

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL.
ESTABLISHED 1843.

The Only Weekly Agricultural, Horticultural and Live Stock Journal in the State.

VOL. CXXXIV. No. 13.
Whole Number 3496.

DETROIT MICH., SATURDAY, MARCH 26, 1910.

75 CENTS A YEAR
\$1.50 THREE YEARS

FARM NOTES.

Keeping Up a Sandy Farm.

Please let me know the best rotation of crops to keep up my land, if it can be done without fertilizer. I have a light sandy farm. It has been seeded to clover and timothy but both are now run out and the last two seasons I cut a fairly good crop of June grass hay, so you see it is not run and I want to keep it up. Last fall I had 50 acres stumped and want advice as to what crops I had better put on same to get my stumping money back and get it into clover as soon as possible again. Would it do to sow clover on June grass sod? Would you advise mammoth or June clover? I thought of putting in some sweet corn for market, field corn to feed and a few potatoes and seed to grass at last cultivation. Would you advise a nurse crop, or grass sown alone? Which is best, wheat or rye on light soil? How much seed per acre of grass and grain should I sow and when is best time to sow? Is clover, timothy and redtop a good mixture, and what part of each? What depth do you advise to plow?

Newaygo Co. W. J. B.

The main point to observe in planning a crop rotation for a sandy farm is to make the rotation a short one and provide for the plowing down of a clover sod as frequently as possible. The plan outlined in this inquiry, planting sweet corn for market, field corn to feed and some potatoes as a cash crop, is a good one. In some seasons clover may be successfully seeded in the corn at the last cultivation. But unless weather conditions are favorable at the time of seeding and continue so during the balance of the season, success is not at all certain. On this light ground, it is the writer's opinion that the safest plan is to sow the clover seed alone without a nurse crop in the spring. This involves the loss of a season's use of the land, but as a few crops of clover have been grown and plowed down a spring grain crop can be added to the rotation as the land improves in quality, as it surely will under this method of handling. It would be better to grow some crop as suggested on the June grass sod, and sow the clover the following spring on a well prepared seed bed. Clover and timothy would make a good mixture to sow on this land, a little alsike clover being mixed with the June clover with profit. About four quarts of June clover, one of alsike and two of timothy would be a good mixture. If mammoth clover is used, the alsike may be omitted, but in the writer's opinion the mixture advised is preferable. Would prefer not to plow this land too deep at first, increasing the depth of plowing as more humus is added to the soil through the crop rotation suggested. It is much easier to keep a farm of this kind in a fairly fertile condition from the start, than it is to bring it back when it is once badly run. It is not suited to wheat growing, and the rye crop is not particularly good for this kind of land as it is a close gleaner and appropriates a large percentage of the available plant food in the soil. It may, however, be sown with profit after the corn in the fall and pastured the next season, or cut for hay, the clover being seeded in the rye with a view of removing the latter before it matures, which would give the clover a much better chance than otherwise.

Alfalfa for Northern Michigan.

I have a piece of land that was cleared last spring and a lot of timber was burnt on it, almost covering it with hardwood ashes. It was plowed down for potatoes last spring, and this spring I intend to cover it with stable manure and plow down for alfalfa. Would it be worth a trial as far north as this. The land is a clay loam, very rich. Also tell me the name of the best and earliest fodder corn for this country.

Dickenson Co.

L. N.

Unquestionably, with the preparation contemplated, this land should be in excellent condition to sow to alfalfa. The

hardwood ashes resulting from the burning of timber as mentioned, will insure an alkaline reaction in the soil which is favorable for the growth of the nitrifying bacteria peculiar to the alfalfa plant. Then the application of stable manure will give the plant a quick start that should make for an early and vigorous growth, if seeded under favorable conditions. So far as the latitude is concerned, we do not believe it would be unfavorable for the crop. At the Upper Peninsula Experiment Station, at Chatham, the writer saw alfalfa growing successfully which had been out for some years, and new seedlings in the experiment station plots looked well. In that locality it did not seem to be necessary to inoculate the soil or seed with the alfalfa bacteria for success with the crop. However, this is a wise precaution to take in any locality where alfalfa has not been previously

as the ordinary kind, the seed of which has been grown in a latitude similar to that in which it is to be sown. However, if the Turkestan alfalfa endures the winter in this case and gives a prospect of a good yield, it would probably be all right for the local conditions and might safely be sown if further areas are to be put out.

Selecting Seed Potatoes.

I have about