... Prof. Jesse Beery, Box 42, Pleasant Hill, Ohio

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FEEDERS' PROBLEMS.

Supplementary Feed for the Sheep. This is a topic upon which a great deal has been written, but it is a most important topic for every farmer who owns sheep to consider at this time, since any plans looking toward the provision of supplementary feed for the flock during the coming season must be made at once. There is every prospect that the present season will be one of general shortage of good pasture, owing to the unusually dry season last year, which caused the failure of the clover seeding in many cases and the too close grazing of pastures and meadows during the fall. This condition of affairs makes it all the more essential that some provision should be made for supplementary feed for the sheep during the summer season, when the grass pastures are unproductive.

One of the most widely known supplementary feeds for the sheep is dwarf Essex rape. This may be used in a variety of ways, such as with the oats to be pastured after harvest; as a nurse crop with which to seed to clover, the rape to be pastured off in midsummer when the pasture is most needed; as a catch crop after the hay or grain is cut, or as a catch crop to be sown in the corn at the last cultivation to be utilized for late fall pasture. It is a profitable forage crop to grow in any way which seems best fitted to the local conditions which must be met upon any farm, and is well worthy of a trial by every sheep owner. While rape is sometimes the cause of hoven or bloat, when pastured in an injudicious manner, there will be little trouble of this kind if intelligently managed. The sheep should be first turned on it in the middle of a warm day, when they have been well filled on other feed, and removed after a short time. This should be repeated for a few days, when they may be safely left in the field. It is better, however, to give them access to a grass pasture at the time they are running on rape if this is practicable, since there will be less danger and trouble from scouring, which will be the result with some individuals where rape makes up the entire diet. However, it is a noticeable fact that where a sheep farmer has once tried rape as a supplementary forage crop for summer feeding, he generally continues to grow it each season, in amounts suited to his probable need of a supplementary forage for the flock.

In England turnips are extensively grown for the same purpose, and some of the prominent sheep breeders of Canada are now using turnips extensively for this purpose, claiming them to be superior to rape for several reasons. One of these reasons is that there is less trouble with scouring where sheep are pastured exclusively upon turnips than where rape is the sole green feed. Then, under favorable weather conditions, turnips will make a crop of roots where they are not fed off too closely, and these roots come in handy for late forage, as the sheep will make good use of them for this purpose. The writer talked with one prominent Canadian breeder who exhibited at the last state fair who was enthusiastic in his praise of turnips as a supplementary forage crop for the ewes, and knows of one Michigan breeder who tried them successfully last year and who will plant a larger area for this purpose the coming season. There seems to be no doubt that it would be a paying proposition for more sheep farmers to try out the merits of this common root crop for supplementary sheep forage, both sown alone and in the corn at the last cultivation as a catch crop. There are also other crops which merit

a trial at our hands for this purpose, such as soy beans or the smaller varieties of cow peas, which may be grown as a crop to be plowed down for the improvement of worn soils and at the same time provide excellent forage for the sheep at a time of the year when it will prove a very welcome resource for the flock owner.

Then last, but not least, we would mention the common Canadian field pea, which is utilized so successfully for fattening lambs in Colorado. If an area of peas or peas and oats is sown this crop can be utilized as a summer forage crop if needed for that purpose, or better yet if not so needed may be used as a crop to fatten the lambs on in the fall and the lambs can be followed by hogs, and the full value of the crop secured without any expense of harvesting, while the residue of vegetable matter from the vines and the droppings of the animals which will be distributed over the field, together with the nitrogen gathered by the plants and stored in the roots, will materially benefit the soil when plowed down the following year. This may appear like a slovenly method of farming to many, yet there is need of more of this kind of farming upon many Michigan farms, where the fertility of the soil has been depleted by constant cropping, and the removal of the fertility from the soil by the removal of the crops from the land, never to be returned in the form of manure or supplementary fertilization. Then, while Michigan has attained considerable fame as a lamb feeding state, it would appear that different methods must be practiced if this industry is to remain a stable one. Feeder lambs are too high in the fall to make a profit certain, as many Michigan feeders can testify this year. This means that we must grow more of our own feeders on the farms where they are to be fed. If we are to produce our own lambs we can hardly afford to produce the little fellows of the range type, and as big lambs are discriminated against in the markets late in the season, there would seem to be better chances for a good profit by crowding the early native lambs on good pasture in midsummer and finishing them off on cheap feed in the fall, and marketing them before the stabling season. At least this plan is well worthy of a trial on Michigan farms, where, if present indications are accepted, it would seem that early lambs for the spring trade or spring lambs for the fall trade, placed on the market in good condition which is secured on cheap, home-grown feed would afford the best profits for their producers in future years.

Supplementary Feed for the Pigs. When the spring pigs are well started by liberal feeding through their dams, it will pay to give them some supplementary feed in a pen or small yard to which the sows do not have access. If some choice feed is given them in a trough where they cannot be disturbed by the sows, where they are fed middlings at first, with a little corn meal and skim-milk if it is available, the pigs will make a rapid growth, and will never notice the weaning period. The average litter is weaned too early, and where supplementary feeding has not been practiced, they often become stunted in growth at this time, which is a loss that can never be wholly regained. But if the pigs are given supplementary feed in a judicious manner, and are allowed to run with the sow until at least eight weeks old, no such setback will be experienced when they are weaned, and their growth will be uninterrupted, which is most important if it is desired to hasten their development to good market condition at as early an age as possible. And no matter at what age it is the intention to market the pigs, it will pay to keep them growing all the time. The gains made on the young pigs are the cheapest gains, and unless they are kept growing to the limit of their capacity there is bound to be a loss due to the longer time in which a portion of the ration fed must go for the maintenance of the bodily functions, hence it will pay well to feed them intelligently from the start, which means even before they are weaned from their dams.

Wash and oil the collars occasionally. Two minutes' work at the end of the day is sufficient to keep the surface of a collar clean, soft and pliable. A damp sponge and a cake of harness soap kept in the currycomb box are the only equipment needed.

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THE DAIRY

CONDUCTED BY COLON C. LILLIE.

DAIRY BY-PRODUCTS.

(Address delivered by the editor of this department before the annual meeting of the Michigan State Dairymen's Association at Bay City.)

Dairy by-products may be considered under three heads: First, the by-products of the dairyman or dairy farm. Second, the by-products of the creamery. Third, the by-products of the cheese factory.

Skim-Milk.

On the Michigan dairy farm today the greatest by-product of the dairy is skim-milk. About 10 or 15 years ago in most localities the milk was hauled to the creamery and skimmed there and the skim-milk sent back. Today the majority of the milk is skimmed upon the farm and the cream is sent to the creamery, and I think the majority of farmers will agree that the skim-milk produced upon the farm is of greater value than that produced in the creamery. He can feed it with less waste. He is sure that when he skims his milk upon his own farm that he is not spreading disease, nor having disease introduced into his own herd from the skim-milk from diseased herds. The practice of using the hand separator upon the farm in my judgment has done much to prevent the spreading of contagious diseases.

Various estimates have been placed upon the value of skim-milk. One man will tell you that it is worth 20 cents per hundred, another man will tell you that it is worth 30 cents, and still others have put the feeding value of skim-milk as high as 50 cents per hundred pounds. Really, the value of skim-milk depends upon the value of the animal to which it is fed and also upon the method of feeding. If one is growing registered calves or pure-bred pigs he can figure that skim-milk is very valuable if he figures that the extra price which he gets for registered stock is due to skim-milk. This, however, is not a reasonable way of figuring. The value of skim-milk should be determined by comparing it with other foods as a basis. Skim-milk is not a balanced ration. The nutritive ratio is narrow, or the proportion of protein to carbohydrates is as one to two, which is a narrower ration than is needed even for young and growing animals, consequently in order to get the greatest feeding value out of skim-milk it must be fed with some other food that is richer in carbohydrates than the skim-milk, and here is where the average farmer makes a great mistake. He does not take pains enough to mix other foods with skim-milk.

Skim-Milk for Pigs.

If you feed pigs upon skim-milk alone you will not get satisfactory results. If you will feed skim-milk in connection with corn you can get better results than you can if you feed either one alone, simply because both of them fed alone are an unbalanced food, and when mixed together you can make a balanced food. Science and practice both show that skim-milk should be fed growing fattening pigs in about the proportion of 1 lb. of corn to 3 lbs. of skim-milk. In this way we get very nearly a balanced ration and get the largest per cent of assimilation from the two foods.

Skim-milk for Calves.

When we feed skim-milk to calves of course we cannot feed corn as well as we can when it is fed to pigs because the corn does not mix in the ration for the calves as well, so some other food must be selected which will take the place of the corn. Experiments have been made with a great many different foods, but pure flaxseed meal is the ideal food to feed in connection with skim-milk. This food contains about 30 per cent of fat and when a small amount of it is mixed with the skim-milk it balances up the ration by taking the place of the fat originally in the milk and a question arises, how much flaxseed ought to be fed to a calf in connection with the skim-milk. It doesn't take so very much of it. Better results will be obtained if the flaxseed is cooked and made into gruel. A pint of flaxseed meal will make two gallons of gruel and a gill or more of the gruel is a sufficient amount to put into the milk for each calf at a feed. When fed in connection with flaxseed meal gruel, skim-milk makes a balanced ration and is a most excellent and valuable food for young growing calves, but on the other hand, if it is fed alone it is a poor

food and makes unthrifty calves. If fed alone for any considerable length of time and fed liberally indigestion is almost sure to be the result.

By-products of the Creamery.

The by-products of the creamery are buttermilk and sometimes skim-milk, but it is rare now that the average creamery has any skim-milk to dispose of as a by-product. The farmers are beginning to think so much of skim-milk that it is returned to the farms. The creamery, however, has a by-product in the form of buttermilk which is valuable if it can be properly disposed of. The feeding value of buttermilk is almost identical with that of skim-milk. It is worth all the way from 20 cents per hundred lbs. to 50 cents per hundred lbs., depending upon what food it is fed with and to what class of animals it is fed. With many creameries the buttermilk is almost an entire loss. In many instances it is sold to some nearby farmer for a mere pittance, a few cents a hundred usually. I have known instances where buttermilk was given to a person if he would only remove it from the creamery and get it out of the way. Other instances are on record where creameries get five and 10 cents per hundred lbs., not one-half of its feeding value.

Other creameries have gone into the hog feeding business for the purpose of disposing of their buttermilk. By properly mixing corn with the buttermilk it is equal to skim-milk and its full feeding value which is at least 20 cents per hundred lbs. can be obtained.

Where the creamery is located in a city or near a large town, with a little effort on the part of the creamery management, a good trade can be worked up in buttermilk in the city for human food. It is, indeed, a valuable food, not only from the standpoint of the food nutriment which it contains, but buttermilk is a valuable food when it is considered from a health standpoint. The modern creamery today pasteurizes the cream, destroying all germs, and then a pure culture starter is introduced to ripen the cream, consequently the buttermilk contains the pure culture or lactic acid bacteria. The best medical authorities advise buttermilk as a diet for a great many people. The introduction into the elementary canal of lactic acid bacteria is beneficial to health because, being introduced in large quantities these bacteria overcome the bacteria that naturally inhabit the elementary canal and which are detrimental to health, and the growing habit of consuming buttermilk from this standpoint is one to be commended and encouraged.

It seems to me that a creamery located within a marketable distance of a good-sized town ought to go to some considerable expense to place this by-product of buttermilk upon the market in a satisfactory and sanitary condition. I believe buttermilk should be bottled and sold just the same as sweet milk. I don't believe it ought to be handled in an open can in bulk any more than sweet milk should, and it seems to me that if people understood about these things they would be willing to pay a better price for bottled buttermilk than they would for buttermilk sold in bulk. I believe an excellent trade can be worked up in any town with this product if it is only placed before the consumer in the proper light. It might take some advertising in order to make the people understand its true value but just as soon as they do they will be willing to pay a better price for the better product.

The Iowa Experiment Station has brought out a new buttermilk product which they call "Lacto." It is simply buttermilk with added cream, flavoring, etc., and frozen and served after the manner of ice cream.

Cottage Cheese.

Where a creamery has skim-milk as a by-product large amounts of it can be disposed of if it is made into cottage cheese, and cottage cheese can be made from buttermilk as well as skim-milk. Indeed, some people prefer cottage cheese made from buttermilk to that made from skim-milk. It is finer grained and is certainly more sanitary for the cream being pasteurized before churning and having a pure culture added, should be more free from undesirable bacteria. When people come to fully understand the food value of cottage cheese and its health producing properties much more of it will be consumed in place of higher priced animal products. The consumption of cottage cheese made from buttermilk will help a man's pocketbook and his stomach at the same time.

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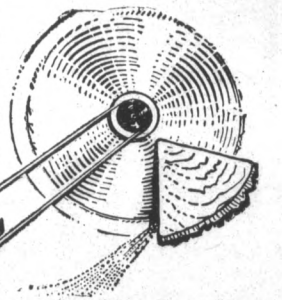


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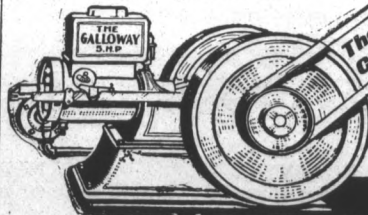
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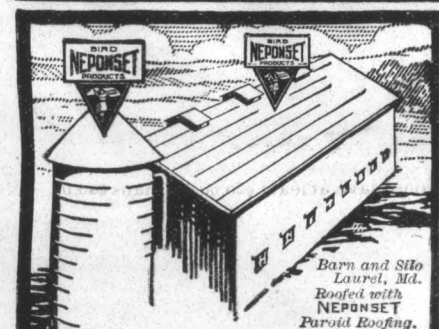
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they can be frozen after flavoring to suit the taste, and made into a most delicious ice.

By-products of the Cheese Factory.

The by-product of the cheese factory is whey. Some people consider whey of little value as a food product for any kind of animals but in this they are mistaken. Whey has quite a considerable food value. Indeed, experiments show that whey is worth at least one-half as much as skim-milk when fed to growing pigs or to growing calves. I will admit that a great many people do not get very much value out of whey but it is because they do not feed it as they ought to. This question of balancing a food seems to be one that is not readily understood by everybody and yet it is a very simple matter. Now, while in the case of skim-milk you remove the fat and leave the nitrogenous part of the product, making a food which has a narrow nutritive ratio, the result with whey is exactly the reverse, you extract from the milk the nitrogenous part but when cheese is made this part is used and some of the fat is left, leaving a food that has a wide nutritive ratio, that is, it has carbohydrates in excess of the protein, and is therefore, an unbalanced food, but unbalanced from a different standpoint. It contains more carbohydrates than it should contain in proportion to the protein, while skim-milk contains more protein than it should in proportion to the carbohydrates. Now, with either one of these products, in order to get the greatest feeding value out of it, other foods must be supplemented. In the case of skim-milk you want to feed a food rich in fat, but with whey which already contains an excess of carbohydrates we should feed a food that is rich in protein, consequently a food like oil meal would be most excellent to feed in connection with whey. Of course, oil meal is a product taken from flaxseed but in this the flaxseed has been ground and the fat taken out to make the commercial oil of commerce and the residue of that portion of the flaxseed which is rich in protein, remains. Now this would not be the kind of food at all to feed in connection with skim-milk, but is just the sort of food to feed in connection with whey to make a balanced ration. When whey is fed in connection with a food like this it is a valuable food and well worth saving. While skim-milk and corn makes a most excellent balanced ration for pigs, whey and corn do not make a balanced ration and some food should be fed in connection with it, like oil meal or tankage, or gluten feed, or buckwheat middlings, which are rich in protein. They will narrow the nutritive ratio and make a balanced feed for growing animals.

Competition is such in almost any kind of business today that one must look after the by-products of that business carefully and get all out of them that he can. It is said that the big packers in Chicago would make little or no profit in handling meat if it were not for the by-products. The packers agree that fertilizer, bristles, hair, and all of the by-products of the slaughter house are practically clear gain and go to make up quite a portion of the profits of the business. And so in the dairy business, competition is keen and one should get the most out of the by-products if they expect to make very large legitimate profits in the business.

Stable Manure as a By-product of the Dairy Farm.

The most universal by-product of the dairy farm is the stable manure resulting from keeping dairy cows and the necessary young stock. This is not usually considered in discussing this topic and yet it seems to me that it properly belongs under the head of dairy by-products. Certainly it belongs under the head of dairy farming by-products. It would also be a by-product which would be universal and apply to all farms. Scientific men have made various estimates of the value of the manure produced by a cow in a year. They figured the value of the nitrogen, phosphoric acid, and potash produced at market prices. Some of them have told us that the manure from a dairy cow would amount to as much as \$25 per year if we had to buy these fertilizer ingredients in the open market in the form of commercial fertilizer. Of course, we practical dairymen know very well that the immediate benefit, at least, of the result from manure from keeping a dairy cow does not amount to \$25 per year. We realize, however, that there is much benefit to a dairy farmer from this product, and whether it is worth \$25 per year or not, we know that dairy farms, as a general thing, are

getting better every year. The crop producing power of it increases and it comes largely from the fact that the crops produced upon the farm are fed out upon the farm, and the manure drawn to the fields, thus keeping the soil filled with organic matter, which is one of the very essential things in building up, improving and maintaining fertility. A casual observer can tell in almost any community who are the dairy farmers. The grain farm is gradually getting poorer every year while, as a general thing, the dairy farm is getting better.

The proper way to apply manure is to remove it from the stable directly to the field and spread it. The opinion is growing that the nearer the surface we keep this manure the greater benefit we are going to get from it, therefore, top-dress all you can. In some instances it is not practical to top-dress; for instance, if the manure contains too much coarse material, as straw and shredded corn fodder. And then again, on heavy clay it may be advisable to plow the manure down for the effect it will have on the physical condition of the soil, making it more mellow and friable.

GETTING THE COWS ON PASTURE.

It will soon be time for the cows to go onto pasture. There is no more healthy place for the animals than in the field. These conditions are ideal for producing the best and purest milk. Hence, it is well to avail the animals of the open-air opportunity as soon as possible; but we should not forget that the pasture cannot give a maximum of forage if the animals come onto it before it has sufficient start. The advantage of having pasture plots where the cows can go on one for a few days and are then transferred to another to allow the first to secure a start before again eaten down, is apparent as it gives the animals the advantage of earliness in the field.

The grass should also be supplemented with a grain ration. A comparatively small number of farmers practice this additional feeding; but of those who do it is difficult to find one who does not declare that cost of the feed so allowed is well invested. The animals are being called upon for an abnormal demand where they are producing large flows of milk. To meet this enlarged demand requires more than the normal amount of feed. The animals in the wild state prosper on grass alone, but there only normal requirements were asked of them. To produce three, four and five times her weight in milk in the course of a year means that the cow is working hard, and that she must have substantial food to keep her going. It is, therefore, wise and economical to continue the grain ration when the animals go onto grass.

Another point to consider is to introduce the cows to pasture gradually. Do not allow them the temptation to fill up completely on grass after having full rations of preserved food. It will put them out of condition for a time and the loss will come at the milk pail. Go slow, let them pick along the roadside a few evenings, or mornings, or in the pasture lot, give them full pasture freedom only after their bodies have been accustomed to the change.

INCREASE IN OLEOMARGARINE CONSUMPTION.

The production of oleomargarine increased from 92,282,815 pounds in 1909 to 139,755,426 pounds in 1910. Of this latter amount 3,491,978 pounds were taxed at ten cents per pound. It will thus be noted that over 97 per cent of all the oleomargarine manufactured during the last fiscal year was taxed at only one-fourth cent per pound. These figures are issued by the federal internal revenue commissioner and are authentic. They clearly demonstrate the fact that the oleomargarine business is not working under such a burden as many people think. People have heard so much about the ten cent tax on artificially colored oleomargarine that they have naturally associated this tax with all oleomargarine.

As a matter of fact, less than three per cent of the total product is taxed at ten cents per pound, the remainder being taxed only a quarter of a cent per pound. An effort will probably be made by the oleomargarine manufacturers to secure the repeal of the ten cent tax. These statistics indicate that the claims advanced that the present law is a "burden upon the poor man because it taxes his butter ten cents per pound" is not founded upon fact.

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NEW MILCH COWS AND THEIR CARE.

If we are to get much profit from the dairy we must have good cows, and these cows must be cared for properly. What some men consider good care for the dairy cow others would consider little short of abusive.

There is more profit in keeping thoroughbred stock than in grades, not always in the amount of butter-fat produced, for some grades are first-class producers, but the surplus stock commands a better price. An extra fine animal will bring a fancy price, and the scale of productiveness in a herd of any size is usually greater; then there is a certain gratification in owning a thoroughbred herd, that is worth a good deal to a man. If he feels proud of his herd he will give them better care, and because of this gets better returns from it.

Cows that freshen in the fall give a greater amount of milk in the year than those that freshen in spring. There are two very sensible reasons for this. The cow that has run in pasture all summer, where green feed, fresh air and water and contact with the soil are the conditions, will, having lived for months in a natural way, be in perfect condition to freshen easily and rightly. October is the ideal month. Frosts have killed the flies, there is an abundance of fall feed, corn fodder, etc., to make a large secretion of milk, and the few weeks of out-door pasture bring her to the barn in fine physical condition, where if she is properly fed and cared for, she will keep up a good milk flow until fly time and dry pasture of the next summer. At this time she should be dried off. I am not at all averse to cows freshening in September. My plan is to breed in December, and the herd will usually all drop their calves in September and October.

The spring cow does well until about July, then the feed begins to dry and the flies begin to pester her, and she will shrink in spite of the best of care. It is hard to bring up the flow again in the fall and there is loss by shrinkage through two or three months—then she goes dry when prices are high in winter. A cow should go dry a month or six weeks. There is no gain in milking up to the time of freshening. It weakens the calf and the first month's milk will not be so large in quantity. In fact, I do not think she will do quite so well at any time during the following period of lactation.

A cow to do her best needs to be in the very best possible physical condition at time of freshening. She should not be fat, but in strong, muscular health. It is a mistake to shorten the feed of dry cows. As neither butter-fat nor flesh fat is desired, feed bran or bran and oats, or shorts, a good liberal feed, that she may store up energy for next season's work. A dry cow, it is said, will add from 100 to 150 lbs. to her weight before freshening. The first three or four weeks' milking will reduce her to her normal weight again. During this time the amount of concentrates should run from a very small ration at first to the maximum ration at the last of this period. Bran, shorts and oats should take the place of heavier feeds until the cow is normal again. This does away in part with danger of garget, milk fever, etc.

A cow, more particularly the high-bred cow, should have much attention at freshening time. Provide her a roomy stall, well bedded, where she can turn about at her ease. She enjoys being groomed and petted, and she is the better if given this attention. The quieter, happier and more contented she is the more and better milk she will secrete.

There is much brutality among dairy-men when their cows freshen. Many are alone tied by the head in the stable. They cannot reach the calf to give it the attention it needs, perhaps it runs bawling behind the other cows, is kicked and hurt. Few stables are warm enough so but that a calf will chill, often die if its mother cannot reach it. I have seen cows nearly frantic when in such situations. I have also seen them have serious trouble simply from lying on the stable floor overhanging the gutter. Besides being cruel it is a mistaken policy. No cow will do as well as she would if made comfortable, in a quiet place where she could love and lick her baby at her own sweet will. When removing the calf do so without making disturbance. If she does not see or hear it go she will be less affected by it, and if fed and petted by the hand that milks her she will give down her milk readily. Never make your

cows afraid of you. The more affection they have for you the more milk they will give you. They will do their best, which they will not do if they are excited by fear or in any other manner. It is better to leave the cow by herself a few days. There is a feverish condition of the udder for several days. She will be thirsty and should be given plenty of drink, with the chill taken off, if it be cold weather. A slop made of ground oats and bran, scalded and cooled, is cooling and helpful to the flow of milk. Many cows relish a tea made of some bitter herb. It is customary among many farmers to scald a handful of tansy, or thoroughwort (boneset) with some ground oats or bran, reduce to a thin gruel and give at blood heat as soon as the calf is dropped. This certainly is harmless and has a tonic effect on the digestive organs. It is claimed that oats and tansy have an effect on the generative organs to put them in good condition quickly. It has the merit of being cheap and easily obtained, and those who use it believe it saves veterinary bills.

Cows fed morning and evening do better than those fed three times daily. As they chew their food over, they must have time between meals to digest food eaten. There is quite as much in the care and kindness in the treatment of a dairy cow as there is in the much talked of balanced ration. It takes both to cause her to do her best.

Vermont. H. S. HUNT.

FEEDING THE DAIRY COW IN THE SUMMER.

In the past winter feeding was the problem. During the summer months the cows ran in the fallow or the woods and practically took care of themselves and found their own rations. But with the increase in the number of cows and the decrease in the amount of ground in fallows and woods this is now impossible and the farmer finds that while his silage, clover hay, cornstalks, grain and other feeds are abundant for the cold months, it is difficult to keep the animals doing their best during the summer. There are two supplemental methods that are followed and the dairy farmer should now have the matter in mind if he wishes to follow either.

One method is to grow forage crops, such as peas and oats and feed green by cutting and hauling to the yard where the animals consume them without currying. This method is usually employed where the amount of land is very limited and it is necessary to produce a large amount of material on a small area. As soon as a crop is removed the ground is again sown to produce more forage for feeding later in the summer. The amount of substance taken from an acre of land will astonish the inexperienced. The large quantity of manure made to put back on the land keeps it in the highest tilth and consequently works to secure the maximum of growth in the plants.

The method of summer feeding that is becoming most popular, however, and which is best adapted to the farmer under ordinary circumstances is to put up silage for the warm months. This is done the same as where the corn is ensilaged for winter feeding. Usually one has an extra silo for containing the summer's allowance, but this is not necessary. It is more important that the area of the silo be sufficiently small to allow of feeding fast enough that the silage will not spoil and thereby reduce its value and palatability.

The advantage of this plan over the first mentioned above is that the work is practically done in the fall when the silo is filled. During the rush of the summer's duties the farmer is not troubled with fitting ground for another sowing, cutting a few hundred pounds of green fodder and hauling to the feed lot, all that is required is to get the silage from the silo to the manger and the cows do the rest. There are conditions where the silo could not be used, no doubt, and when such circumstances prevail then the other method can be followed; but usually those conditions do not obtain on the farm and therefore it is the farmers who are making the most from silos, both for winter and summer feeding.

Additional corn and perhaps additional silo room may be required to follow the scheme. It is the proper time to plan on these things just now. This summer or next fall will be too late if you desire the feed next summer. Forage crops will furnish you this summer if you have no other source from which to get feeds to supply the dairy herd.

Wayne Co. A. H.

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DETROIT, APRIL 15, 1911.
CURRENT COMMENT.

Reciprocity Arguments Summarized. Our views regarding the Canadian Reciprocity agreement, upon the adoption of which President Taft is insistent and for which purpose he has assembled congress in special session, have been fully and clearly stated during the past two months. But with the question before congress for final action at this time, we cannot refrain from refreshing the minds of our readers on the points brought out and reviewing briefly the administration's arguments as addressed to the farmers of the country.

We have assumed, and we believe with reason, that the farmers of the country would not have seriously objected to free trade with Canada, or to an equable reduction of duties all along the line, but the placing of all farm products in the free list, while duties are retained on practically all manufactured products, is an unjust and unwarrantable discrimination against the industry which is the basis of our national prosperity, for which reason this proposed treaty is obnoxious to practically every farmer, regardless of his political affiliations or personal views regarding the policy of a protective tariff or that of practical free trade.

The effect of its ratification would be to indefinitely prolong the period in which our farmers will be compelled to take the world price, less the cost of transportation, for their products, while they are compelled to pay the world price, plus cost of transportation and all or a large proportion of the tariff premium, for the products which they have to buy. Then, the history of our country has shown that with the continued opening up of cheap lands for settlement, especially where these have been prairie lands rich in virgin fertility and easily subdued as is the case with a vast area of the comparatively cheap Canadian lands, the products of our older lands suffer from the competition and the lands themselves are lowered in value. History may be expected to repeat itself in this case if the reciprocity agreement is ratified. This result would be far reaching in its effect, since the intelligent body of American farmers would not submit gracefully to this one-sided application of free trade, and the resulting agitation would certainly involve our national prosperity,

even if the reduction of the purchasing power of our farmers, who are the largest buyers of American manufactured products, did not at once bring about this result.

Among the arguments advanced in favor of this agreement is the contention that we need the added resources of Canada to provide food for our people. This we have shown to be erroneous by the publication of official statistics showing that the production of all staple food-stuffs in the United States has steadily increased in proportion to our population in recent years. We are producing more per capita as well as more per acre than ever before. Undoubtedly the general agitation of the increased cost of living was a contributing factor in the making of this agreement, and the claim has been made that it would reduce the cost of living, but would not hurt the farmers. No thinking man could reconcile these arguments. We believe that it would do just the opposite by proving detrimental to our farmers, without materially reducing the cost of living by increasing the profits of traders and middlemen who are in the business of distributing food products. Nor will any who have studied the question assume that the farmers of the United States are getting exorbitant prices for their products at the present time. Every one of our readers knows this is not the case, and the consumer who desires enlightenment on this point can easily get it from the current market reports published in any paper that he reads.

Among the other administration arguments which have been mentioned in recent issues are the claims that our cattle feeders would be benefited by the opportunity to secure "thin cattle" from Canada to be fattened on their corn, and that our dairymen would be benefited rather than otherwise by the free interchange of dairy products between the two countries.

These arguments were both mentioned and refuted in recent issues of The Farmer, the latter by statistics showing the value of cream imported from Canada under the reduced duty imposed by the Payne tariff law. In the administration arguments addressed to the farmers of the country, contained in senate document No. 862, of the 61st congress, it is admitted that this reduction of duty caused the importation of cream from Canada to the value of \$578,000. These figures are followed by the statement, "Nevertheless, no inconvenience and no drop in prices was felt by the dairymen in the United States, while the whole dairy business was kept in a stable condition." Without entering into a discussion of the possible effect of this increased importation of cream from Canada last year, or considering the probable effect of the free importation of all kinds of dairy products as contemplated by this agreement, which we have previously commented upon as above noted, this statement is cited as an illustration of the neglect of those who are responsible for this agreement to study statistics of production and market prices as carefully as they should have done. The gross inaccuracy of the statement above made is easily proven by a reference to the official quotation for butter as given out by the Elgin Board of Trade for the current week and for the corresponding week last year. This official quotation for butter on last Monday was 21 cents per pound, while on the corresponding Monday of last year the official quotation from the same source was firm at 31 cents per pound. But notwithstanding this shrinkage in butter values of more than 32 per cent since one year ago, the public is told in an official document that "no drop in prices was felt by the dairymen in the United States." Truly, there is need for our statesmen to study easily available statistics more closely before they present such arguments to thinking farmers.

There are included a few arguments in the document above mentioned which have not been covered by our previous comments and which we cannot pass without brief mention. The first of these is the benefit which it is claimed will accrue to our farmers from the placing of grass and other seeds in the free list, by enlarging their market for these products. The facts are that the Canadian government protects purchasers of grass, clover and other seeds through the Canadian Seed Control Act, which provides a standard of purity and quality for seeds sold in the Dominion with adequate machinery for inspection of seeds and the enforcement of the law. The result of the removal of the duty on seeds would be to permit the marketing of impure

seeds and seeds of poor quality from Canadian sources in our markets, where no such protection exists, with the result that our farms would be more generally infested with undesirable weeds than they are at present, while perhaps our more choice seeds, of which we now have an inadequate supply might find their way to Canadian markets to the detriment of our farmers.

Another, and still more fallacious argument is advanced in the claim that our potato growers would be benefited by the removal of the duty on potatoes, and statistics of movements of this product across the border last year are given in proof of the statement. The fact is that we seldom send potatoes to Canada in any amount, even when the price is very low as it was last year, while we get comparatively liberal supplies from Canada whenever our price rises to a point which does not make the duty prohibitive. This is so well known as to require no reiteration, the possibilities of Canada in this line of production having been commented upon in previous issues.

Other arguments advanced in the same document in the effort to show that this agreement would benefit the farmers of the United States mention such products as dried and canned vegetables and cottonseed oil, all of which are manufactures, from which the farmer's profit in any increased trade would be small if not infinitesimal.

This review is unnecessary so far as the reader is concerned, except as it may be the means of arousing him to make a last appeal to his congressman and United States senators to oppose the ratification of this obviously unfair agreement. Assurances have come to us during the past week that many prominent senators are coming to see the injustice of the terms of the proposed agreement, and well informed friends of our agricultural industry at Washington believe that if the farmers of the country, both individually and through their organizations will make a strong protest at once, the agreement will never be adopted in its present form. We trust that our readers, both individually and collectively so far as possible, will make one more earnest appeal for justice and equity in this matter, particularly to the United States senators from Michigan.

OUR LANSING LETTER.

Lansing, Mich., April 10.—There is but little prospect that the unit option bill, which establishes cities, villages and townships as the unit in local option, will go through the legislature this session, despite the several schemes which the liquor men have engineered in an effort to get the bill on its way. The last move was to introduce the bill in the senate, in the hope that a start could be made with it in that house, but the prospects of success there are but little better than in the house. One cause of ineffectual work on the part of the liquor men, is the suspicion which has been engendered between the liquor men of Detroit and those out in the state. The latter faction are suspicious that the metropolis is working to the end that the city may enjoy the entire liquor trade of the state, and while this is emphatically denied, it has aroused a feeling which has resulted in lack of the usual harmonious action by all the liquor men of the state.

The Fowle bill which provides for a filing of 50 cents per \$100 on mortgages, has passed the senate and friends of the measure assert it will go through the house without trouble. The house, by suspending the rules placed the bill on third reading, without reference to a committee, that there might be no danger of its receiving no consideration. It is considered one of the most important bills of the session and Senator Fowle devoted much care to drafting its provisions.

The total of appropriations in the house promises to exceed the amount of two years ago. The ways and means committee has guarded budgets with care and endeavored to pare amounts to the limit, but pressure has been very strong from all quarters of the state. The general budget as reported out is for \$2,060,000 for 1911 and \$1,063,000 for 1912. Included in the amount is \$750,000 to wipe out the deficit and an emergency fund of \$200,000, with which the state can guard against contingencies, which often arise to bother and disturb the state's finances except there is some provision for them in the budget.

The committee has allowed \$280,000 for a new heating and power plant at the university and \$150,000 for a new auditorium at the Agricultural College. There is also included in the budget the sum of \$60,000 for a science hall at the western normal school. These are all the new buildings of importance which have been agreed to thus far, and it is probable that no others will be allowed. The increased cost of maintaining the institutions, however, and the natural increase in the cost of maintaining the government, boost the total up to an amount which will cause pretty careful scrutiny in the executive office before they are allowed. Gov. Osborn has announced several times that he will not stand for a dollar being appropriated more than is absolutely necessary, and as he has the authority under the new constitution to

eliminate items without vetoing the entire budget of an institution, no definite amount can be stated until he has passed upon the appropriation bills.

It is expected that extensive farms will be provided for each of the prisons of the state. A bill has passed the senate to allow for the purchase of 600 acres for Jackson prison and the other two prisons will be similarly provided for, it is expected, in view of the general understanding that the state's policy is to be changed towards the penal institutions and the contract labor system abolished. As many of the convicts as good judgment warrants will be employed on the farms and various industries will be established to provide employment for the remainder. Warden Russell, of Marquette, is here with a proposal that the legislature appropriate \$60,000 to buy the box contract machinery at that prison. It is claimed that this can readily be made a profitable investment.

In this final week there is to be a great rush for votes for bills, more of which are before the house than in many years. The great danger is that the two houses will get mixed in a deadlock over some appropriation bills in the closing days. Many members fear the date, April 19, is too early and regret that they were easily persuaded to fix it before the end of the work was better understood and prepared for.

Members of the senate expect the initiative and referendum bills will go through but doubt whether the recall will have equal success. The senate is not at all pleased with the house for having passed that bill.

In all the confusion which has arisen within the last week, Governor Osborn has not interfered, announcing when asked about matters that he hopes and expects the legislature will give a good account of itself. Despite the vigor with which he urged numerous reforms the executive has been content to leave most of the members to their own devices and he has declared the responsibility rests upon the legislature as to the outcome. There is little doubt that a special session will be held later. The matter of apportioning the congressional districts will have to have attention and it is probable there will be time for attention to come to other matters at that time.

HAPPENINGS OF THE WEEK.
National.

Senator Martin, of Virginia, has been selected leader of the democrats in the United States senate.

An explosion in a mine at Littleton, Alabama, where convicts were employed resulted in the loss of 123 men, most of them being colored convicts.

The report of the naval department regarding the recent practice of the several war fleets show the efficiency of the gunners to be much above the average, as the conditions for target work were made more stringent than heretofore. In spite of the use of smaller targets, their difficult positions and the extension of ranges, the percentage of hits of all the fleets is higher than for previous years.

It is becoming more apparent that the special session of congress, now called, will be a stormy one, since both of the old parties are divided, making the outcome of legislation very speculative. Each of the divisions appear to be pulling in a different direction, and in what manner they will come together is a question.

A party of eminent doctors are making an investigation of the effects of high altitudes upon the human system, and will live on Pike's Peak this summer for a stated period to carry out the experiments. Among the important questions for determination are the adjustment of blood volume, heart action and breathing under the influence of high atmospheric conditions. Accurate data upon the matter is wanting.

It is reported that Attorney-general Wickersham, of the federal government, will attend in person the prosecution of the bath tub cases soon to be taken up in the federal court sitting in Detroit.

Tom L. Johnson, of Cleveland, four times mayor of that city, died Monday night.

An automobile route is being established between Chicago and New York. The plan is to have one machine start from both ends every day, or more if patronage demands, the trip taking seven days for completion.

The recent local election results in Calhoun county are being contested as the "drys" who contend that according to the reading of the statute the number of votes favorable to the "wets" were not a majority of those cast upon the proposition. On the face of the returns the majority was only 35. It is likely that Jackson and Genesee counties will also test the vote upon the same ground.

Foreign.

It develops that Spain and France are agreed that intervention in Moroccan affairs is again necessary, and troops are even now being mobilized for that purpose. In a deliberation of the policy of the Spanish government in co-operating with France there appeared to be no dissenting attitude, the minority parties consenting upon the ground that the honor of the country was at stake in the present infringement of right across the Mediterranean.

The public has been given a more potent reason for the mobilization of the 20,000 troops along the Mexican border and the directing of both the Atlantic and Pacific fleets of American war vessels to go to Mexican waters, this past week by the publication of an intrigue planned between Mexico and Japan giving to Japan rights in Magdalena Bay for maneuvering and a coaling station after the Mexican government had withdrawn the privilege from the United States, and apparently with the intent to embarrass this country. The plot was discovered by Ambassador Wilson of the United

(Continued on page 455).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND LIVE STOCK JOURNAL
PUBLISHED WEEKLY
ESTABLISHED 1843

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

This Magazine Section forms a part of our paper twice a month. Every article is written especially for it, and does not appear elsewhere

HERE comes father, and there are two strange men with him," said Elinor Brandon as she turned from the window where she had been watching. "Mercy me! Strangers for supper and nothing fit to put before them," declared Mrs. Brandon, a gentle-faced woman well toward middle age.

The younger woman laughed. "Why, mother, you know your table is always set fit for a king," with a glance at the spotless cloth and shining dishes that were her mother's delight. But the other shook her head, and began bringing out her best dishes and preserves from the storehouse.

In a short time Mr. Brandon entered the house, followed by his two companions. He was a tall, stern man whose word in his family had always been law, and his gentle wife had been the last one to ever think of disputing it.

"These gentlemen are passing through the country and intend holding a meeting at the schoolhouse tonight, so I invited them to stay to supper," he announced. Mrs. Brandon welcomed them cordially and Elinor watched them curiously. She caught herself thinking that somehow they did not look exactly like ministers, and she felt a sort of curiosity to know what doctrine they were to preach.

As she busied herself helping her mother with the evening meal the steady hum of their voices came to her from the other room where they were being entertained by her father, and every now and then she caught a glimpse of them through the open doorway. Soon supper was announced and they sat down to their meal. Then she had a better chance to see what they were like. One of the men attracted, and at the same time repelled, her in a manner that was very confusing to her mind and that she could not at all understand.

"I think I shall be able to persuade your husband to sell his home here and locate with us in a delightful new colony we are founding," he said, turning to Mrs. Brandon with a winning smile.

"I am sure we are well satisfied here," answered Mrs. Brandon, quietly. "The Lord has prospered us wonderfully."

"Just so, and it is just the kind of men that your husband represents that we are anxious to obtain for our colony. We do not want any drones. I have obtained control of one of the finest pieces of land to be found in the United States and those first on the ground will, of course, obtain the most choice portions. I have selected your husband as one to receive high favor."

"But what kind of a colony is this?" she asked, doubtfully.

"A colony of religious people where the law of God will be supreme and where all who do not worship His holy name will be excluded so all will be perfect peace and harmony."

Then he began to describe the land in glowing language. It could easily be seen that both Mr. Brandon and his wife were greatly impressed with what he said. He told of the natural advantages of his land, which was on an island in the lake of Michigan, with one of the most beautiful harbors in the world where there was neither extreme cold nor extreme heat on the wave-washed shores. In fact, he seemed to have discovered a second Eden.

"I am surprised that no one has claimed this land before," declared Mr. Brandon. The eyes of the other narrowed a bit as he answered: "Oh, there are a few settlers there but we intend to annex them to our colony in a short time."

Elinor listened in silence, for it was not deemed her place to converse with her father's guests unless their conversation should be directed to her, but there arose within her such a foreboding that she was alarmed. She did not in the least understand her own feelings, but she did know that she did not want to go away from her pleasant home, and

ONCE A MORMON.

By IRMA B. MATTHEWS.

she hoped that her father would not conclude to go.

After the evening meal had been finished and the chores done, the horses were hitched to the wagon and they all went to the meeting to hear the men preach. Their talk was in most part about their wonderful land of promise and the colony they were going to found there; they asked people to go there to live. Of religion they talked also, but somehow not many were able to comprehend much of that. They claimed there was a great leader who had received revelations from God and that he had been commanded to found this colony for God's people; they who would leave all and go there should belong to the chosen few. It was the magnetic personality of the speaker more than what he said that carried the audience with him and made them pliant to his will.

At the end of that meeting he had the promise of many to be ready to go to the promised land, and among them was Amos Brandon.

The men went on to other places, but they would return again in the autumn, and those who wished to avail themselves of the privilege must be ready to accompany them at that time.

"But, father," argued Elinor, "do you mean to go and leave Myra and Rosetta here?"

The mother looked at him with quivering lips as Elinor asked this question in regard to their two elder daughters, who were married and lived not far distant.

"As far as Myra is concerned, I believe she will elect to go with us," he answered calmly, "and what she elects to do James will do, but I cannot answer for Rosetta."

Elinor felt this to be true, for James Baldwin was a weak man, one easily influenced and therefore much governed by the wishes of his wife. Elinor had once remarked to Myra, with curling lips, when the latter had boasted of her ability to have her own way with James, that she hoped if she ever had a husband he would at least have a mind of his own.

"You want a master, I suppose," answered her sister, a little nettled, "and I don't know but what you need one," for Elinor was acknowledged to be most like the father of any of the children and had much of his stubborn disposition.

"I want a man, not a puppet to be pulled this way and that," she answered. "It is well now, Myra, but wait until someone comes along that has more influence with James than you have, what then?" But her sister had scoffed at this idea.

It was as the father said. Myra decided that they must go with her parents and, obedient to her will, James sold his farm, although he had to do so at a sacrifice. But the husband of Rosetta refused to listen for one minute to the proposition, although he dreaded to grieve his wife by thus separating her from all her people.

"It is sheer madness," he declared. "I cannot see how they expect to better themselves in any way. They are going to a new country where it will be years before they have the comforts we have here," but his words fell on deaf ears. They were, as it seemed, under a spell and go they would.

Mrs. Brandon was almost broken-hearted when she saw her home, where she had toiled so many years, sold to strangers for much less than its real value, but she never dreamed of disputing the will of her husband. Elinor raged inwardly when she found her mother weeping over her packing, but she had to submit with the best grace possible. She had begged to be left behind with Rosetta but her father had refused and told her

sternly never to mention such a thing again.

She had talked the matter over with Rosetta and her husband. While they sympathized with her they knew it would be useless to argue the matter with her father. "One thing, though, Elinor, you are to always remember," said Sam Morgan, earnestly, "should you ever need a friend do not hesitate to call on me and I will do what I can to aid you."

Elinor thanked him tearfully, but she little thought of the days and weeks that she would long for his help and yet have no way of making her longing known, or of the dark days she would encounter and the sorrows that would try her soul before she would ever see this dear sister again.

Myra was light hearted and laughed at the other for what she called her absurd nonsense—as though father did not know what was best. But Elinor only answered that could she choose as Myra had been able to do, she would never leave her old home.

"I do not think you love mother as you should if you are so willing to be separated from her," answered Myra, tartly, and from that moment no one heard Elinor complain again, for, dearer to her than all else in the world was her loving, gentle mother.

It was the beautiful autumn time when the men who had preached to them again appeared, with more converts, and together they all journeyed toward the promised land.

Chapter II.

There were about one hundred in the party, counting the children, and it was a tedious journey, although the men who had persuaded them to attempt it tried to keep their spirits up by telling them how pleased they would be with their future home. They were all glad when told they were nearing the end of their pilgrimage. The boat on which they had embarked for the last stage of the journey had left Mackinac and was steaming over the blue waters toward the Beaver Islands, their destination.

It was a soft beautiful day in autumn, one of the hazy days that the Indians call Indian summer, and the soft breeze gently sweeping the waters made hardly a ripple on the clear surface. Many of the passengers stood on the deck watching eagerly for the first glimpse of land, and among them was Elinor. It came at last, and as they came nearer, and the full beauty of the place and the fine harbor burst upon them many were the exclamations of delight.

Elinor was naturally a lover of nature and her eyes kindled as she watched the scene—the dwellings near the shore, and back of them the forest in all the hues of red and brown, purple and gold. It was a scene well worth the brush of any artist, and she drank in the beauty with great delight.

"How do you like it?" said a voice near her. She turned with a start to find the one who seemed to be the leader of the expedition, standing, smiling, by her side.

"It is certainly beautiful beyond all comparison," she answered, candidly.

"And perhaps I am not so bad as you imagined in bringing you here to share my kingdom," he continued.

She started. "Your kingdom! I thought—who are you?"

"My kingdom, yes; I rule under God. The spiritual kingdom is His, the earthly mine. He rules through me."

"You are the leader, then, of whom we were told. He who claims to have revelations direct from God," she added slowly.

"He who has these revelations," he

amended. "Yes, I am he, James Strang."
"But why were we not told this before?"

"I had my reasons. But the time has come to throw off the mask. You would all know as soon as this boat touches the shore, but I have already made myself known to some."

Elinor remembered that this man had been much with her father during the journey and that her father had appeared more and more taken with him. The thought flashed through her mind that he was one to whom the secret had been revealed, but she made no comment. Neither did she wonder why everyone would know his true character as soon as they reached the island. Her eyes were again on the landscape and she was watching the clusters of houses; in fact, she had almost forgotten her companion until he spoke again; even then there was in her mind a dim wonderment as to why he was devoting so much of his time talking to a young girl who evidently cared little for his conversation, when there were so many men and older people about them.

"Those are mostly fishermen's cottages over that way. Our own settlement lies in this direction," he continued. "I thought it best not to be too near the Gentiles."

The word aroused her and she turned toward him instantly. She had never heard the word except in one connection—she knew it was what the dreadful people called Mormons, in Illinois, had called all those who were not of their belief.

"Gentiles! I do not understand you. I never heard the word used excepting by—" she broke off suddenly. "Oh, surely, surely you are not a Mormon! You are not taking us to a Mormon settlement!"

"And why not, pray?"

"Oh, because they are the most wicked people in the world," she answered, with horror.

"Why wicked?"

"Why? Because they have more than one wife and that is a terrible way to live I am sure."

A ringing laugh answered her. "My dear, you have strange ideas of us. I am the leader here, and I have but one wife, and I preach against it, too. You see, when Joseph Smith died—"

"But he had more than one wife," she interrupted.

"It is true he fell from grace and paid the forfeit with his life, but, as I said, when he died those who believed in polygamy followed Brigham Young to Utah, and those who did not have established themselves here. Do not fear, we are not so bad as we are painted."

He left her standing there and she again turned her eyes toward the island they were approaching but her thoughts were in a tumult. She had been taught to despise the Mormons, and here she was in some ways a member of them. But no, she agreed to herself, they shall never make me that. Then her head bowed a moment, "Dear God, protect thy child and keep her spotless even be she in a den of raging wolves," and with the prayer came peace into her heart. After all, was not God here in this place as well as in her old home, and was He not sufficient for her, a sure refuge? She smiled and once more drank in the beauty of the landscape. The soft smile was still on her face when she landed, and there was one among the bystanders who, seeing her face, never forgot. That day was he sure he had met his fate.

Elinor soon knew why there could no longer be concealment when they reached the land, for the people flocked around Strang, calling him king and welcoming him with fervor and devotion. As she saw their joy at the meeting, and heard him speaking kindly with them, she wondered if, after all, she was inclined to make mountains of mole hills, as her mother so often told her. Myra was delighted with the place and the hearty welcome they received from the people,

but some of the men began to grumble, saying that things were not as they had been represented to them—that this place was simply an unbroken wilderness.

King Strang (for such he really was and such we may as well call him in this story) turned on them a little sharply. "Surely you did not expect to find cleared farms and houses ready built for you, did you? You all knew what a new country was like. You will find the soil, the climate, the island all that I told you it was."

They were silenced, if not convinced, for they saw that argument would be vain now and they could only make the best of what lay before them. Some of them were homesick indeed, for a long winter was before them and no chance to raise crops before another year. There were those who had a supply to last, for they had thought of this, but others had sold everything they had to get means to move with and were without anything, but the king encouraged them, telling them kindly that his people who had would be glad to divide with them. He was sorry not to be able to stay with them during the winter, but duty called him elsewhere. However, his deputy, Adams, would do all that he could for them in his absence.

The people were disappointed in this, for they had implicit faith in their king and his power to avert disaster, but they said nothing, for there was nothing for them to do but submit, and they watched him sail away with his family.

They had hardly time to get houses together to shelter them before winter was upon them, and that winter was one never to be forgotten by those upon the island, for it was one of great suffering.

Chapter III.

Elinor walked with her father and mother to the home of one of the families who had kindly offered them shelter until they could get a house of their own. One thing had so astonished her that as yet she found no words that would convey her impressions, nor had she as yet found a chance to express them, and that was the way the women were dressed. They wore long pantalettes and short skirts of the same material, namely, calico. They also wore their hair cut short. The first one Elinor had seen in this strange attire she thought was merely a freak, and she grasped Myra's arm with an insane desire to laugh.

"Oh, Myra, look!" she had exclaimed. "What kind of a style do you call that?"

Myra turned to her and exclaimed rather sharply: "Don't laugh, Elinor; I do not know, but," pointing up the shore, "there are some more dressed the same way. You must not laugh." Elinor quickly turned away her face, for she could not repress the smile that came. Now, seated in this home, she watched with a sort of fascination as the woman went about her household tasks. She was a bright woman, with a sweet, womanly face, but oh, that dress!

One of the children, a little boy of five, came and leaned against her knee, patting her pretty dress with his hands. "It is so pretty," he said quaintly. "Mamma wore pretty dresses once, too."

"And why does mamma not wear pretty dresses now?" she asked in a low voice as she smiled at him. He shook his head, but the mother answered for him.

"Because it is vanity to wear pretty clothes and we think too much of the body and of adorning it and not enough of our souls. The king told us this; he had it as a direct revelation from God."

"Do you mean that Mr. Strang told you what kind of clothes you must wear?" asked Elinor in astonishment.

"He designed the dress, certainly, but only in accordance with the revelation."

"It seems strange to me," said Elinor, in a sarcastic voice, "that it was not revealed to him that it was vanity for a man to wear a high silk hat and fine clothes like Mr. Strang seems to admire."

The woman looked shocked at her flip-pant manner.

"The king can do no wrong," she answered, quietly. "You see the men dress much alike, but women dressed so differently that there was often much envy in regard to their clothes. Now, when we are all dressed alike, one person always looks as well as another."

Elinor could not deny this, and the woman continued with a winning smile: "You will think differently about the matter when you have been here for a time and will wear the dress with the rest."

"Never!" exclaimed Elinor, fervently. "No one shall dictate to me the kind of

clothes I shall wear. I live in America." Her eyes flashed as she spoke. Elinor came of good old Puritan stock and there was fighting blood back of her, but her mother interposed at this juncture and the conversation was turned into other channels.

Meantime Mr. Brandon was selecting the place for his future home. For reasons of his own, no doubt, Strang was favoring Mr. Brandon in every possible way. The surprise is that a man with so firm a will and intelligent a mind would be so carried away with the dog-mas advocated, but the fact, though unaccountable, remains a fact. The place he selected for a home was one of the finest the island contained, and his son-in-law was allowed a piece of ground not far away, for Mr. Brandon explained that the women would be more contented if they were close together. Of the son-in-law Strang took but little notice; a good reader of character, he noted the other's weakness and knew he could bend him to his will at any time he wished, so he gave his attention to making a complete supporter of Mr. Brandon. He smiled grimly as he noted the rebellious attitude of Elinor, but it would not last. What was this puny girl that she should attempt to pit her will against his own?

Elinor thought but little about King Strang in any way. She was a light-hearted girl and she roamed about the island, enjoying the beauties and helping in the household tasks of their hostess, and watching with eagerness the house her father was working hard to get done so that they might get into it. It was decided that they had best try to build but one this winter and both families live together; then in the spring they would build a house on the land allotted to James and his share. They were all glad when the house was so far completed that they were able to move into it, and they bade goodbye to their kind friends, the Bennets, and went to live in their new home.

Long before this, however, the king had left the island, telling them he would return in the spring. He left affairs in the hands of one of the elders, a man named Adams. Elinor went to the services with her people on Sundays, listened to the word as it was preached and found nothing so different from other religious meetings.

But there was destined to be great suffering on the island that winter. Many had nothing to eat, and sickness, coupled with want, began to make havoc among them. Mr. Brandon and a few others among the late arrivals had plenty to last them through the winter, but in a short time some were without food entirely. Those who had supplies shared with the others all that they dared, but many died and the suffering was great. Day after day Mrs. Brandon and her daughters went from house to house, doing all that they could to relieve the suffering. Help also came from the other settlement. The Gentiles, as they called them, hearing of the suffering among the people, came and offered them all the assistance in their power. The men went out and fished through the ice, offering them their catch, and often this constituted their whole diet for days. It was certainly a winter of horror. Elinor always remembered one day when, in company with her mother, she visited a family in the great-est want. The father and two children were sick and the poor mother worn to a shadow by constant care. There was not a crust in the house to eat. A Gentile woman had just come in, bringing a large fish ready to be cooked, and the two children watched her hungrily as she prepared it, while the mother sat praying and calling to their king to come back and save them all from death.

Elinor turned toward her impatiently. "Why do you pray to that man?" she asked. "Why not pray to God? He is the one who can aid you."

The woman looked at her pityingly. "You do not understand," she answered; "if our king was here this would not have happened."

"Then if he is so wise he should have foreseen this and staid here," Elinor answered, sharply.

The Gentile woman turned and smiled at Elinor, while the woman went on with her prayers. "You cannot convince them the king is not as powerful as God himself," she said, "but how is it I hear such sentiments from one of their own number?"

"I am not of their number," she answered, then stopped a moment. "Well, I suppose I am considered one of their number because my home is with them. My father is much taken with them, but

I do not believe in some of their ways. However, I suppose my lot is here."

"I am sorry for you," answered the woman, again in a low voice, "but believe me, it will be better for you not to say such things in public."

Elinor gave her a quick glance but had no time to ask what she meant, as her mother came up at that moment and told her she had better go home.

Elinor walked thoughtfully away, wondering more and more about what she had heard. She had not gone far, however, when she was joined by a young man who asked: "Whither away so fast?"

She started at sound of the voice and looked up at the speaker. Robert Stuart was good to look upon, tall and manly, with a bright, intelligent face and a square jaw that spoke of firmness of purpose. This was not their first meeting, however, for he had made it a point to meet the girl whenever possible and had walked with her to her home many times. As they walked along, talking airily, the perplexity of the morning faded from her mind and she became once more her bright, jolly self.

Chapter IV.

With the opening of spring Strang returned to the island, bringing his family with him, and things brightened up. The sickness left them, the steamer brought supplies, and everything became brighter.

"I knew things would be all right when the king came," one of the women remarked to Elinor. She had seen the folly of trying to convince them otherwise and only smiled.

His people told him how kind the Gentiles had been during the hard, cold winter and he listened to their stories, but shortly after his return he said something in one of the services that startled some of his hearers. "It is perfectly right for you to take anything needed for your comfort from the Gentiles. God's people have a right to anything wherever they find it. Never suffer if there is wherewith to make you comfortable close at hand."

"Father," demanded Elinor after they had returned home, "what did Mr. Strang mean? Did he mean for us to take things that did not belong to us without leave?"

"It would be far better for you to attend to your duties at home and not be trying to understand things you know nothing whatever about," her father answered, sternly.

"But father, that would surely be stealing," she cried in dismay. Her father turned to her with a look that struck terror to her heart as he answered: "Never again let me hear such words from your lips. It is not for a slip of a girl like you to judge the king. His laws are just and he knows why they are made; you do not."

She stood for a moment as though turned to stone. Could it be possible she had heard aright, that her father, in whom she had always had implicit faith, could have uttered those words? Was he bewitched? What did it mean? She gazed at him with wide-open eyes; then her lips closed firmly in a manner so like his own.

"He is not my king, father, nor shall I ever follow his teaching. Right is right, and wrong is wrong, and no one can dispute it."

"His will is absolute here, as you will soon find," was the answer, but she heeded not. Her heart was sore at the thought of the change in her father, and she thought more of that than of the doing of King Strang.

The same afternoon she visited Myra, who was now established but a short distance from them, hoping to find sympathy here for she could not trouble her mother. Myra's occupation, when she walked in, drove all else for the moment from her mind—she was making one of the detestable dresses worn by the Mormon women.

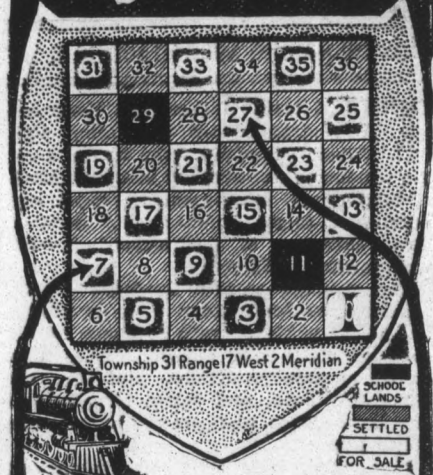
"Whatever is that for, Myra?" she asked.

Myra laughed. "To wear, to be sure," she answered. "Of course, you know we are all expected to wear the prescribed dress as soon as we have worn out our clothing and have to make new, and James bought this for me as a present for our wedding anniversary, and I am making it up this way to please him. He thinks it is best for me to dress like the rest, as the king desires it. When are you going to make the change?"

"Never. And I wonder, Myra, that you will consent to wear that hideous thing! The idea of that man telling everyone what to wear."

(Continued on page 448).

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Easter Customs In Our Own and Other Countries.

By Eva Ryman-Gaillard.

PRIOR to 1752 the date on which Easter should be observed was subject to many changes, and the cause of much wrangling, but in the year named the rule which now governs was adopted, viz.: That Easter shall be observed on the first Sunday after the full moon which happens on, or next after, March 21, computing by the calendar moon. By this ruling the earliest date on which Easter can be observed is March 22, and the year 1818 is the only time it so happens during the two hundred years ending with 2000 A. D., while in the same two centuries it falls on its latest possible date twice—April 25th, of 1886 and 1943.

In early times the Easter Festival lasted eight days; after the eleventh century it was shortened to three days; later on it became two and, at last, one—as we now have it. Its regular observance in the United States is of comparatively recent date, for while Virginia and Louisiana observed the day from their earliest settlement, and a few other southern states observed it in a desultory way, the custom worked northward very gradually. Catholics, Lutherans and Anglicans adopted the custom of decorating the church and having special sermons and music much earlier than other denominations. All, however, gradually accepted the custom, the Presbyterians adopting it about the time of the opening of the Civil War.

The modern forms of Easter observance need no explanation, as all, theoretically at least, are symbolical of the Resurrection, and in ninety-nine of each one hundred Easter services there will be little variation of form. In a few instances, however, the service partakes of a solemnity that is wondrously impressive.

The Moravian Easter Customs

belong in this class, for the sojourner in the city of Bethlehem, Pa., will be awakened before daylight by the trumpeters who pass through the streets, trumpeting in joyous notes until they reach the Moravian church. Here they take their position on the platform surrounding the steeple and play an Easter carol.

By this time men, women, and children of the Moravian families, with many of other faiths, are hastening toward the church, which is ablaze with light and beautifully decorated with lilies. A solemn silence prevails until, suddenly, a ringing tenor voice breaks out "The Lord is Risen" and the congregation sings in response "He is Risen Indeed." After this awe-inspiring opening a service is held in which the singing, congregational in character, is led by the trombone band, or (as it is there called) choir.

At the close of the brief service the trombone choir, with the congregation following, passes out and marches to the old Moravian burial ground. Here, with the rising sun throwing the first rays of light across the sky, they gather around an open grave and, in spirit, greet the risen Savior. After this, every voice joins in singing a triumphant hymn of rejoicing as a close to the service.

Later in the day the congregation again assembles at the church to listen to a musical service, when the fine organ and the twelve trombones that form the choir render the finest of Easter music.

The Pueblo Indians

of Arizona and New Mexico have, in each community, their special dances and festivals, but, widely as these may differ, the Easter dances are uniform in type. In every Pueblo town the estufa is the holy of holies, consecrated to religious ceremonials, in which the sacred fires are kept burning from generation to generation, and neither white man nor stranger from other Indian tribes can, ever, enter therein.

At dawn of Easter morning Indians, dressed in a coating of red and white paint (made of adobe clay) applied in every possible manner to produce grotesque effects, come forth from the estufa and begin to act the clown. In contrast to these joking clowns are the dancers that follow them from the estufa for not one of these is ever seen to smile, no matter how mirth provoking the things they see.

A master of ceremonies stands before the dancers and signals the changes, which are so perfectly carried out that the dancers seem like automatons, worked by machinery. After an hour of hard work the first set of performers retire and their place is taken by others, who come from the estufa, and in this way

the performance is kept up until sundown, when all who have taken part are called to partake of the feast of meat, corn cakes, and chile. All others must leave the vicinity, so what takes place there, or what the ceremonies that are carried out within the estufa, may never be told.

Over Comers Give Aid to the Needy at Easter Time.

Leaving Chicago a quarter of a century ago, a small colony of Over Comers went to Jerusalem, where they now live in accordance with their interpretation of the New Testament. This interpretation makes Easter, as a celebration of the resurrection of Christ, an impossibility, yet the part they take in the events of holy week is full of the spirit of Christ.

Above the door of the room where they hold their sacred service there hangs a copy of the Golden Rule, which constitutes their creed. In living up to it each member of the colony works for the benefit of all, and even "the stranger within the gates" is welcome to whatever he may need.

In a sense, the Over Comers observe Easter, though they take no part in fasting and sorrowing over the crucifixion, nor in rejoicing over the resurrection, for they believe the second coming of Christ is yet to be accomplished. During holy week asses are kept saddled and every table stands, during the night, supplied with milk and food, and it has been said that these preparations were because of the expected coming of Christ, but the more probable fact is that not only these

things but the service of their physician is their offering to the needy among the thousands who throng the city during the week.

From Monday until Friday these people work early and late, putting in many extra hours at their money-earning forms of labor and, at the end of the time, hand it all to the chief elder to be expended, as he sees need, for the sick and needy.

Four o'clock of Friday morning finds the entire colony at the Church of the Holy Sepulchre, where they sing and pray for an hour and then return to their homes, taking strangers with them for breakfast. Saturday and Sunday, when the pilgrims who have been fasting and praying in the Garden of Gethsemane and on the Mount of Olives during the week come thronging back to the city, many are sick from change of climate or weakened from long continued fasting, and then it is that the Over Comers are busy providing for their needs.

When people of every other Christian faith gather in the Church of the Holy Sepulchre the Over Comers are not among them. Their offering has been made in the form of Christ-like helpfulness and their joy is complete.

Easter and Gladness

should be connected, but to the exiles in Siberia no other day is so filled with bitterness. According to exile laws a proclamation is issued, a week before Easter, that convicts, political offenders and all exiles, whatever the cause of their banishment, shall meet at the guard house, or other public building, on Good Friday morning to pray for the "Little Father" and offer thanksgiving for the many blessings (?) he has showered upon them.

Called together at six o'clock they are forced to offer allegiance to the head of the Russian Church—"the Little Father

who can do no wrong"—and then forced to listen to his praises until sundown, with but two brief pauses for scanty meals.

On Easter Sunday they get one decent meal, but enjoyment of that is poisoned by memory—the memory of the outrageous injustice, the shameful humiliations, and the horrible tortures they have been forced to endure.

No room for gladness is left in the hearts filled with memories of happy Easter days in the homeland from which they have been exiled, but when they are forced to stand up and shout "God save the Tsar! God save the Tsar!" the bitterness is increased until it becomes hatred so bitter as to be unspeakable, and Easter is a time to be dreaded because of this added humiliation.

THE GLAD MORN.

BY Z. I. DAVIS.

With joy in the voices of children,
From north, south, east and west.
They come with their baskets of lilies
To offer the sweetest and best.

The morning of Christ's Resurrection
Grows brighter through each passing year.

Speed onward, Time's highway of palm leaves,
His second appearance draws near.

We come with a branch of palmetto,
Magnolia, arbutus and pine,
To scatter the flowers of nations
Before the grave's victor, divine.

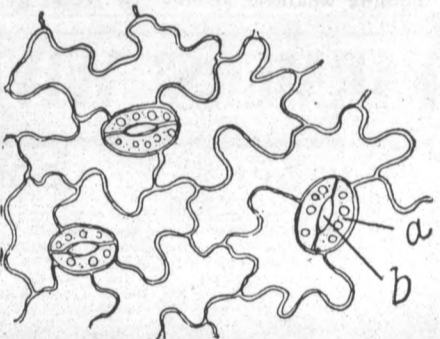
From each bursting crocus and tulip,
The gold of the daffodil's sheen,
The opening buds in the woodland,
The wakening grass blade of green,

Is sounding the glad acclamation
That death of its terrors is shorn.
All earth, sea and heaven are praising
The Lord of the Jubilant Morn.

THE MAKING OF A TREE.

BY KATHARINE A. GRIMES.

There is a story told about a little boy who had never seen a tree. He had lived all his life in the city, and knew of nothing except smoky skies, high buildings and dirty alleys. He had no idea of how anything grew, only such as were made of brick and mortar, or iron, or of long, smooth boards held together with nails. He had never thought to wonder where all these things came from. If anyone had asked him about it he would have



Enlarged surface view of Leaf showing Stomata.—a, guard cells; b, opening between them.

said, "from the factory." That was the beginning of all things for him. Beyond that, the world might have been made of green cheese for all he knew.

The boys of the farm are much wiser than the city lad in many ways. They know that bricks are made from clay, that iron is taken from the brown bosoms of the hills, and that the smooth white boards once stood green and tall in the forest. They have seen most of the processes by means of which these materials were made ready for use. They can answer many questions about the growth and uses of trees, and can tell the city boy many things that would surprise him very much.

But there are many things that a tree could teach even a country lad if it could speak. There are wonderful secrets shut up in its rough breast. Like all the children of Old Mother Nature, the tree only tells these secrets to those who love it best, and are willing to wait patiently until it is ready to speak. The ones that are to be set down here have only been discovered by long waiting and faithful watching.

Like all things, the trees were meant for use. That they are beautiful as well, adds that much more to their value. It is also an advantage to the trees themselves, as for that reason many are preserved that might otherwise be cut down and destroyed.

Everyone—or at least everyone who lives on a farm—knows many of the ways

in which trees are of use. When growing they furnish shade, homes for birds, and food for men and animals. When felled they build and heat our homes, carry us all over the world, furnish us with tools, furniture, basketry, and most of the necessary articles of every-day use. Even the books we read are printed on paper made from wood fiber.

There is one part of the tree's work that we do not often think of. That is the work they do in keeping the air fit to breathe. All boys and girls who have studied physiology will remember that, at every breath expelled by a person or an animal, a small quantity of carbonic acid gas is thrown off into the atmosphere. This gas is very poisonous, and, if there were no way of getting rid of it, the air would soon become so full of it that everyone would die. The tree needs this very material for its growth. More than half the substance from which the trunk of a tree is built is carbon, and all of this is formed from the carbonic acid gas which it gets from the air. Coal is almost pure carbon, and is the product of trees that have been long buried in the earth. It was once this same gas, and was taken in by the trees when they were growing, ages before mankind ever existed.

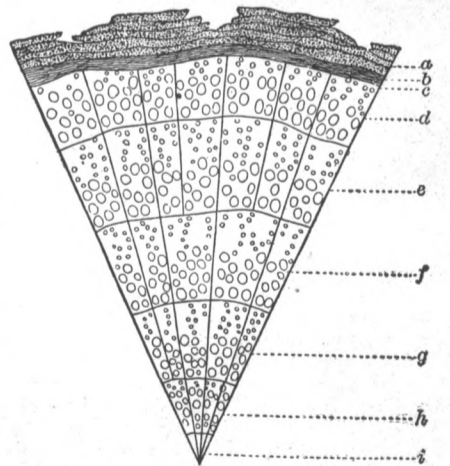
Air laden with carbonic acid gas enters the tree through its leaves. As the tree needs so much of it, the leaves are made very thin and flat so as to present a large surface to the air. On each side of the leaf are tiny openings called "stomata," or "breathing pores." These are to the tree what lungs are to a person. Through them, also, the surplus moisture from the leaf passes off into the air. Each little opening is protected by two half-moon shaped cells, which lie, one on each side of the pore, with their concave edges turned toward each other. In dry weather, when the plant cannot afford to lose its moisture, these cells draw together and close the opening. No evaporation can then take place. On every square inch of leaf surface there are many thousands of these stomata, but they cannot be seen except with a strong magnifying glass. Though so small, they are one of the most important parts of the tree's structure, as without them the tree would have no way of taking up one of the most necessary of its food elements.

Probably most farm boys know how to tell the age of a tree by counting the "rings" on the stump where it was cut down. These rings show very plainly that a layer of woody fiber is added to the tree each year of its life. It sometimes happens that two rings are added in a single year, but this is unusual. In the center of the tree is the darker-colored heart-wood. In this portion the woody fibers are pressed very closely together, and the whole substance is thus

made very hard. Outside the heart-wood is a layer not so dense, known as the "sap-wood." This consists of the last formed layers, and is lighter in color than the central part. As the tree grows, and new layers form, this will become part of the heart-wood. Enclosing the entire trunk is the bark, which is smooth and unbroken in young trees, and rough and broken in old ones.

The tree grows from a layer of young cells between the wood and the bark. The only change that takes place in the heart-wood of a tree is that caused by the pressing together of its fibers by the new growth outside. As these young cells are inside the bark layer, their growth presses outward against the old bark, causing it to crack and become roughened. The new cells that lie next the woody fiber are turned into new sap-wood, while those nearest the bark become the new inner bark. Although the bark grows for as many years as the wood, it is constantly cleaving loose and falling, so never gets as thick as the inside fibers, which have no chance to lose any of their growth.

The roots of the tree are so formed that their tissues correspond with those of the trunk. But the new root growth does not take place the whole length of it, as that of the trunk does. At the tip of the root is a cluster of old cells, called the root-cap, and just behind them is the "growing point," or layer of tender young cells which form the new root tissue. The harder cells of the root-cap protect them,

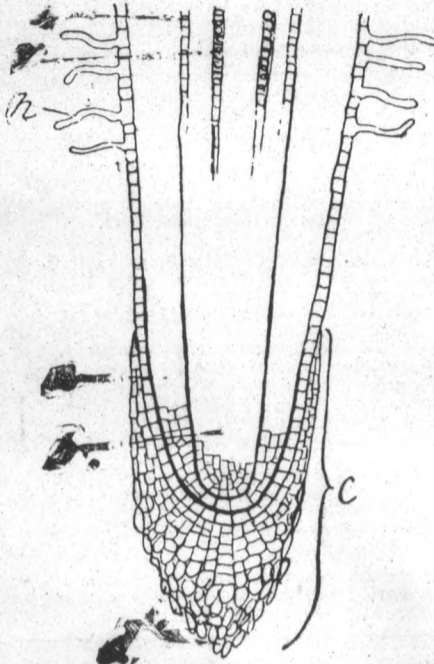


Segment of woody stem, in cross-section.—a, outer bark; b, inner bark; c, cambium layer; d, e, f, g and h, annual rings of wood; i, pith.

as the root pushes down into the ground. Near the growing point the root is covered with tiny, hair-like projections, called "root-hairs," or "fibrillae." These are elongated cells of the newer root tissues, extending to take up from the ground the food which the tree needs. On

the older portion of the root no fibrillae will be seen. From this part branch rootlets, at whose extremities the root-hairs will be found.

The food substances in the soil must be well dissolved in water before the root can take them up, just as the foods we eat must be changed to fluid before the blood can handle them. For just as the blood carries the various food elements to the different parts of the body, after they are dissolved, so the sap, which is the blood of the tree, carries the food which the roots take from the soil to the parts of the tree where they are needed for growth. The sap vessels are, however, very unlike the blood vessels in form.



Longitudinal Section through Apex of a Root.—c, cells constituting root-cap; h, root hairs.

While blood vessels are nearly all alike in being smooth, round tubes, the sap vessels have a great variety of forms. Some are a series of rings, some are full of tiny pits, some are long spirals, and others are a union of two or more of

these forms. All these structures are designed to help the sap in circulating. It has no strong heart beating back of it to push it out through the body of the tree, so the tubes which carry it must be designed so as to help force it through all parts of the trunk and branches. Of course, these sap vessels are most plentiful in the growing parts of the tree.

The substances taken up by the roots and distributed by means of the sap are joined to the gases taken in by the leaves. In some mysterious way the sunlight acts upon these mixed elements so as to fit them for building up the structure of the tree. Much of the water in which the food particles were dissolved escapes from the leaves through evaporation. The part that is left is necessarily more solid. What is not needed for immediate use is stored up for the future as starch, oil, sugar, gum, etc. This change in the nature of the substances taken in goes on in the green cells of the leaves. As sunlight and warmth are necessary for the process, it only continues during that part of the year when these conditions are right. During the winter the tree does not grow. The leaves fall, as there is no use for them, and the whole tree sleeps, as we may say, until the warm sunshine of spring awakens it to new activity. Then the stored foods are once more brought out to feed the growing cells, and the work of adding another layer is begun.

AN EASTER LILY.

BY RUTH RAYMOND.

A pure white lily strove to bloom
One early morn in a bare cold room,
For a little child was sleeping there,
Its face so sad with want and care,
And the lily longed to softly say,
"Come, smile, sweet one, it is Easter Day."

So the bud expanded its petals white
And swayed with joy in the morning light;
The child awoke from a dream of rest
And caught the lily to his breast,
Then said, as he smiled the tears away,
"My flower has bloomed—it is Easter Day!"

ONCE A MORMON.

(Continued from page 446).

"Take care, Elinor, I heard James say the other evening that he did not believe the king was very well pleased with your conduct. You have absented yourself from the services more than once, and James says it is not best to arouse the man's anger. He is getting to be quite a favorite with the king and he says he has hopes of being made an elder in the church. Then he would have a hand in helping to make the laws, perhaps."

"You are ambitious for your husband, I know, Myra, and that is well, but as for making the laws, I supposed the United States government attended to that."

"Not here, my dear. James says that this is to be a kingdom, and that Strang is to be king and govern it himself, and I believe that is true."

"Well, I do not know much about such things," declared Elinor, "but I do not believe it will be allowed." But it was, as she soon learned.

The king had many ideas in his mind that he intended to see carried out, and so completely had he gotten most of the people under his control that they were willing to follow his lead in anything. One thing exacted was that one-tenth of everything they had must be paid into the church treasury. He soon began the erection of a tabernacle for religious worship. This was to be a magnificent building for those times, eighty feet long and made of logs carefully hewed and smoothed on both sides. It would, of course, require some time to complete it. Although the building was not completed, it was decided that, on July eighth, Strang was to be crowned king. The people were greatly excited over the coming event, and the Gentiles, who did not have any belief whatever in Strang, were getting somewhat alarmed, all the more so as they began to miss some of their property and felt sure that the Mormons were taking it without leave.

Elinor was as excited over the coming event as many another, for it was to be a day of festivity and a holiday, and the young people welcomed it as young people are wont to welcome such days. Robert came for her early, and together they walked through the woodland path to the great tabernacle.

"I wanted you to be sure and get inside," he declared, "for it will be a day

long to be remembered by the inhabitants of Beaver island."

He gazed at her admiringly, for she was dressed in a new dress of some soft stuff that fitted her girlish beauty admirably. "You do not mean to adopt the Mormon dress?" he asked.

"No, indeed, it is ugly! Would you wish to see me dressed in that manner?"

"To me you would be fair in anything," he smiled, "but I admit I do not see just why it was adopted. Yet I understand the women are all to be compelled to wear it."

"I never shall," she answered stubbornly, "and I think there are some others."

"Your sister has done so."
"Yes, it seems James wanted she should, but I think she was foolish to humor him."

Robert laughed outright at this. "Then you would not humor a husband in that manner."

"Not I," she answered, while the dimples came as she glanced at him roguishly. "But see, we are nearly there and the crowd has already begun to gather. Do you suppose we will get a good place?"

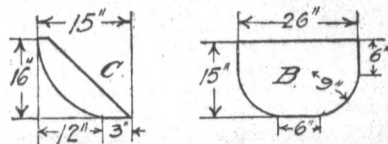
"We will try at least." They did obtain a good place to see, for Robert was strong and he carefully elbowed his way into the crowd, closely followed by his companion.

(To be continued).

MAKING A CANVAS CANOE.

Every ingenious boy who is fond of the water will be interested in the following description of a canvas canoe made by two of our young readers:

For the keel, a piece of wood 3/4 inch thick, 5 inches wide, and 11 ft. 6 in. long, was tapered at the ends for about one foot, as shown in Fig. 1. Two pieces like

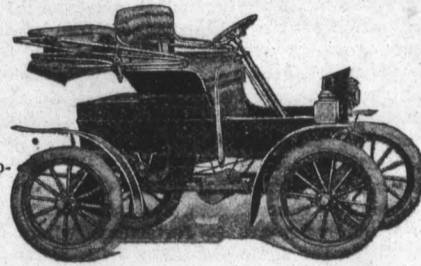


C in first cut, also Fig. II, c c, for the stem and stern posts, were made from 3/4-inch or 7/8-inch boards. The inside depth of the canoe is 17 inches at each end, and 16 inches at the middle. The total length over all is 13 ft. 6 in. The

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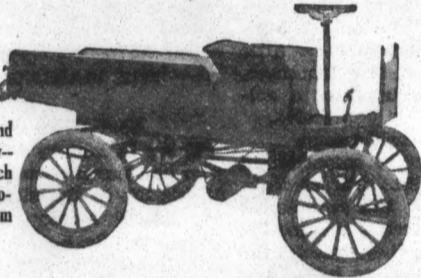
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There are no "minor parts" on the HARDA; nothing to adjust, keep in tune or bother with. Given gasoline and a hot spark to fire the mixture, and the owner of a HARDA has the simplest running motor in the "A Gentleman's Car" world. That's why the HARDA is well named.

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The Worthmore, all pure cotton felt Mattress, is as far ahead of them as the Automobile is ahead of "The Deacon's One Horse Shay."

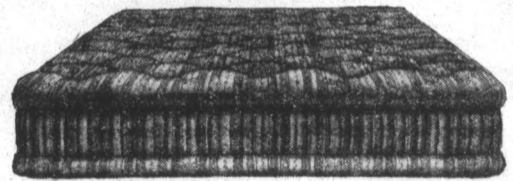
We want to prove to the "calamity howlers" that you as readers of this paper, have the progressive spirit and want a modern, well built, comfortable Mattress—just the same as the city wife and her family enjoy.

But we can't prove this without your help. So send today, RIGHT NOW for free tick samples and illustrated folder which describes every detail of this truly, greatest of all Mattress values. No obligation on your part. Address.

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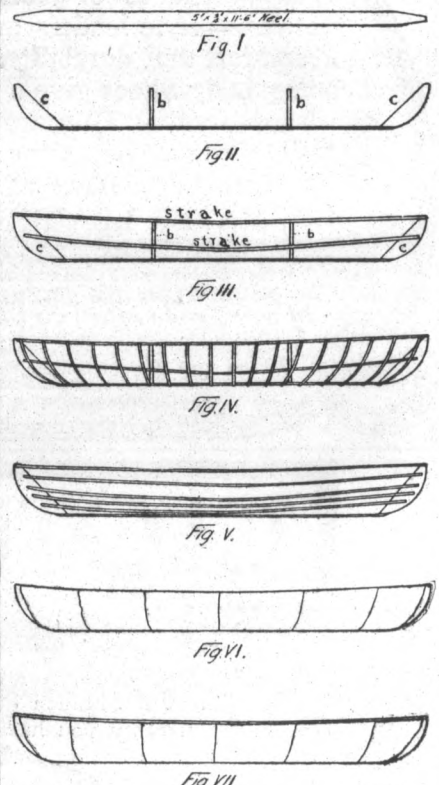
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pieces marked C will therefore be 16 inches high and about 15 inches wide, measured on the horizontal and vertical lines as shown.

Two false partitions like B in first cut, also Fig. II, b, b, are made from the same kind of boards, 15 inches high and 26 inches across. The two sides and the bottom of these boards have 6 inches of straight part, the round corners being 9 inches radius.

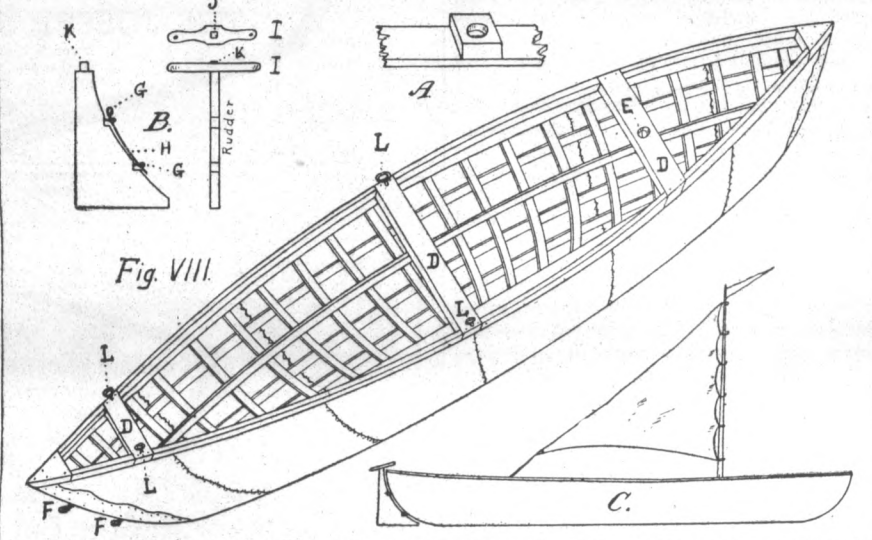
These partitions and end posts can be easily shaped with a saw, or even a jack-knife. They are secured to the keel, Fig.



I, as shown in Fig. II, b, b, c, c, dividing the boat into three equal parts.

The nails holding the false partitions are not driven home, for when the ribs and strakes, Fig. III, b, and Fig. V, are nailed together, the partitions are removed, their purpose being merely to get the proper shape of the boat.

Two lengths of 1 1/2 x 1/2-inch pine strips are nailed to the stem and stern posts and lightly to the top corners of the false



partitions, as shown in Fig. III. Two more pine strips, 1 x 3/8-inch, Fig. III, b, are nailed to about the middle of the stem and stern posts, and to the middle of the round parts of the partitions. It will be well further to secure these strips to the posts by placing a wedge-shaped block between, and winding a piece of copper wire around, as shown at F, in cut at bottom of page. A true section through the center of the boat is given at G in the same cut.

The most difficult part of the boat building is the next step, putting on the ribs. These are made from barrel hoops.

They are about 9 inches apart from stem to stern, and secured with brass screws or copper nails.

The ribs in the center of the boat are bent into shape like the partitions, but near the stem and stern they are straighter, becoming perfectly straight at the ends.

Fig. IV shows the ribs, and Fig. V what are called the strakes, which are secured to the ribs or barrel hoops with copper nails.

Care must be taken to get the ribs and strakes symmetrical from stem to stern, or the boat will not balance properly. When the copper nails are being driven through the junctions of the ribs and the strakes, another hammer should be held on the inside of the connections to clinch the nails and make the framework more rigid. There are eleven strakes, evenly distributed in the middle as shown in the cross section of the boat at G.

Everything is now ready for the canvas, which in this case was made from old awnings, but almost any kind of strong canvas will do. The false partitions, Fig. II, b, b, are removed, and the canvas stretched over the top, as shown at G and in larger detail at E in the same cut. This is done before the top strip, called the gunwale, is nailed on.

The canvas should be put on in widths, commencing at the middle of the boat, and cut to fit. The widths should be stitched together.

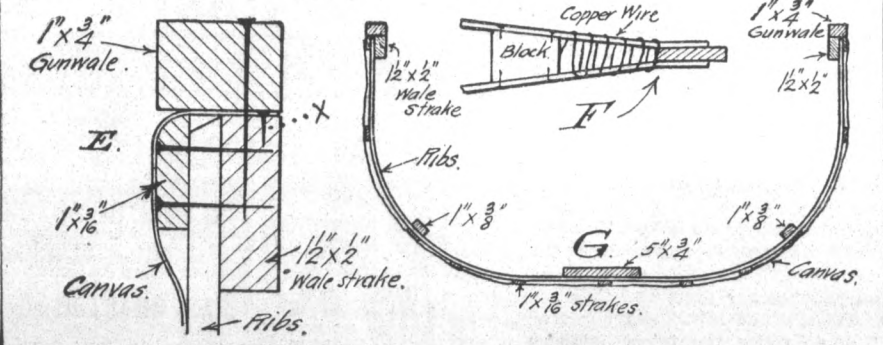
The only tacks necessary are along the top of the wale strake (see E, x) and at the stem and stern of the boat. The canvas must be wet, and perfectly stretched by pulling hard and not letting go of your hold until enough tacks are driven in to hold it.

Fig. VI shows the boat without the gunwale, and Fig. VII the boat complete.

A seat or two nailed to the 1 x 3/8-inch strips will help in bracing the sides, although to kneel or sit in the bottom of the boat is good enough. Paddles, much like half an oar, can be whittled out of ash boards.

The strips of wood for the strakes, gunwales, etc., can usually be had for the asking at any saw mill, thus saving much time in sawing them out with a rip-saw from a plank or board.

Fig. VIII shows the same kind of boat turned into a sail boat. Three strips of wood, D, D, D, 3/4 x 1/2 inches, are nailed



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of the stern. The cross-bar, I, 13½ inches long by 2½ inches wide, is whittled out of a piece of wood, a square hole, J, being made in the center to match the square end, or rudder stock, K, K, of the rudder. The screw-eyes, L, L, shown in the strips of wood across the top of the boat are for the rudder guide ropes.

These boys made a very simple "leg of mutton" sail from sheeting, bound on the three sides with light rope, and fastened to the mast with wire rings. An eyelet was made in the lower corner for a short length of rope, called the sheet-rope. The mast was only five or six feet in height, no attempt whatever being made to get proper proportions, either in mast or sail. This boat was sailed very successfully on a large fresh water lake.

A FURY IN FEATHERS.

BY JENNIE E. STEWART.

"Mary," called mother, from the kitchen doorway, "do you think you could possibly find me a few more fresh eggs for your birthday cake?"

"I'll try, mother," I promised cheerfully from my swing where I had been working up power till I could just reach the tops of the tall lilac bushes with the tips of my bare brown toes.

"I'll let the old cat die," I whispered, wondering vaguely where I should search further for hidden nests.

While my swing glided back and forth in an ever-decreasing arc, I happened to spy old Topknot slipping along in the tall grass beside the corner, finally disappearing altogether. I had known for weeks that Topknot had stolen her nest somewhere but all my careful searching had failed to detect her hiding place. Giving the "old cat" a rather sudden jolt into eternity, I skipped at once to the spot where Topknot had slipped from my sight and, sure enough, there was a hole just large enough to admit the slender body of a mite like Topknot.

Entering the granary, I peered through every crack in the floor until I discovered the brown back of the hen rising above a low depression, and knew by the way she was wriggling her small body about with well spread wings that she was sitting on a full nest of eggs.

Anxious to find how many she had, and how soon we could expect the chickens to hatch, I pried at a plank without being able to move it. While thus engaged I discovered a second nest filled with fresh appearing eggs not far from the first.

I was now all the more determined to get at the nests, so I tugged and pried at every board in the floor until I found one at the further end which I could raise, leaving an opening large enough for me to slip my long lean body through.

Beneath the granary I had to do a great deal of wriggling, first under one joist then another, before I came near enough to Topknot to reach out with a lath, pry her up and see what she had beneath her. The nest was full, and by the shiny appearance and the clangy sound they gave forth I knew they were about ready to hatch. My heart beat high with joy, for all chicks hatched in stolen nests were regarded as my especial property.

As long as my stick was beneath her disturbing her eggs, Topknot stuck closely to her nest, scolding and fussing, trying to protect them as best she could, but as soon as I desisted and attempted to work my way up to the other nest she shot like an arrow, straight for my face. I was in pretty close quarters by this time and could get but one arm free to defend myself, the other being doubled back beneath my body.

The little fury would back off a few feet and come at me with lowered wings, striking stinging blows with wings and beak, and I am not sure but she used her sharp little claws, too. She stirred up such a stifling dust in the dry dirt that I could not open my eyes to see, even if there had been anything I could do to fight her off. I had no idea a tiny hen could strike such sharp blows with her wings.

I was soon compelled to curve my arm about my head to protect my face, and let her batter away while I tried to back out. This was not so easy as I had thought. My skirts, which my forward movements had kept stretched smoothly back, now that I tried to move in the opposite direction, rolled up in a tight wad and wedged me in so tightly that I could not move an inch. There was no chance to move sideways because of the joists which here came so close to the ground as to barely allow Topknot passage beneath; I could only bury my face in my arm, which was already bruised,

scratched and bleeding, and call for help. I soon abandoned this idea, for I knew mother was busy in the kitchen quite a distance away and the men all in the fields; besides, my noise only made the hen more furious.

After I ceased my cries and lay perfectly still, the hen gradually gave up the fight and returned to her eggs, crooning, wriggling and shuffling them about, all the time keeping a belligerent eye upon me.

I was sore from my beating and cramped from the narrow quarters, therefore when Biddy settled down quietly I began to cast about for a way out of my predicament.

Topknot's nest was on the other side of a joist from me and I believed that if I could sweep the loose dirt up against the narrow opening that separated her compartment from mine, so that she could no longer see me, she would remain quietly upon her eggs while I managed some way to work my way out.

To this end I commenced, with my free arm, to scoop the dirt, with long slow sweeps so as to attract as little attention as possible, up against the joist.

Once or twice, as my movements became less cautious, the hen slid towards me with ruffled feathers, but a sharp blow on the legs with the lath I had again secured sent her fussing back to her eggs.

As I worked forward the hollowed out space afforded me greater freedom of movement, and when I reached the nest of fresh eggs I placed them carefully in the little basket I had been tumbling ahead of me for the purpose. But I was not out yet.

There was no room for me to turn around; to back out was impossible; I saw that I must dig my way under the next joist so, beginning in the depression that ran at right angles to the joist, I soon had an opening large enough to squirm through.

I was now headed in the right direction to creep out head first with my precious basket of eggs. I had reached the place where the receding character of the ground rendered my progress quite easy when suddenly I felt a stinging rain of blows on my bare legs, and I knew that I had come once more within the range of Topknot's vision and she was making a rear attack. I could sit up almost straight by this time, so, gathering my feet beneath my skirts I dealt the hen some stout blows with my fist that soon sent her, scolding angrily, once more to her nest, while I crept out into the yellow sunshine, feeling as though I had been away a week.

I felt hurt that mother expressed more delight at the sight of the fresh eggs than she did at the safe return of her little daughter, but when her glance fell upon my torn and dusty clothing, my scratched and bleeding arm, she cried, "Sakes alive, child, where have you been?"

Then I sobbed out the whole story in mother's arms, and when I looked up at last to dry my tears I found mother's eyes as wet as my own.

Topknot came off in a few days with fourteen as lively chicks as hen ever owned. It is needless to say that no rat or other nightly marauder ever succeeded in stealing one of them from her.

SMILE PROVOKERS.

"My ancestors came over on the Mayflower."

"That's nothing; my father descended from an aeroplane."

"John!" she exclaimed, jabbing her elbow into his ribs at 2:17 a. m., "did you lock the kitchen door?"

And John, who is inner guard and was just then dreaming over last evening's lodge meeting, sprang up in bed; made the proper sign and responded: "Worthy Ruler, our portals are guarded."

A certain militant suffragist in West Philadelphia has a seven-year-old daughter who has imbibed her mother's principles with regard to the intellectual efficiency of women.

In school the other day the teacher was telling the class—made up equally of boys and girls—something about hens.

"You can't teach a hen anything," she said. "You can teach a dog or a cat, but you can't teach a hen. There is nothing quite so stupid as a hen."

The suffragist's daughter threw her curly head back defiantly, and contradicted the teacher then and there.

"That's not fair," she burst out, "and I don't think it's true. I guess a hen knows every bit as much as a rooster."

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Woman and Her Needs

At Home and Elsewhere

The One Lack That Means Discontent.

THAT was an unkind cut given to women by W. L. L., of Pontiac, in a recent contribution to the "Letter Box."

He says that he knows college girls who are happy and contented on the farm, and then takes all the honey out of his remark by adding, parenthetically, "If that state or condition is possible to womankind."

That seems to be an attitude of mind common to men, the belief that women, as a rule, are discontented. At least, most men affect that attitude, but whether it is real or posed I scarcely know. Whatever the cause that prompts men to assume it, it is a belief they should part with for there isn't enough truth in it to make it tenable.

Granted, there are a great many discontented women in the world. There are just as many contented ones, probably more, if the truth were only known. The trouble is we never hear from the contented ones, while the discontented ones are always talking. Isn't that a trait of human nature? Even in babyhood we see it. Give a baby everything it wants and it is quiet. But what an uproar it makes if it doesn't get what it wants. The same rule applies to women. Women who have everything they want are contented and quiet. They make no fuss, whatever, and because they do not call attention to themselves they are overlooked and their contentment and happiness pass by unnoticed. But the women who do not have what they desire, even if it is something they are not in need of, are constantly attracting the attention of everyone to their grievances.

I have a theory about the discontent of women which may or may not be right. From my study of the contented and the discontented alike I have come to believe that there is only one thing missing in the lives of the latter class to make them like the former, and that is love. No, I am not sentimental, nor a dreamer, but I do believe that love is the only thing in the world that is worth while. Not the moonshiny stuff that fiction writers try to palm off on us for the real thing, but the good old bed-rock variety. The love of husband and wife, after ten years of real living together; the love of a mother for her children and of the child for the parents; the love of friend for friend that means sacrifice and loyalty, this is the sort of love that the discontented woman is missing.

Perhaps her husband and children love her enough, but she hasn't the right sort of love for them. It may be she is not capable of a deep love, unfortunately many people aren't. Selfishness may be so deeply ingrained in her nature that she can't love anyone better than herself, and if so her case is hopeless. Or it may be she married the wrong man or made the mistake of marrying for a home. Whatever it is, the love she should feel for her husband and family is not there, and discontent follows as a natural result. The love her family bestows upon her cannot satisfy her, for love is such a queer thing it must be bestowed on others if it is to bring us happiness. It, more than any other gift, is a thing to be shared and not simply received if it is to bring happiness.

Perhaps my theory is wrong, but among the women I know the happiest and most contented ones are the loving ones, the ones who are devoted to their homes and their families. I have noticed over and over that the woman who is pitied by her friends because she is tied down with children and housework, is ten times happier than those same friends who spend their time running from card parties to theaters, from luncheons to balls, in pursuit of that elusive thing called happiness.

"Curved is the line of beauty,
Straight is the line of duty.
Follow the one and thou shalt see
The other will always follow thee."

So happiness, which is a form of beauty, follows in the wake of the woman who chooses duty. Material possessions bring pleasure in a way, but pleasure and

happiness are very dissimilar. And of what value is money without love? As a wise man says, "Better is a dinner of herbs where love is, than a stalled ox and hatred therewith."

DEBORAH.

EASTER NOVELTIES.

BY MRS. W. K. LAMB.

Dainty and unique Easter gifts may be made by a combination of tissue paper and egg shells. Empty the egg shell through a small hole in one end. Place



a few shots in the shell and a spoonful of plaster Paris to hold them in place so that the egg shell balances on one end. Draw a droll little face on one side, fasten a pointed cap of gay crepe or

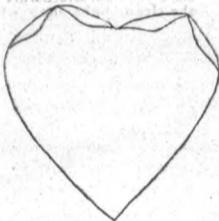
tissue paper on the top and you have something to delight the little folks. Cut from tissue paper of pale pink or yellow, heart-shaped petals about two inches wide and two and a half long. Curl the upper edges of each so as to resemble a rose petal by drawing between the thumb and a dull knife.

Arrange five petals in a semi-circle, curled edges in and overlapping one another and fasten with library paste. Now take half an egg shell, a white one if you have it, and not too large, draw a pretty little face on the end and arrange the five petals around it so that the face peeps out of the center.

Draw the lower ends together and attach a fine wire for a stem. Then around the stem arrange other petals to give it the appearance of a half-blown rose, using library paste to fasten them.

Make a calyx by slashing a piece of olive green paper $2\frac{1}{2} \times 1\frac{1}{2}$ inches into five strips, leaving them attached on one end. With thumb and finger twist up each of the strips until they resemble the sections of a rose calyx.

Arrange it around the stem close to the petals and wind the stem with a strip of green paper of same shade. If you have some foliage a rose leaf or two would add greatly to the flower. Paper Easter lilies, daffodils and large pansies may be made in the same way and are always novelties among Easter remembrances.



you have some foliage a rose leaf or two would add greatly to the flower.

Paper Easter lilies, daffodils and large pansies may be made in the same way and are always novelties among Easter remembrances.

TESTING FABRICS.

BY LALIA MITCHELL.

In these days of "near" silk and linen and clever imitations of all kinds of goods, the woman who can make a purchase and yet be absolutely certain what she is buying, needs more than the wisdom of a Solomon. Where samples are taken home to be tested her chances are somewhat better, especially if she be versed in a few simple and yet reliable tests.

Ravel a thread from the material to be tested and touch a match to it. Cotton burns quickly and without any odor; linen burns much like cotton but leaves a finer ash, and is also odorless; silk

burns less freely than cotton but more rapidly than wool and has a slight odor, which, however, differs from the wool odor; wool burns slowly, the thread shrivelling before the flame, and it also has an unmistakable odor. For an infallible test, put four or five teaspoonfuls of lye in a dish and add a very little water. In this put a few threads of the fabric to be tested. Let stand a few minutes and strain through a fine sieve. The threads will retain their form if of cotton or linen but if of silk or wool will have been eaten by the lye.

FOR EASTER.

BY GENEVA M. SEWELL.

Easter tide is a time so given to sweet and holy thoughts, that the custom of giving some little token of affection in remembrance of the day is appropriate, as well as pleasant. The children will take delight in making various articles from egg shells and will also love to color the eggs. For five cents you can get a package of Easter egg dyes at the drug stores and these will last several years.

For some weeks before Easter save all the egg shells by making a hole in the small end and shaking the contents out. If the eggs are to be cooked try and break them as slightly as possible on one end. This will leave a large part of the shell, which I will tell you how to use.

Dye the empty egg shells any preferred color, but first write some name or make a star on the shell with lard. This greasy place will not take the dye and will be white. When the dye is dry rub the egg well all over, spreading the grease over it to give it a polish, then through the small opening pour clean white sand until two-thirds full, then paste a piece of paper over the opening and you have a fine paper weight for papa's or grandpa's desk. It will set up on the end where you put the paper and the sand keeps it in position. Make as many of these as you like. You can make each one a different color, or color one, two or three colors by greasing the place you want left, then washing the grease off and dying that part.

A very dainty little gift is made from one of the large halves of the eggs which have been broken open. Break or chip the edges in a notchy form, then rinse the inside out with a pink dye, making it a pale pink, then glue it fast to a round piece of blotting paper which has the edges turned up and crimped. The outside may be dyed in a dainty blue with a border of dark red at the top. A handle may be made out of a narrow strip of paper and glued in place. A teapot may be made from a whole egg shell with a lid drawn on in dyes, a small twist of paper glued on for a spout and handle and legs glued on, these are made out of rather stiff paper cut in hollow tube shape for the legs and the upper part spread out to glue on the shell. Outline all the edges with dye. A cream pitcher and sugar bowl may be made to go with the set. These are easily made and very pretty.

A match catcher may also be made from a half egg shell glued onto a piece of cardboard. This may be filled with some candy or a pretty ribbon or a ring may be placed in it. Egg shells also make fine cradles for tiny baby dolls. The upper part is left on the egg, laying on its side, to form the hood part. All the opening is dyed as well as the inside then all lined with pink or blue cotton like jewelers use and the baby snugly tucked in it. Any little girl will like several of these.

Do not imagine that this work is too complicated to do, for I know of several small children that have made all these things and been very happy in the making. Just help them a little and tell them how.

To make starch stiff and glossy, add one teaspoon of powdered borax to about four quarts of starch.—I. O.

If you have some of the old lamp brackets laid away, the kind with a ring which the lamp set down into, try them for plant brackets. If the saucer of the plant jar doesn't fit a small plate may be set on first.—M. M. N.



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AN EASTER PARTY—BY MARJORIE MARCH

APRIL gives the entertainer the feast day of Easter around which many pretty customs cling, and hospitality wears the dress of springtime with gala air. It is not difficult to make a clever entertainment at this season of the year, and with home-made

an egg-shaped box or one decorated with little chicks or tied about with some bright tinted ribbon in harmony with the spirit of the season.

A Yellow and Violet Table.

Over a yellow undercloth stretch one of white net. As a centerpiece have a



Chocolate Sponge Dessert Decorated with Chicks. Daffodils in Background.

favours, or with those bought for a small price in any favor shop, the table may be bright with trifles significant of the Easter season.

Our illustrations show two pretty table effects. One depicts a tray with chocolate dessert molds, a fluffy yellow chick mounted guard on top of each. A vase at the back holds the gay daffodils which seem like the captured sunshine when first they smile in the springtime.

The second shows a dish that would be suitable at any Easter party—a dish of Easter croquettes—made from chicken or any preferred meat, nestled in a bed of parsley. An ornamental basket jardiniere with an Easter lily shows at the right in the background.

For an Easter party send out invitations on Easter cards, which may be found in plentiful assortment in the shops, on Easter postcards, or on cards cut in the shape of eggs, chickens or any suggestive shape symbolic of the season. Cards cut to represent baskets with flowers pasted to their back (the picture flowers which can be bought by the card) make very dainty invitations and the bidding itself can be written on the basket portion.

Another novel idea is to send each guest one of the little Easter egg boxes which, when opened, will find a little note of invitation to an "egg party" within.

When the guests arrive a pleasant form of amusement is to give each guest an egg shaped box or envelopes which contain a "picture puzzle." If the regulation picture puzzles can not be obtained any bright-colored pictures pasted on cardboard can be cut into a puzzle by the use of a sharp knife. The guests can work singly or in couples, as preferred, and a prize can be given the one who puts her picture together soonest. The puzzles should be of about the same size, of course, to make the contest equal. Pictures relating to Easter time, chickens, chicks in a basket, Easter lilies or any such design would be suitable. The prizes can be suggestive of the season also. A bunch of ribbon flowers for the hair, a picture of flowers or a real little potted plant, a stickpin in Easter lily or violet shape—these are just a few suggestions. Or a more simple prize would be a box of home-made candy, preferably

bowl of yellow glass filled with violets and their leaves. Little baskets, gilded, can hold the bonbons and the place cards may be simple home-made ones, with a gilded edge, a spray of violets tied to one corner of the card by means of a golden cord.

Another centerpiece that is altogether lovely is to have a big bunch of ferns hung from the chandelier by means of a violet ribbon bow, and drooping from this can be little bunches of violets suspended by green baby ribbons of varying length.

A Green and White Table.

A table set with a spotless white cloth with two runners of smilax laid over the cloth makes a dainty and simple appearance. The centerpiece should be a graceful green basket filled with pure white lily blooms or dainty narcissi. Or a pot painted white can hold a lily or any bulbous plant, the pot being tied about with a green ribbon. Tinted egg shells can hang from the chandelier to the four edges of the table, strung on baby ribbons, a knot in the ribbon keeping each egg shell from slipping from its designed place. Egg shells tinted green and each holding a wee fern make dainty little souvenirs at the places.

With Easter Chicks.

A basket filled with straw, holding a large-sized box, eggs or candy eggs as desired, makes a pretty centerpiece and one easily arranged, and fluffy little chicks can mount guard either on the edge of the basket or on the basket's handle.

Plain white cards with the guest's name may be at the places, a wee cotton chick stuck to the corner of each card by a drop of mucilage. The bonbon boxes may be simple boxes lined with crepe paper, with a little chick perched on one edge. Such decorations are very easy to make, cost very little and give a daintiness to the Easter table that is sure to be appreciated by one's guests.

Preserve the egg shape also in the serving of viands. Croquettes can be moulded in that design, as in our illustration. Round cakes can be iced together to form egg-shaped cakes and may be served nestled in a bed of whipped cream for dessert, and in many ways of this sort the traditions of the day can be maintained by simple devices.

Where economy holds sway and it is not possible even to buy the little favors suggested above, let me suggest that a plain iced cake, baked in a turkshead tin, makes a pretty centerpiece. A few ferns or one or two blossoms from the window garden may grace the central hole, and a frill of crepe paper form a mat for the cake to rest upon.

At the places, home-made candy boxes lined with crepe paper can hold home-made candy which makes the nicest of Easter gifts, or tiny flower pots may be gilded, filled with candy and have a little home-made paper flower stuck in the top of each flower pot. Oranges opened like daisies with a daffodil or jonquil stuck in the top of each, make a fruit course that is as pretty as any springtime dish could be.

I give below a number of recipes that are simple and suitable for this season of the year. Let the spirit of newness enter the home and the hearts of those who appreciate that "Now is the Day of Joyfulness." The peace which comes from hospitality and cheer may "rise indeed" from such hearts, which should be thrilling with the sense of springtime's resurrection.

Chicken Mousse.

To one cup of white meat of chicken add a tablespoonful of minced ham and one cup of stock or gravy with the beaten yolks of two eggs. Cook just a little and set to one side to cool. Turn in a tablespoonful of gelatine which has soaked in a very little water, also one cup of whipped cream and the beaten whites of the two eggs. Add a very little salt. Beat all well together, put in moulds and set on the ice for several hours until wanted. Serve on lettuce leaves. This recipe is dainty enough for any reception or wedding breakfast. If desired the moulds may be oval so that the egg shape is suggested when the mousse is turned out.

Chicken with Veal.

Cut cooked chicken in small pieces and add an equal amount of cold roast veal. Heat one cup of chicken soup and season to taste, with salt, pepper and a little mustard. Add the chicken and veal and let cook for five or six minutes and then add three tablespoonfuls of currant jelly. Serve hot, garnished with parsley.

Baked Apple Dumpling.

Make a delicious crust of one cup of cream, one heaping teaspoonful of baking powder, salt, and flour to roll. Cut in rounds or squares. Have sliced apples and put some on each crust, covering with cinnamon and sugar to taste. Bake in a hot oven and serve with cream or whipped cream.

Nut Eggs.

Cream one cupful of granulated sugar and one-half cup of butter and add grad-

ually one cupful chopped nutmeats. Add one beaten egg and gradually one and three-fourths cups of flour with two teaspoonfuls of baking powder, alternately with one-half cup of strong, clear coffee. Bake in oval patty pans and frost with Mocha frosting. Serve in a ring of ice cream or in a nest of green leaves.

Strawberry Omelet.

Beat the yolks of six eggs very light, with a heaping teaspoonful of powdered sugar. Into this stir one teaspoonful of cornstarch, dissolved in three tablespoonfuls of cream. Add the beaten whites of the eggs. Fry in a hot omelet pan, spread with fresh strawberries—(or strawberry jam as preferred), fold and sprinkle over with powdered sugar.

Strawberry Ice Cream.

To one quart of preserved strawberries add one quart of thin cream and two cups of granulated sugar (one of sugar, only, if preserves are very sweet), boiled with one-half cup of water to a syrup. Mix well, strain and freeze. Pack in small moulds in flower pot shapes and put an Easter lily or jonquil in the top of each when unmoulded. The same recipe may be made with preserved peaches or pineapples. Jonquils or daffodils look better when used with these fruits, and the Easter lily or paper narcissus, or a pink rose, if the strawberry is used.

Preserved Cherry and Nut Salad.

Stone some canned cherries and insert a nut meat in each cherry. Serve on lettuce leaves with mayonnaise dressing on top of each portion.

WOMEN'S CONGRESS.

The women's congress was held in the agricultural building, Miss Gilchrist presiding at the first session. Miss Fern Liverance rendered a piano solo, and responded to an encore. Miss Gilchrist bade them welcome and then introduced the first speaker of the afternoon, Mrs. H. H. Fulcher, of St. Louis, Mich., who gave a talk on "The Parent's Obligations to the Child." This talk was pronounced one of the best of the kind that had ever been given at the Round-up. Mrs. F. D. Saunders, of Rockford, and Mrs. Munroe discussed the paper.

"The Prevention of Infant Mortality" had been assigned to Mrs. C. L. Barber, of Lansing. Mrs. Barber being called away the subject was discussed by Dr. Chas. E. Marshall, of the M. A. C. Dr. Marshall stated that infant mortality had caused more or less consternation, especially the mortality of children under one year of age. He drew attention to the fact that new forces have tended toward a gradual elimination of children from the upper classes, and to large families from the lower classes. Increase



Easter Croquettes. Easter Lilies in Basket Jardiniere.

In population has come largely from the lower classes. He added that Dr. Cressy Wilbur, of the New York census department, has called attention to the fact that as we grow better there is a gradual dying out and population grows from the lower classes. In pioneer times conditions existing in the home were quite different from the present. At that time there was the home circle, and the home was the unit. Not so much the community unit. The home life built character differently. These community duties are essential.

What influence has this had on infant mortality? Are interests centered so much in the home? You are going to spend so much energy. If you spend 50 per cent of your energy outside of the home, you are not going to spend so much in the home. You are taking 50 per cent out of your home.

How far we are to carry this is still another problem. The matter of congenital diseases transmitted from parent to offspring is a matter worthy of considerable attention. Asylums are filled largely because of diseases transmitted. We all have very vague notions concerning heredity. Parents transmit to their offspring health or disease. Tuberculosis shows instances of mother and father succumbing to the disease, then all the children. How much is heredity and how much something else, transmitted susceptibility, and disease acquired after birth? In heredity animals differ. As far as contagion is concerned individuals differ in contracting a disease. In infant mortality the food of the child is responsible to a great extent. Mortality is often traced back to milk. In pioneer times milk was used fresh, now it often stands 24 to 36 hours. Hauling, standing, and handling milk are sources of contamination. In Rochester, N. Y., it has been determined that milk is the cause of high death rate. Skin diseases are often caused by improper quality of food, or wrong care of the child. Any mother knows that if a child is not cared for every day, and nearly every hour, skin diseases result. Heredity gives a predisposition to disease. Congenital diseases are more often the cause of infant mortality than unsanitary conditions. To sum it up we must look for causes of high mortality among children, to dress, dissipation, conditions of society, heredity, feeding, and congenital diseases.

Miss Jennie Buell then followed the discussion with a talk on "Health and Heredity in Home and School."

Practical demonstrations in bacteriology were given Friday morning in the bacteriological laboratory under the supervision of Dr. Marshall, and carried out by Miss Farrand and Miss Northrup. Miss Farrand spoke of the common article of our diet known for ages back even before Bible times, capable of sustaining life longer than anything else excepting milk, referring, of course, to bread. She then gave a talk on its composition and making. Regarding cucumber pickles Miss Farrand said to place the pickles in a strong brine, then cover with a cloth and plate and over this a weight. Skim off every few days. Pour over this paraffin oil, or make air tight after fermentation is over. The pickles will keep better if not exposed to the air and are less apt to soften. The experiment station aims to find a germ and inoculate the large tanks in pickle factories, thus securing a fine-keeping pickle.

Miss Northrup then took up the subject of milk, showing how it may become contaminated. This is found first in the barn where the milking is done. Cow hairs often fall in the pail and particles of manure from the cow's flanks drop off. Tubes and plates were then passed around showing the effect of the contamination of milk from these sources, and the development of growths of a few germs from refuse and litter. Colonies spring from these germs. Often milkers brush cows just before milking and stir up dust particles, all containing, or having upon their surface, harmful germs. In order to keep milk from getting dust don't loosen dust particles. The new pails are an improvement, having a small opening. Plates were next exhibited showing germs and growth of the dust particles that fall in one minute under ordinary conditions in an open top milk pail, and growths from a single germ and the colonies that develop from one single germ.

The question was asked, "Are germs always poisonous?" Miss Northrup replied, "Not always; they are sometimes harmless." Another source from which germs may come is the milker. A milker should have clean habits and wear clean

clothes. At M. A. C. and in many other dairies, milkers wear clean white clothes, and it is easily noticed if they are soiled. Some milkers, in order to facilitate milking, wet their hands in milk or even saliva and pollutions are carried into the milk. In order to keep clean milk, rub off the cows' flanks and udder with a damp cloth. If not, the dry germs will fall into the milk. If the milker has a disease of any kind, as tuberculosis, the germs are liable to fall into the milk. With skin diseases, particles from the hands may drop into the milk. Such diseases as typhoid fever, scarlatina, diphtheria, catarrh, cholera, etc., may be transmitted by milk. Pails should always be of metal, never of wood, which, being porous absorbs such bacteria as needs moisture for development. A demonstration was then given showing the effects of carelessly washed pails, pitchers, and bottles used for holding milk. Cleanliness must be observed in bedding, stalls, floor, kind of drainage, and general construction of stalls. In sterilizing milk all germs are killed, the temperature reading 212 degrees, Fahrenheit. In pasteurizing, the milk must reach 165-170 degrees and be kept there 20 minutes or longer to destroy micro-organisms. The question was asked, "Why is pasteurized milk better for babies than sterilized?" and the answer was that sterilization produces such changes that it is hard to digest.

Mrs. Stockman asked, under general conditions, if travelling for a few days with a baby on a milk diet, would it not be better to sterilize than to pasteurize the milk?" "If it is to be kept a long time it would be better to sterilize, if for a short time, pasteurizing would be better, as it does not render the milk so indigestible," was the reply.

Some samples of milk were then shown. Red milk is not always bloody but is caused by bacteria. Blue milk is caused by an organism not harmful, but makes the milk unpalatable, more from an aesthetic sense than from any other reasons. Fermented milk is supposed to be healthful. The longevity of the people of Bulgaria has been attributed to this. Koumiss may be made artificially by adding cane sugar to milk. Cooling milk with pure ice does not curdle it as it has few germs. A cloth strainer is the best, cheaper and more efficient. Milk should never be covered when warm.

At the Friday afternoon session Mrs. E. J. Creyts, chairman, Miss Grace Scott gave a piano solo and Mrs. Emma A. Campbell, Ypsilanti, an address on "Household Management." Then followed two selections by the choir from the Industrial School, and two readings by Miss Nettie Kull, of Lansing. Miss Ida Chitenden gave a very practical paper on "Business Methods for Farmers' Wives." This was ably discussed by Mrs. Rose, of Frankfort, and Mrs. F. D. Saunders, of Rockford. The "Home Reading Table" was given by Mrs. Carlton W. Scott, of Rapid City, and was discussed by Mrs. Bogue, Mrs. Stockman, Mrs. Hume and others.

The following resolution was passed and a copy forwarded to Mr. Barnum at his home in Charlotte.

East Lansing, March 3, 1911.

"We, the ladies of the Women's Congress of the Round-up Institute desire to express our sympathy to Mr. Barnum in this time of bereavement, caused by the going away of Mrs. Barnum.

"Hers was a life of helpful service, that reaching out blessed all she touched. Yet we cannot but believe that in the Great Beyond, unhampered by earthly limitations, her life will reach the glorious fruition promised here."

NEW STYLES AND COLORS.

The most noticeable feature of spring fashion tendencies is the use of black. A touch of black is seen on everything, a black band on a skirt, a black wing on a hat, black beadings, or black and white stripes. Everywhere there is black, and after a few seasons without this touch of midnight, the effect is pleasing because of its newness. We are to thank the English court for the fashion, mourning for the late king making black essential in that particular social set. Black and white stripes in silks and suitings are very good.

This is a season of stripes. Striped silks with plain borders are shown for milady's gown; striped percales for the children's suits; striped madras, in colors and in white, striped gingham, lawns and dimities for shirtwaists, and the hair line stripes, a white cloth with a fine black stripe, for suitings.

Linene is the name of a fabric that is much used for inexpensive shirtwaists. As the name would lead you to think, it is somewhat like linen in appearance, though it is really cotton. It is much liked because it does not crush. Linon is another cousin of linen, and then, of course, linen itself is shown. The popular linens this summer are fine.

The modish suit is of satin, either black or dark blue. Long coats of satin are extremely good, too, and of brocade silk as well. In cloth suits, French and storm serges lead in popularity, black and dark blue being chosen colors here also. English suitings in gray or tan, which have been good all winter, still remain in favor.

Sheer goods are to the fore this summer and cotton voiles promise to have an unusual popularity.

The new hats are really pretty and becoming, on the whole, though, of course, there are a few freak styles. Turbans and sailors reign in the ready-to-wear



hats. These are of Milan and of coarse straw and are little trimmed, as becomes the street hat. The dress hats still groan with a burden of plumes, though flowers are used to some extent, small rosebuds being especially good.

Coral is one of the leading new colors. Then there is Helen pink, coronation blue, and Rostand green. These, with the popular black and white and dark blue offer a pleasing variety.

SOME HELPS FOR CROCHET WORKERS.

BY MAE Y. MAHAFFY.

The art of crocheting, like many another art or craft, has its periods of popularity, and just now this art is at the fore in an exceedingly decisive manner. Everyone who does not already understand its mysteries is anxious to master them, for nothing is more fetching as a finish to lingerie and the dainty toilet accessories so indispensable to well-dressed women.

The first requisite for crochet workers is to secure first-class materials. There are a great many good brands of crochet silks and cottons. One should select those having a soft finish, pliable and easily handled, yet brilliant and non-fadable, where colors are desired. Narrow lace edgings and insertions are made from fine, round thread, cotton or linen, while heavier materials must, of course, be used for coarser edgings, etc.

The French word for hook is croche or croc, which gives the work its name. These hooks, or crochets, must be chosen with an eye to the materials for which they are desired. Coarse fabrics demand large hooks of bone, wood, tortoiseshell or ivory, while finer threads call for fine hooks, usually made from steel, though sometimes of bone or ivory. See that the hooks are well polished and exceedingly smooth, so that the threads will not be split or pulled roughly. Do not use a hook with such a heavy handle as to tire the hands while manipulating it.

In some crocheting the work is always done from the same side, and the thread broken off each time the opposite edge is reached. But in others the work is turned and the thread carried back and forth without breaking. If the work is

REASONED IT OUT

And Found a Change in Food Put Him Right.

A man does not count as wasted the time he spends in thinking over his business, but he seems loth to give the same sort of careful attention to himself and to his health. And yet his business would be worth little without good health to care for it. A business man tells how he did himself good by carefully thinking over his physical condition, investigating to find out what was needed, and then changing to the right food.

"For some years I had been bothered a great deal after meals. My food seemed to lay like lead in my stomach, producing heaviness and dullness and sometimes positive pain. Of course this rendered me more or less unfit for business, and I made up my mind that something would have to be done.

"Reflection led me to the conclusion that over-eating, filling the stomach with indigestible food was responsible for many of the ills that human flesh endures, and that I was punishing myself in that way—that was what was making me so dull, heavy and uncomfortable, and unfit for business after meals. I concluded to try Grape-Nuts food to see what it could do for me.

"I have been using it for some months now, and am glad to say that I do not suffer any longer after meals; my food seems to assimilate easily and perfectly, and to do the work for which it was intended.

"I have regained my normal weight, and find that business is a pleasure once more—can take more interest in it, and my mind is clearer and more alert."

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

Read "The Road to Wellville," in pkgs. "There's a Reason."

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turned it is necessary to crochet two or three chain stitches at the edge so that it will not draw. If the thread must be broken draw the end right through the last loop, pulling it up snug. This will hold it firmly. In refastening at the starting point for the next row the thread is pulled through the first loop to fasten it, and the needed stitches then follow.

Numerous abbreviations for the stitches used are seen in descriptions of articles, and in some publications these differ slightly, but scarcely enough to bother one who is at all familiar with the work, though it might puzzle the tyro occasionally. These abbreviations, with an explanation of the stitches, follow:

The use of the asterisk, *, so often met with in directions for crocheting, is to suggest repetitions rather than print the directions over again. For instance, "repeat from * to *" means to go back to the point where the first asterisk appears and work all between that and the second again. Sometimes several asterisks are used, but the meaning is the same.

L. or l indicates loop. This is merely the twisting or throwing over the thread to form an oval before beginning the chain stitches, and is the name given to the open portion of the stitches throughout the work.

C. S. or cs, or ch, st. is used to designate chain stitch. There are several methods followed in making this stitch. By some a single knot is tied and a loop drawn through it for the first stitch. By others a loop or twist of the thread is made in the left hand, and the crochet hook in the right hand inserted through this loop, caught about the continuing thread, which is then pulled through, and the first end drawn down snugly to hold it in place. The loop remaining on the hook should be just large enough to work the hook back and forth in nicely. A chain of more than one loop in length is simply a continuation of drawing the thread through the preceding loop. The loop is held between the thumb and forefinger of the left hand, and the hook taken in the right hand just as a pen is used in writing. The thread should run from the forefinger under the second and third fingers, and around the little finger.

O. or o means over, a term used for the slight jerk of the wrist in throwing the thread over the needle or hook in making the chain stitches. S. S. or ss signifies slip stitch, made by inserting the hook in the next to the last stitch, catching the thread about the hook and drawing it back through both the stitch in the chain and the one on the hook.

S. C. or sc is single crochet. This is one of the commonest stitches known to crochet workers. The hook, with one loop thereon, is inserted in a former row or foundation stitch; the thread is taken up and drawn through the loop, forming part of the former stitch. This makes two loops on the needle, and the thread is again taken up and drawn through both of these, leaving one loop.

D. C. or dc indicates double crochet. With one loop on the hook throw the thread around it to form another; then insert it in the foundation stitch or one of the former row, take up the thread and draw it through the last named loop, leaving three on the hook; throw thread over and draw through two of these, then thread over again and draw through remaining two.

T. C. or tc is treble crochet. In this work, just as for double crochet, except that the thread is thrown twice around the hook before being inserted in the foundation, and in completing the stitch the thread is drawn three times through two loops each.

H. D. C. or hdc stands for half double crochet. Throw the thread over the hook and take up a stitch of the foundation or former row; throw the thread over again, and draw through all three loops. Finish by taking up third stitch in same manner.

T. T. O. or tto means to throw the thread over the hook or needle.

P. or p signifies picot, or P. S. or ps, picot stitch, one and the same. This is usually an edging, and consists of hanging loops made in various ways. The plain picot is usually from three to five chain stitches hanging from the foundation or former row at regular intervals. Drooping or twisted picots are made by chaining five stitches, dropping the loop, placing the hook into the second chain stitch made, catching up the dropped loop again and drawing it through the stitch.

There are many other stitches utilized in the more complicated forms of crocheting, but when these are intended they are generally explained more fully, since the abbreviations would be understood

only by experienced workers in complicated patterns. The foregoing cover the ordinary stitches met with in common crocheting.

THE SERVING OF DINNER.
No. 39.

BY MRS. ALTA L. LITTELL.

"I couldn't be a society woman," said one woman, "for I would never know how to get up a stylish dinner. I could get something on the table to eat, but I could never get it on in style."

To the minds of most of us, the "getting on the table to eat" is the biggest side of the proposition, and if we can do that we feel quite satisfied. Cooking is the first in line of importance; after that is accomplished it is time enough to think of the best way to arrange the table.

To begin with, a simple four-course dinner is the most that any of us need know how to manage, except for very special occasions.

A good soup, served with wafers and celery, olives, small pickles or radishes comes first; then the meat, with potatoes, one or two other vegetables, and bread and butter; third, the salad, and lastly the dessert with coffee, or if you wish to be a little more formal, serve the coffee last alone. Such a dinner any woman can manage, does manage every day with no thought of formality or "giving a dinner."

As to the table. "Spotless linen" has been said so often in this connection as to be quite trite. Just how the busy woman with no help, even a washerwoman, is to manage her work so as never to have a spot on her tablecloth, is a mystery I have never fathomed. Therefore, let us change the phrase to read, "passably clean linen." Of course, when she has guests a clean cloth will be laid and then our tried and true phrase will hold good. If you have flowers try to keep a centerpiece of cut flowers always on the table. But do not have too many. A few flowers of one sort gives a better effect than a mass of blossoms of many kinds. Have the dish for the flowers low enough so that it will not obstruct the view or else use a high slender vase. The cloth and flowers being arranged, proceed to the covers, as the individual services are called.

At each place a dinner plate should be placed, and the silver which is to be used for the entire dinner, except perhaps the dessert. On the right of the plate, place first the knives, the edges towards the plate and the knife to be first used farthest from the plate. Next the knives place the soup spoon, the inside of the bowl up, and next this the oyster fork, if oysters are to be served, so that the piece of silver to be first used is farthest from the plate, the next piece is second, and so on to the last article used, which is nearest the plate. The forks to be used are arranged on the left of the plate, the first to be used being farthest from the plate. The water glass is set at the right of the plate and at the tip of the spoons. Spoons for dessert, coffee, etc., are easier placed when the dessert is served. The napkin may be placed on the plate, at the left of the forks, or above the plate.

Unless one has a maid, or a daughter who is willing to play maid, it is foolish to try to serve a dinner in courses. Of course, the soup dishes must be removed, but after this the dinner should simply be placed on the table and served by the host and hostess. If a maid is kept the meat may be carved, and the plates passed, holding the meat only. Then the vegetables are served from the side, the maid holding the dish to the left of each person. Dishes from which the person seated must help himself are always offered at the left. When the maid serves or removes soiled dishes she goes to the right.

For the formal 12 course dinner, the following courses are served:

- First course, appetizers or canapes.
- Second course, oysters with tobacco sauce or lemon, with small sandwiches.
- Third course, clear soup, with celery, radishes and olives.
- Fourth course, fish with sliced cucumbers or tomatoes.
- Fifth course, an entree.
- Sixth course, meat, potatoes and a vegetable.
- Seventh course, punch.
- Eighth course, game or poultry and salad.
- Ninth course, a hot pudding or other dessert.
- Tenth course, a frozen dessert, as ice cream, a mousse or biscuit glace.
- Eleventh course, fruit.
- Twelfth course, black coffee.

Accept Minnesota's Invitation

☞ Come and see this great state with its fifty-four million acres of productive land. Look over her fertile fields and thriving cities and towns. Examine her resources for yourself. Test her delightful, healthful climate.

☞ See how corn, wheat, the grains and grasses, apples, peas, beans and other vegetables grow in her rich soil.

☞ Learn what money is to be made raising poultry and live stock, dairy farming, etc.

☞ Minnesota is assuredly one of the "Prosperity States of America." Every fall Minnesota has a State Fair that as an exhibit of the products of one commonwealth cannot be surpassed.

☞ A million and a half acres of Government Homestead Land open to entry. A large share of it agricultural and timber land. Red Lake Indian Reservation lands in northern Minnesota just opened to homesteading.

☞ 3,000,000 acres of public land which the state has on sale at remarkably cheap prices.

☞ Great markets are at hand for all of Minnesota's products: St. Paul, Minneapolis, Duluth, Chicago—in daily touch by fast freight, express and passenger trains of the Northern Pacific Railway.

☞ Send for "Facts About Minnesota," "Minnesota Lands" and "What Professor Thomas Shaw Says About Minnesota." Don't delay. Write today.

L. J. Bricker, General Immigration Agent
27 Broadway, St. Paul, Minn.

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We Want Our 1911 Catalog in the Home of Every Farmer in America.
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Dept. 354 Cincinnati, O.

Page 63—Auto Seat Buggy—An unusual Buggy Bargain. Seat and general arrangement are exclusive. We save you about \$30 by selling direct from factory.

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Bone, Shell and Corn Mill

A money-saver and money-maker. Cracked grain, ground bone and shell, increase egg production when fed properly. The "ENTERPRISE" Mill is a wonder. Strongly built, reliable, runs easily and won't get out of order. Grinds dry bones, corn, oyster and other shells, etc. Price of Mill shown, No. 750, is \$8.50. Weight, 60 lbs. Grinds 1 1/2 bushels of corn an hour. Hardware and general stores everywhere.

Catalogue FREE. Famous Recipe Book, "The Enterprising Housekeeper," for 4 cents in stamps.

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Be An Independent Buyer Spend One Cent For This Big FREE Book

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tomers in 21,000 towns. Over 400 styles and sizes to select from. \$100,000 bank bond guarantee. We prepay all freight and give you

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Write a postal for our book today—any responsible person can have same credit as your home stores would give you—and you save \$5 to \$40 cash. No better stoves or ranges than the Kalamazoo could be made—at any price. Prove it, before we keep your money. Be an independent buyer. Send name for Free Catalogue No. 113.

Oven Thermometer Makes Baking Easy

Kalamazoo Stove Company, Mfrs., Kalamazoo, Michigan

A BUSINESS MAN'S VIEW OF THE FARMER.

Extracts from an address by Mr. G. B. Sharpe, publicity manager of The De Laval Separator Co., before the Sphinx Club, in New York, March 14, 1911.

There was a time when the word "farmer" was used in the town and city as a term of derision and contempt. The man who said he "would rather be a lamp-post in New York than a king in the country" might have had reason for such a preference fifteen or twenty years ago, but such an assertion these days is only an evidence of ignorance of the new order of things in our rural communities.

Let us consider first the economic condition of the farmer today. Within the past ten years, according to government reports, prices of farm products have increased from 25 to 75 per cent. The increase in the cost of farm necessities has been but slight. Government statistics show an average increase in the farmer's purchasing power of over 50 per cent, brought about through improved and better methods of agriculture, and better prices for his products.

Contrast this prosperous condition of the farmer with the condition of the dwellers in our towns and cities.

How much has the purchasing power of the professional man, the salaried man and the mechanic increased in the past ten years? Less than 15 per cent. What has been the increase in the price for the necessities of life, not to speak of the luxuries? 25 per cent to 50 per cent. In other words, the average family in our centers of population today is worse off financially than ten years ago.

When the man in town gets a raise in salary, by the time he has paid the increased rent on the new flat he moves into, and settled with the "grocer and butcher and candlestick-maker," what has he left at the end of the year to show for his increased income? As a rule, nothing! He is lucky if he hasn't a lot of unpaid bills staring him in the face.

Now, how about the increased income of the farmer? What is he doing with it? Part of his surplus is going into his local bank, but a large part of it is being spent to make him and his family more comfortable and his home more attractive. Whatever you can persuade him he needs he has the money to buy. Conditions on the farm have changed mightily in the last few years. The trolley line and the telephone, and last, but by no means least, the newspapers have brought the farmer in closer touch with urban advantages and broadened his view of life.

Perhaps the best recent example of what may be accomplished by cultivating the farmer's acquaintance is the great popularity of the automobile today in our rural communities, which has largely been brought about through advertising.

Last year, on a trip through Central Illinois, at a little flag station where our train stopped, I saw a handsome big touring car being unloaded. I asked the station agent who was buying a car like that, and he said, "Oh, a farmer living over there a mile or two;" and a drummer who was standing on the carstep chimed in, "Well, farmers and millionaires are the only people who can afford to buy automobiles nowadays;" and there's more truth than poetry in that bromide.

It's a smiling land, a land flowing with milk and honey, a land that is emerging from the hardships of frontier life and hard labor with few luxuries, into a full realization of the luxury of labor-saving machines and the possibilities of all the comforts that may be enjoyed in the farm home.

But, says some national advertiser, "I am reaching this field. I am using the magazines and the national mediums. They must have a certain per cent of readers in the farm homes." Most assuredly they have, but it is so small as to be almost negligible. Then, again, it might naturally be asked, "If the farmer is so prosperous and is able and willing to make life in the farm home more pleasant for himself and family, why is he not a subscriber to and a reader of the popular magazines?"

The best answer to that query that I know of is the reading pages of these publications themselves. Pick up almost any magazine, analyze carefully its reading pages. What do you find? By and large a class of literature written by city dwellers, about city dwellers and city problems, to interest city dwellers. Is it then any wonder that the farmers form such a small percentage of the magazine reading population?

Let us analyze the farmer's reading standpoint a little.

The farmer is a business man. He has more money invested, as a rule, in his farm, buildings, stock and machinery than even the small merchant or tradesman in the town or city. Farming is a trade, and the farmer's trade paper is the farm paper. The modern farmer owes much of his present prosperity to the farm paper. It has familiarized him with new methods and has placed at his disposal all the wealth of information and experiment in scientific farming that our state and national agricultural experiment stations have worked out for his benefit. It has placed at his disposal the experience of other practical farmers. It has helped him to grow two ears of corn where he formerly grew one. It has helped him to improve his methods, and thereby greatly increased the value of his land and his revenue from it. Through its advertising pages he is kept in touch with the latest improvements in labor-saving machinery, and in addition to its value as a farmer's trade paper, it has kept him informed on general topics and furnished his wife and family with reading matter of interest and profit to them. There is no publication so carefully read, and highly prized, or that begins to wield the influence upon its readers that the farm paper does.

To the manufacturer looking for a larger or a new market, I would say: Don't judge the farmer by what your recollections of the farm as a boy 25 or 30 years ago may be. Don't take your information on this subject second-hand, either, and don't go into some farming section 50 miles from New York, where they get the largest revenue from summer boarders, for your information. Some fine day this spring or summer buy a ticket for any small town in Central Illinois, Iowa or Missouri. Go there and stay two or three weeks. Hire a livery rig or an automobile and proceed to get acquainted with real farmers. Find out for yourself what the farmer reads, and what is the best way to reach him. Find out whether you can best arrange for direct distribution or distribution through dealers. It will be a new experience for you, and I guarantee you will acquire more new information in these few weeks than you ever did before in six months, and that you will come back with some new ideas and enthusiasm regarding the possibilities of the market many have heretofore neglected, more from lack of proper information than for any other reason.

HAPPENINGS OF THE WEEK.

(Continued from page 444).

States to Mexico. The news was taken immediately to Washington and the mobilization was ordered almost instantly. President Diaz, of Mexico, was given six days to withdraw the offer. He complied and the ships were ordered out of Mexican waters. It is believed by many that the act avoided war with not only Mexico but also with Japan. A number of incidents had happened which had brought into question the good faith of Japan toward this country and the discovery of this plot only goes to give confidence that the incidents pointed out the fact. It is hoped that the quick action of the President will put an end to the event.

The rebel army under Madero is marching toward Juarez and it is anticipated that the place will be bombarded soon. At Mexico a battle between the federal forces and revolutionists is expected at any time. A victory for the federal troops is reported in a small engagement about 20 miles south of Cananea while another detachment is following 400 insurgents who are retreating north of Zactecas.

But one exit to a structure in which a feast was being held at Bombay, British India, resulted in 200 persons being killed in a panic resulting from a fire.

A German company capitalized at \$2,000,000 has been formed to finance the building of dirigible airships for the purpose of crossing the Atlantic. The new ships will be eight times larger than Zeppelin's giant air craft, the plans calling for a vessel 775 feet long to be driven by thirty motors.

The German steamer Prinzessin Irene grounded off Lone Hill, Long Island, last Friday with 1,720 persons aboard. At first the sea made it impossible to launch life boats at the station near at hand, but the waters afterward calmed a little and the small boats finally reached the unfortunate ship. In five hours and ten minutes the 1,720 persons were transferred from the liner to her sister ship, Prinz Frederick Wilhelm. The Irene was running under full steam ten miles off her course in a fog when she struck. She was released on Monday and steamed into New York harbor.

The caissons composing the cofferdam surrounding the old hulk of the battleship Maine sunk in Havana harbor 13 years ago have been completed, thus finishing the first step in the raising of the wreck. The pumping of the water from the enclosure will require a few weeks more time.

Barn of S. P. Strickland, Bangor, Me., covered with Amatite Roofing.



Amatite Roofing
A Roof That Needs No Painting

Amatite has a real mineral surface which needs no painting.

The above illustration shows the barn of S. P. Strickland, Bangor, Me., which was roofed with Amatite three years ago. The owner's opinion of it is expressed in the following letter which we recently received:—

"Gentlemen:—The Amatite Roofing purchased three years ago and placed on my barn has given most satisfactory service. The roofing is unusually attractive in appearance, and in my judgment is the most durable and satisfactory made. The fact that it requires no painting appeals to me very strongly, and this feature makes it by far the cheapest ready roofing on the market. Yours very truly,
(Signed) S. P. STRICKLAND."

Every practical man will see at once that painting roofs is an expensive nuisance. If the roofs fail, the manufacturer always claims that they are not painted often enough, or that you did not use the right kind of paint or something of that sort. After Amatite is laid there is nothing more to do to it.

BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia Boston St. Louis Cleveland
Pittsburg Cincinnati Kansas City Minneapolis New Orleans
Seattle London, England



If we sold Amatite at a price 20% higher than the old-fashioned "Paint-me-often" kind, you would be justified in buying it. You would more than save the extra cost by eliminating the paint in after years. Amatite, however, costs no more than other first-class roofings, and it gives twice as much weight of roof per square foot.

A sample of Amatite showing the mineral surface will be sent free on application. Address our nearest office.

Everjet Elastic Paint

Do you realize the economy of using black paint when possible? Everjet costs half as much as other first-class paints. Tough, durable, heat-proof and water-proof. For wood or metal.

Creonoid Lice Destroyer and Cow Spray

Vermin in the cow barn and hen house costs you money. Prevent insect worry by spraying regularly with Creonoid, a cheap, powerful disinfectant. It repels flies, mosquitoes and hen lice. It kills germs and prevents the spread of contagion.

Why Not Get Your Roofing Material Direct From a Manufacturer? We Make Roof, Metal, Barn & Silo Paints Also Waterproofing for Concrete.

Our Sterling and Ironsides Brands of Roofing Stand for Quality.

Sterling Rubber Roofing 1-Ply.....	\$1.10
" " " 2-Ply.....	1.30
" " " 3-Ply.....	1.50
Ironsides Roofing Silica Coat 2-Ply.....	1.30
" " " 3-Ply.....	1.50

Some dealers may tell you they will give you better values, but compare our products with any or all, and if you do not find them equally as good if not better than any other, return them at our expense and we will cheerfully refund your money.

It will pay you to investigate this proposition.

REFERENCE—Old National Bank.

BATTLE CREEK ROOFING & MFG. CO., BATTLE CREEK, MICHIGAN.

Ever-Ready



Safety Razor With 12 Blades

ENTIRE OUTFIT
3,000,000 in use. Sold and guaranteed by dealers everywhere.
AMERICAN SAFETY RAZOR CO. NEW YORK.



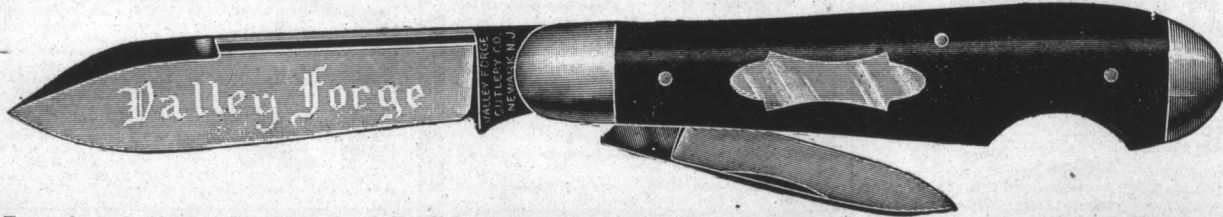
VALUABLE PREMIUMS WE GIVE FREE.

The premiums described and illustrated below are given free with our regular subscription offers. They are all sent postpaid but must be requested when sending your order, otherwise will not be sent.

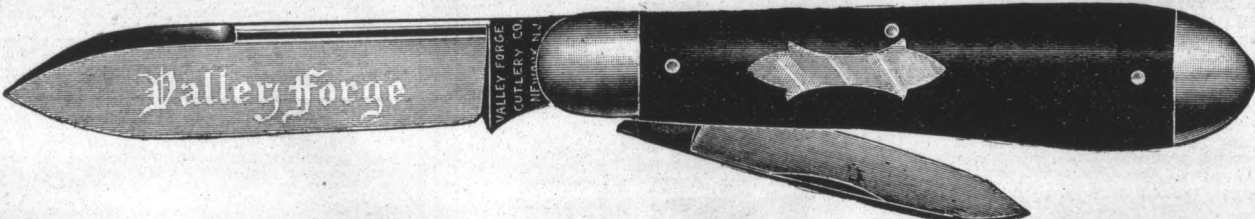
REMIT AT THESE PRICES TO SECURE PREMIUMS:

One Year (52 copies)	\$1.00	Three Years (156 copies)	\$2.00	20 to 40 PAGES WEEKLY
Two Years (104 copies)	2.00	Five Years (204 copies)	2.75	

GET UP A CLUB OF TWO OR MORE—We give extra premiums for a club of two or more Michigan Farmer subscriptions as explained after each premium. You can secure as many of the premiums as you can secure subscriptions for and *remember each subscriber you secure also gets a premium* as below if requested in your order. We send you free sample copies on request. Send all orders to **THE MICHIGAN FARMER, Detroit, Michigan.**



Easy Opener Knife.—Made of finest English cast steel, hardened and tempered. Ebony handle, brass lined, in fact, a knife of superior quality throughout. This knife is guaranteed to give satisfaction if properly used. Retail ordinarily for 75 cents. We give it free with the Michigan Farmer for 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Always mention Premium No. 205.



Farmer's Knife.—This knife has same quality of material as the Easy Opener but does not have that feature as some prefer not to have it. We give it free with the Michigan Farmer for 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Always mention Premium No. 207.



Leather Punch Knife.—An excellent knife and a handy tool combined. The punch blade can be used to good advantage in repairing harness. The knife is made out of the same quality of material as the others and every farmer could use one. We give it free with the Michigan Farmer 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Always mention Premium No. 208.



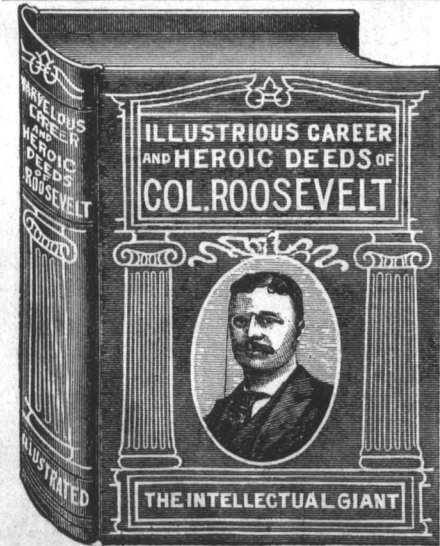
"PRESTO" The "ALL-IN-ONE" RAZOR STROP

This strop is made from the finest horse-hide leather, tanned by special processes, then chemically treated with "all-in-one" solution. This preparation is so thoroughly incorporated in the leather that it is guaranteed not to peel, wear, scrape or wash off.

Any man can strop a razor with as keen an edge as can the most expert barber. A few strokes on the sharpening side, followed by a like number on the finishing side does the trick. The lot we have purchased are "Extra Strong" and it requires but little stropping to bring a deadly dull blade to a hair splitting edge. Free with the Michigan Farmer 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Mention Premium No. 211.

Patent Tension Shears

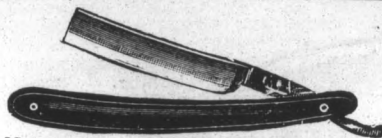
Good quality of material, 8 inches with patent adjustable spring tension bolt, preventing the blades from spreading and giving a clean cut the full length. We have sent out thousands of these with excellent reports from users, and they have been one of our most popular premiums. Free with the Michigan Farmer 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Mention Premium No. 159.



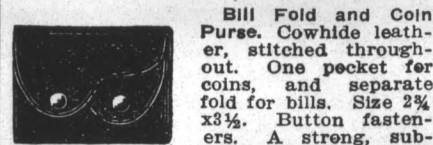
The Illustrious Career and Heroic Deeds of COL. ROOSEVELT

Containing a full account of his strenuous career; his early life; his adventures on a ranch; as a leader of the Rough Riders; President of our great country and his

Famous Adventures in the Wilds of Africa. Handsomely bound in cloth, 400 pages, size 7x9 inches. Profusely illustrated and well printed on high-grade book paper. Regular price would be \$1.50. We give it with the Michigan Farmer for 5 years at \$2.75. Also free for three subscriptions, (1, 2, 3 or 5 years). Always mention Premium No. 203.



Not a cheap razor such as is generally used as a premium. It is made of best steel, black handle, hollow ground 5/16-in. concave blade; honed and stropped ready for use. We give it free with the Michigan Farmer for 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Always mention Premium No. 210.



Bill Fold and Coin Purse. Cowhide leather, stitched throughout. One pocket for coins, and separate fold for bills. Size 2 1/2 x 3 1/2. Button fasteners. A strong, substantial purse that will outwear a half dozen of the ordinary kind. Free with the Michigan Farmer 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Mention Premium No. 102.

Farmer's Calculator, Veterinary Adviser, and Farm Record. Veterinary advice alone makes this book of incalculable value to every farmer. In addition there are hundreds of tables of weights, measures, interest, dimensions, etc., and a very complete farm record. Pocket size, 3 1/2 x 6 1/2. Free with the Michigan Farmer 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Mention Premium No. 127.

Free with the Michigan Farmer 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Mention Premium No. 127.



Lock Stitch Sewing Awl, with straight and curved needles. Makes a lock stitch with one thread and one operation. For harness, sacks, canvas or any heavy sewing. Regular price of this awl is \$1.00 in most stores. Free with the Michigan Farmer 1, 2, 3 or 5 years. Also free for a club of two subscriptions, (1, 2, 3 or 5 years). Mention Premium No. 123.

Michigan Farmer's Club List.

For the benefit and convenience of our subscribers we have arranged the following list of papers on which we can save them money. Besides the money, they save the trouble and expense of sending each order separately.

EXPLANATION—The first column is the regular subscription price of the other papers. The second column gives our price for a year's subscription to both the other paper and Michigan Farmer. The third column gives the price at which the other paper may be added when three or more are ordered. Example: We will send the Michigan Farmer and Detroit Semi-Weekly Journal for \$1.60. If, for instance, McCall's Magazine also is wanted add it at 40c making total \$2.00. Any number of papers may be added at third column price if they are for a subscriber to the Michigan Farmer.

If you want the MICHIGAN FARMER THREE YEARS and the other papers one year add 1.00 to the second column price. For the Michigan Farmer 5 years add \$1.75. We do not send samples of other papers. Address the publishers direct. Send all orders to the Michigan Farmer or through our agents.

We will take your order for any publication you want whether it is or not. Write for rates.

NOTE—So long as a subscriber is on our list for one or more years he may order at any time any publication at third column price. So that a three or five-year subscriber does not lose the advantage of the reduced price if he wants any other paper next year or the year after.

Subscriptions ordered to Canada require postage. Write for rates unless postage is known, in that case include with order. Postage on Michigan Farmer alone to Canada is 1 cent per week.

NAME OF PUBLICATION.	See explanation above.	\$	\$
Daily, (6 a Week.)			
Journal, Detroit, Mich on rural route	2 50	3 50	2 55
" " " " " " " "	5 00	5 25	4 75
Times, Detroit	2 00	2 75	1 75
News Grand Rapids, Mich.	2 00	2 25	1 50
Courier-Herald, Saginaw, Mich., (inc. Sunday on R. R.)	2 50	2 55	1 60
News, Cleveland, Ohio	2 00	2 85	1 85
Tribune, Bay City, Mich.	2 00	2 75	1 85
News-Bee, Toledo, Ohio	2 00	2 50	1 65
Tri-Weekly, (3 a Week.)			
World, New York, (3 a week.)	1 00	1 70	75
Semi-Weekly, (2 a Week.)			
Journal, Detroit, Mich.	1 00	1 60	75
Weekly Newspapers and Current Comment			
Blade, Toledo, Ohio	1 00	1 80	35
Commoner, Wm J. Bryan, Editor, Lincoln, Neb.	1 00	1 60	65
Inter Ocean, Chicago (w)	1 00	1 35	75
Cattle, Sheep Swine, Poultry, etc.			
American Poultry Journal, Chicago (m)	50	1 30	35
American Poultry Advocate, Syracuse, N. Y. (m)	50	1 30	35
American Sheep Breeder, Chicago (m)	1 00	1 75	80
American Swineherd, Chicago, (m)	1 50	1 80	35
Breeders' Gazette, Chicago, (w)	1 75	1 90	1 00
Farm Poultry Boston, Mass. (s-m)	50	1 30	35
Gleanings in Bee Culture, Medina, O. (s-m)	1 00	1 70	75
Hoard's Dairyman, Fort Atkinson, Wis. (w)	1 00	1 70	1 00
Horse World, Buffalo, N. Y. (w)	2 00	2 25	1 50
Horsemanship, Chicago, (m)	2 00	2 25	1 60
Jersey Bulletin, Indianapolis, Ind. (w)	1 00	1 85	1 60
Kimball's Dairy Farmer, Waterloo, Ia. (s-m)	40	1 30	35
Poultry Keeper, Quincy, Ill. (m)	50	1 30	35
Poultry Success, Springfield, O. (m)	50	1 30	40
Reliable Poultry Journal, Quincy, Ill. (m)	50	1 30	35
Swine Breeder's Journal, Indianapolis, Ind. (s-m)	50	1 30	35
Popular Magazines.			
American Magazine, (m)	1 00	1 95	95
Etude, Philadelphia, Pa. (m)	1 50	1 95	1 00
Hampton's Magazine, N. Y. (m)	1 50	2 00	1 10
Metropolitan Magazine, N. Y. (m)	1 50	2 00	1 00
Mechanical Digest Grand Rapids (m)	50	1 15	25
McClures Magazine, N. Y. (m)	1 50	2 05	1 10
Musician, Boston, Mass. (m)	1 50	2 05	1 10
Outing Magazine, N. Y. (m)	3 00	4 00	3 00
People's Home Journal, N. Y. (m)	1 50	1 75	1 50
Pearson's Magazine, New York (m)	1 50	2 30	1 25
Red Book Magazine, Chicago, Ill. (m)	1 50	2 30	1 25
Success, N. Y. (m)	1 00	1 75	80
Ladies' or Household.			
Designer, N. Y. (m)	75	1 55	60
Everyday Housekeeping, Salem, Mass. (m)	50	1 40	35
Harper's Bazar, N. Y. (m)	1 00	1 75	1 00
Housewife, N. Y. (m)	35	1 25	30
McCall's Magazine, N. Y. (m)	50	1 35	40
Mother's Mag., Elgin, Ill. (m)	50	1 35	50
Modern Presclia, Boston, Mass (m)	75	1 55	60
Pictorial Review N. Y. (m)	1 00	1 75	80
Woman's Home Companion, N. Y.	1 50	2 05	1 25
Religious and Juvenile.			
American Boy, Detroit, Mich. (m)	1 00	1 65	75
Little Folks, Salem, Mass. (m)	1 00	1 75	1 00
Sunday School Times, Philadelphia, Pa. (w)	1 00	1 60	85
Young People's Weekly, Elgin, Ill. (w)	75	1 45	75

(w-weekly; m-monthly; s-m-semi-monthly.)

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Don't fail to notice our offer to new subscribers on another page.

hedge more compact at the base. I have seen hedge plants set without pruning or cutting back and allowed to grow this way for a year. It is impossible to get anything but a scraggly row of bushes with open spaces near the base that will let a dog through, unless the plants are pruned when set, and cared for afterwards.

Missouri. H. F. GRINSTEAD.

TREATMENT OF TREES ON ARRIVAL.

Trees and shrubs sometimes arrive from the nurseryman at a time when, owing to the prevalence of severe frost, or the soil being in a very wet state, it would be injudicious to plant them until more favorable conditions supervene. Indeed, it is a common mistake to plant them when the operation had much better be deferred for a time. Failures in transplanting may often be traced to the fact that trees which are not planted immediately on arrival are improperly treated in the interval. They should be at once unpacked and their roots carefully placed in trenches in a sheltered position and covered over with a good depth of soil. Thus situated they will not harm if left for several weeks. If received when the soil is too hard to be worked they should be placed in a cool shed, and the roots covered with manure or damp matting. Dryness of the roots is what has principally to be guarded against when trees are out of the ground; the delicate fibrous roots perish very quickly, and the check to the tree is often a severe one. In bright weather, or when there is a dry

we can control both insects and diseases. The same is true in the potato field, and of late years it has become necessary to spray the tomatoes in order to insure freedom from blight. Bordeaux is useful on peas, particularly the late plantings, to keep mildew in check. Then the sprayer comes in handy to combat the green cabbage worm, harlequin cabbage bug, squash beetles and other destructive insects. For a small garden one of the small knapsack sprayers of a few gallons capacity and costing from three to five dollars, will give satisfaction and last for years. For more extensive operations one of the larger outfits may be purchased at a reasonable price and one sea-

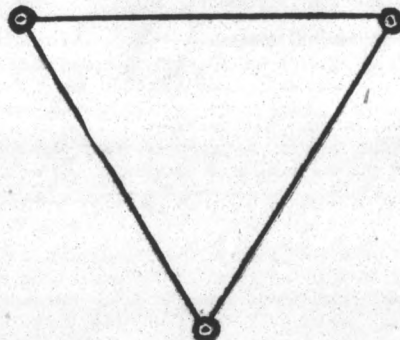


Figure 2.

son's work should more than pay for it.

One of the most important garden crops is lima beans, though there are many, who think limas are more difficult to grow successfully than other beans. We have found limas one of the most adaptable as well as most profitable of our vegetables. While they succeed best and mature earliest on a fairly rich sandy loam soil, we also grow them successfully on heavy clay, the only difference being that the beans cannot be planted so early on clay soil as it warms up slowly. If the ground intended for limas can be plowed early it will warm up more quickly and make a better seed bed. Now is the time to cut a supply of bean poles. We cut them about seven feet long and sharpen the lower end. Wire netting may be used instead of poles but we prefer the latter as they admit of cultivating in both directions.

The average farm is woefully lacking in small fruits. Various excuses are offered for failure to raise enough berries to supply the family with fruit but few of them hold good. The labor required to care for a few dozen currant, gooseberry and raspberry bushes is slight. Once they are started they will grow and bear well for years with scarcely any attention. Strawberries require somewhat more attention to give best results but they, too, will stand considerable neglect and still bear fairly well. Raspberry and strawberry plants set out this spring will bear a full crop the following year. Currants and gooseberry are longer coming into bearing but in a few years they prove quite profitable. By all means make a start with small fruits this year.

Ohio. NAT S. GREEN.

CABBAGE.

The home gardener, the market gardener, and the truck farmer, each of whom contributes largely to the vegetable supply, is more or less interested in the growing of one of the most universally cultivated plants—the cabbage; and with its usual sensitiveness to the needs of its clientele the U. S. Department of Agriculture recently issued farmers' bulletin No. 433 describing its cultivation.

Although one of the coarser vegetables, cabbage finds a place in the home garden

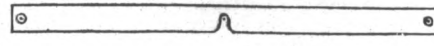


Figure 3.

as well as in the market garden and the truck farm, and in some sections of the United States it is extensively grown as a farm crop. No adequate estimate, however, can be placed on the value of this crop, as it fluctuates very decidedly from year to year both in acreage and price; but the output is large.

Early cabbage is practically all consumed as a green vegetable; the late crop on the other hand, is handled as a fresh vegetable, as a storage crop, and for the manufacture of sauerkraut. Cabbage is always in demand, and, under present conditions, is always on the market either in the spring as the product of the southern farms, in the fall and early winter from the northern farm and market garden, or in the winter from the storage house where the surplus has been preserved for this demand.

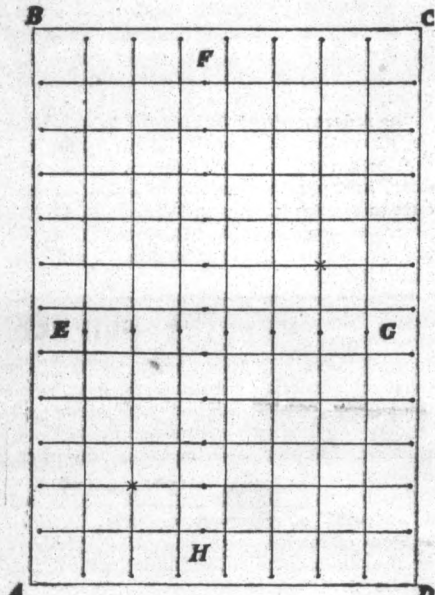


Figure 1. (See Opposite Page).

wind, the roots must be protected with mats as much as possible while planting is going on and even dipping the roots in water immediately before putting them into the soil. It is remarkable what ill-treatment trees will endure, but there is a limit to this, and it is unfortunately sometimes demonstrated in the case of planting on a large scale, nobody concerned apparently being at all competent to perform the work in a satisfactory manner.

Canada. W. R. GILBERT.

TIMELY GARDEN SUGGESTIONS.

The farmer is learning to appreciate the value of his vegetable garden more every year, not only as a source of supply for the home table but often as a quite profitable side line.

Vegetables that require a long growing season must be started weeks before they may be safely set outdoors, then there are others of shorter growing season that must be started indoors in order to get them on the market when prices are highest.

Cabbage, celery, and cauliflower will endure considerable cold without injury after they are well established but such plants as tomato, pepper, and egg-plant require a high temperature and are easily stunted if exposed to cold. When the plants are a few inches high they should be transplanted and given more room in order to make strong, stocky growth, and before being transplanted to the garden they must be gradually hardened off.

A good spraying outfit is a necessity nowadays on every farm no matter what line of farming is followed. In the garden it is indispensable. Without its use we can scarcely grow a good crop of cucumbers or muskmelons because of the striped beetle and the ravages of blight and other diseases. But by spraying frequently with bordeaux and lead arsenate

It is cheaper

to maintain the fertility of your soil while it is producing revenue than it is to reclaim it after it is exhausted.

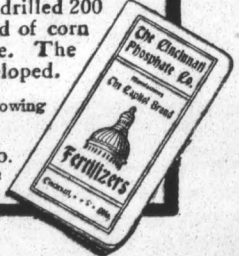
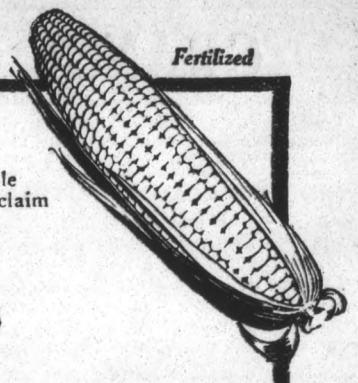


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GRANGE

Our Motto—"The Farmer is of more consequence than the farm, and should be first improved."

THE NEW GRANGE REVIVAL AND ITS MEANING.

That there is a great Grange revival sweeping over the state no one acquainted with the facts will doubt. Muskegon, Oceana, Newaygo, Mason, Lake, Manistee, Benzle, Wexford, Charlevoix and Leelanau counties have made an aggregate gain of 1,000 in the membership of the Granges of these counties during the past quarter.

Never before in the history of Michigan have the farmers been so deeply impressed with the fact that their greatest friend is the Grange; that for nearly a half century it has been fighting their battles; that it is a home and school builder; that it is a good government maker; that, in the state, it numbers among its membership many of the best school commissioners and teachers; that it stands for progressive political advancement; that it is more and more co-operating with city, village and citizen in a social and civic uplift, and these are some of the reasons for the great Grange revival now in progress.

D. E. McCLURE.

THE GRANGE IN IRON COUNTY.

This county is famous and known everywhere for its great mines which, although just in their infancy, furnish employment to thousands of men. Less than one-fifth of its people live in the rural districts, and these are largely adjacent to the main cities of Crystal Falls on the east and Iron River on the west. These conditions existing, the farmer has heretofore had an excellent market for his products, leading him to sell the raw material or cash crop rather than a finished article in the form of live stock, with the result that much of the land is depleted in fertility. Clearing new land for potatoes and roots, and seeding down the old to hay is the common practice, hence the Granges organized in the county during the past few years have their full mission before them, both as to agricultural problems and educational and social matters.

There are six subordinate Granges in the county—Amasa, Crystal, Iron, Beechwood, Mapleton and Standley—with a combined membership of 200. Early in March of the present year a county Grange, to be known as Riverton Pomona,

A PLEASANT ANNIVERSARY MEETING.

Morenci Grange, of Lenawee county, fittingly celebrated the 37th anniversary of its organization some weeks ago. It was an all-day meeting, the special program prepared for the occasion being rendered in the afternoon. Invitations had been sent to every Patron who had ever been a member of Morenci Grange and many former members took advantage of the opportunity to renew old acquaintances. More than 100 enjoyed the dinner at noon, after which a program replete with musical and entertainment features of a reminiscent character was given.

Former State Master Horton delivered the principal address in which he sketched the history of the Grange as a national body from the date of its organization 44 years ago. In an interesting way he told what the organization has accomplished for the farmers of this country, dwelling particularly upon the legislation secured through the influence of the Order and speaking at some length upon the reciprocity measure now before congress, to the enactment of which he is unalterably opposed.

Mrs. Hoig gave a short paper referring to the friendships formed in the Grange, the educational advantages derived from its teachings and also remembering those passed from this life. She closed by reading some original verses by the aged W. S. G. Mason, one of the organization's charter members.

A letter from Hon. Albert Deyo, of Wauseon, was read. He has been a Patron since 1873, the latter part of his membership being with Morenci. In part he said: "I believe the Grange has been instrumental, as an educator, in doing more good for the agriculturalist than all legislative enactments in that line that have been placed upon the statute books." All of the old members remembered Mr. Deyo and were glad to hear from him on this occasion, he thereby showing his interest in the Order.

There are six surviving charter members: Mr. and Mrs. W. S. G. Mason, Mr. and Mrs. A. J. Sutton, Mrs. Jane Crillis and Geo. W. Woodworth, the last two named being members at the present time.

Ingham Pomona held its last meeting at the Grange hall in Mason with a large attendance. The morning session was a business meeting for members only, but the afternoon session was open to Patrons and their friends, Mrs. Creyts, Pomona lecturer, having charge of the program. Judson Hill, of Wheatfield, read a paper on "Present Prices and the Hired Help Problem," which was listened to with unusual interest, since the recent drop in prices of many farm products is making the help problem a very serious one for the average farmer. "The Social Saprophyte" was the title of a temperance paper read by Mrs. T. L. Iddings, of Lansing, and the author supplemented it with a well-rendered temperance recitation. Prof. H. L. Kempster, of M. A. C., gave a talk on poultry growing for profit, the interest in this talk being evidenced by the large number of questions which Prof. Kempster was obliged to answer. The reciprocity question came in for a share of the attention given to legislative matters, the prevailing opinion being that the measure before con-

FARMERS' CLUBS

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Address all communications relative to the organization of new Clubs to Mrs. C. P. Johnson, Metamora, Mich.

Associational Motto.—

The skillful hand, with cultured mind,
is the farmer's most valuable asset.

Associational Sentiment.—

The farmer, he garners from the soil
the primal wealth of nations.

YEARLY PROGRAMS.

One of the first of the yearly programs for 1911 to be received by the editor of this department from a local Farmers' Club is that of the Columbia Club, of Jackson county. It is a neatly bound booklet with red paper covers, on the first of which appears the name of the Club and the year for which the program is to serve. On the title page the date of the organization of the Club is also given as 1887. On the following page is an announcement of the date of the meetings, which are held on the second Saturday in each month, the meetings from October to April, inclusive, beginning at 10:30 a. m., while from May to September they are called to order at 1:30 p. m. The music for the several meetings is arranged for by the hostess in each case. On the following page of the booklet appears the list of officers, including the executive committee. On the next page is printed the regular order of business which is followed in the Club meetings. The balance of the pages in the booklet are devoted to the programs of the monthly meetings, beginning with March, which is evidently the beginning of the fiscal year of the Club. A feature of each program is the roll call, for which the character of the response expected is given, and the miscellaneous nature of these responses must serve to add interest to this routine feature of the monthly meetings. The subjects for discussion and the subjects of papers are given, while recitations and readings are assigned to members who are expected to take part in the several programs. The homes of the entertaining members are named and the name appears in connection with that of the host at the head of each program. Practical topics are discussed, two topics being assigned for nearly every meeting, the ladies frequently having topics for discussion which are of special interest to them. No meeting is held in July.

Special feature meetings begin in August, which meeting is designated as "Home Coming Week." An annual fair is held in October.

Altogether this program is one which should be of great convenience to the Club members and of great service in promoting general interest in the work of the organization, and it is easy to see from its careful perusal why the yearly program is favored by Clubs that have tried out the plan as successfully as has the Columbia Club.

WHAT THE LOCAL CLUBS ARE DOING.

The Highland and Hartland Farmers' Club, of Oakland and Livingston counties was represented by Mr. H. W. Nichols, who stated that the Club had been organized for 20 years and has a membership of 120 from 35 families and an average attendance at the meetings of 50. The Club owns its own dishes, knives and forks and lapboards, upon which the dinners are served. The refreshment committee reports for a year ahead, and assigns the portions of the menu to be provided by the different families for future meetings.

The East Otisco Farmers' Club was represented by Mr. and Mrs. John F. Cole. This Club holds a special young people's meeting and has a Club fair, the premiums for which are donated by the members, each member providing a premium. The Club has a membership of 30 families, but there is no limit to the membership. All-day meetings are held from

September to June, inclusive. Regular meals are served at all Club meetings.

FARMERS' CLUBS IN WISCONSIN.

Since 1866 Farmers' Clubs Have Been a Hobby.

With a district schoolhouse for a hall, entertainments and investigations were in order. Gophers were destructive and prairie chickens were supposed to be, so the Club members were generally divided under two captains for discussion, gopher hunts, chicken slaughter, and experimental trials.

Thoughts of those old days in Minnesota were recalled by reviewing the notes taken by an attendant of the late roundup of the Wisconsin Farmers' Institutes at Hudson, Wisconsin.

The ups and downs of Farmers' Clubs have been experienced by William Toole, of Baraboo, Wis., president of the Skillet Creek Farmers' Club and his talk had the full sympathy of at least one old fellow in the rear of the crowd. This hearer was taking notes and lamenting that more of his neighbors were not there, too. The notes are as follows:

"The farmers' Club is an active factor in rural uplift. Often neglected by the old and deserted for town life by the young the Club has kept up a sort of intermittent existence. There were as many farmers' Clubs in Wisconsin forty years ago as there are today. Their number has fluctuated. The farm population has been restless, yet the Clubs have stood the test and even most local papers are advocating their usefulness today. Their flexibility and wide range of usefulness make a demand for them in any community which cares for better things. They are associations for mutual help.

"A federation of farmers' Clubs would be of unlimited benefit in bringing together a summary of knowledge, experience, and practice far beyond the present outcome. Sank county, Wis., is to be the place where such a federation may be tried. Kindred organizations will be asked to join.

"The meetings of a Club vary in character. Speakers are chosen according to the subject to be considered. Talent is found inside but information is gathered from all sources. For instance, last week Prof. C. A. Ocock, of our Wisconsin College of Agriculture addressed us on ventilating, heating and lighting our farm buildings.

Prizes are sometimes offered, pupils of several schools contending. A late subject of such essays was "The Products of the Skillet Creek Neighborhood." The pupils first competed among themselves then the best essays from each school were read to us by the author. Prizes were awarded by W. E. Larson, state school inspector, S. Hood, Baraboo, and G. Hackett, clerk of the North Freedom board of education. Meetings are held every two weeks in winter and once a month in the summer. All the seed collected by experience is not thrashed out for want of time. We have considered a wide range of subjects. A farmers' life is always bringing up something new. Our activities are more than social and intellectual. Movements of a general benefit feel our influence. Sank county has a good fair. We maintain a rest and reception tent. We made an exhibit last year as a Club. We propose a more extensive affair this year. We have been interested in roads. We have done our share in producing about fifteen miles of macadam roads the Baraboo town now has. We lately had a convention and organized a county order of the Wisconsin Experiment Station."

AN OLD AGRICULTURIST.

CLUB DISCUSSIONS.

An Easter Dinner was served the Rives and East Tompkins Club, April 1, at the home of Mr. and Mrs. Frank Stringham, Jr. Owing to the inclement weather only 55 were present to partake of the splendid dinner and excellent April Fool jokes so kindly provided by the ladies. The meeting was opened by singing, "Draw Me Nearer," and a prayer by Rev. Reynolds. An inaugural address by our president was a surprise rather than a joke. He said he thought April Fools' Day was very appropriate for taking the oath of office, although he didn't make it clear just who the joke was on. It was learned that Mr. Western had been to some expense in behalf of the Farmers' Club picnic and it was voted that as long as our Club was instrumental in organizing the picnic we should reimburse Mr. Western. A fine program was then given, consisting of songs and recitations in which the young people participated. The program was concluded by a question box which proved both amusing and instructive.—Ina Stringham, Cor. eSc.



A Portion of the Upper Peninsula Delegation at Last State Grange Session.

was organized at Iron River, representatives from every subordinate being present. I. W. Byers was elected master, E. P. Peterson secretary and Wm. Poyseve lecturer. Plans are already under way for a farmers' picnic and Pomona meeting to be held at Iron River, June 24. Iron county fair, to be held in the fall, will have a Grange day and prizes will be offered for Grange exhibits. Cheap fire insurance rates are being recognized as one of the advantages of Grange membership and more than 50 policies have been written in the county in the past three months. Efforts are also being made to have some farmers' institutes held in the county this spring. Here, as elsewhere, the Grange is foremost in advocating and assisting any movement which promises improvement of rural conditions. Iron Count Patrons are enthusiastic and will hold up their end the coming year.

RALPH N. SEWARD.

gress is not just to the farmer. C. D. Woodbury, of Lansing, gave a talk on "The Place for Alfalfa in Michigan." The first alfalfa was sown in Michigan 47 years ago. The word is of Arabic derivation and signifies "best fodder." A ton of alfalfa has practically the same feeding value as a ton of shelled corn, were among the facts of interest brought out. Fifth degree work in the Grange was given at 7:30 in the evening.

COMING EVENTS.

Pomona Meetings.

Van Buren Co., at Lawrence, Thursday, April 20. Postponed from April 19. D. E. McClure, state speaker.
Allegan Co., with Ganges Grange, Thursday, April 20.
Antrim Co., at Bellaire, Saturday, April 29. Lecturers and workers' conference. State Lecturer present.

We will send The Michigan Farmer every week til Jan. 1, 1912 for only 50 cents and include one of these valuable premiums!

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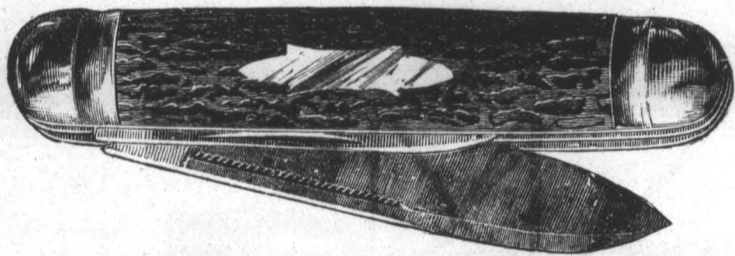
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Michigan Farmers New Census and Live Stock Anatomical Wall Chart—3 Sheets, Size 36 in. by 28 in.

This chart should be in the home of every farmer. Nothing of its kind has ever been published that contained anywhere near as much useful and necessary information for farmers.

We do not have sufficient space to mention all the contents but a few of the most important are as follows: The anatomical sheet is made up of 25 true colored illustrations, five each of the horse, cow, sheep, swine and chicken, showing of each animal, 1, the outward form of a perfect animal; 2, the skeleton; 3, the blood system; 4, the muscles; 5, the internal organs. Each bone, vein, in fact, every part of each animal is given a number, then opposite the scientific name is given. In this way you can acquaint yourself with every minute part of the animal, know its function, its relative position, and in this way you become capable of treating diseases of the animal yourself.

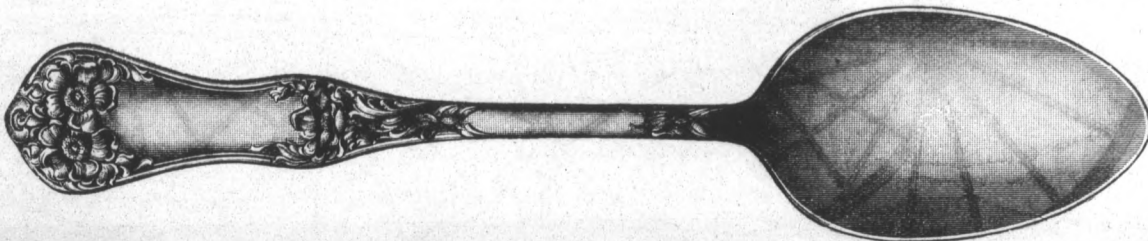
In connection one page is devoted to articles on each animal by such well known authorities as F. D. Coburn and Reese V. Hicks. Also the necessary treatment for the most common diseases of each animal is given.

The above is but one feature of this chart. It also has the new 1910 census of all towns and cities of Michigan, (these charts are, in fact, being delayed on account of waiting for the census department to give out these figures); a new map of Michigan, with congressional districts, the picture of all the governors of Michigan to date, also their time of office; pictures of all the present rulers of the world; a map of the world; a map of the United States and, in fact, enough more things to make it an excellent encyclopedia.

Free and postpaid with the above offer.

N. B.—Owing to delay on census figures orders for this chart will be held, but we will mail them as soon as our stock reaches us.

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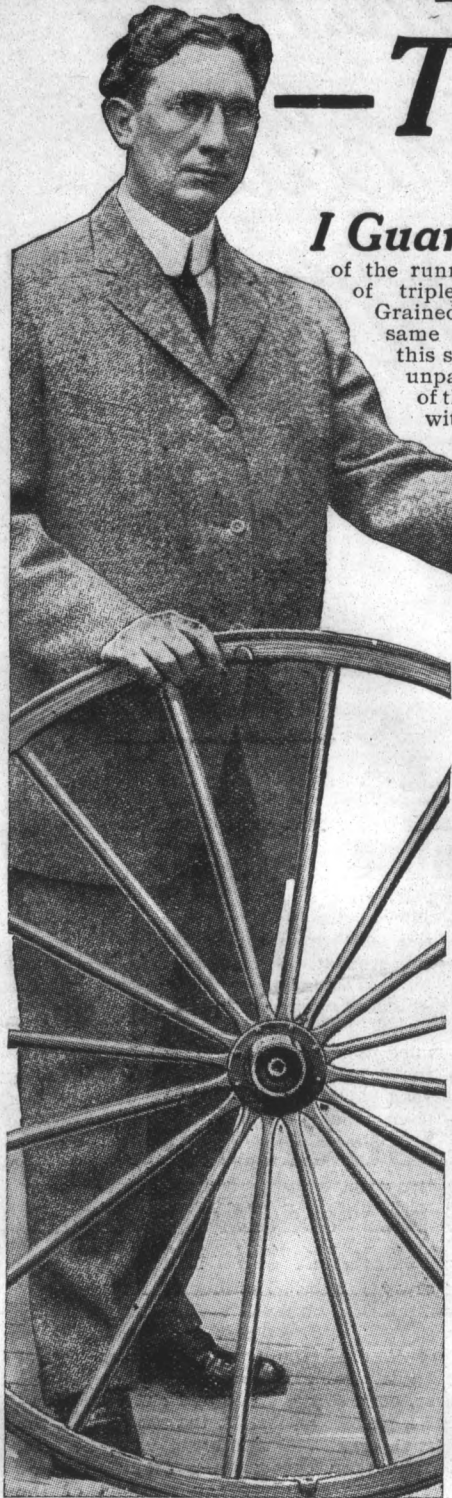
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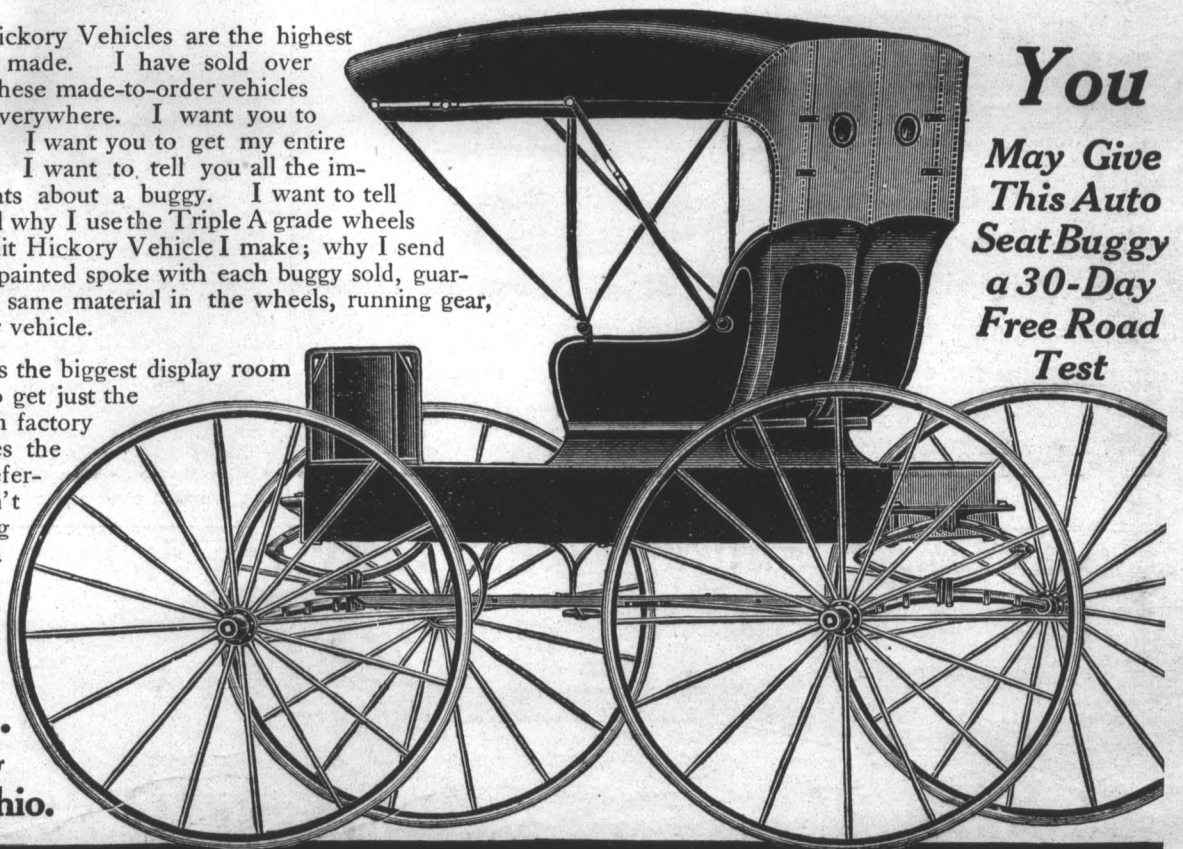
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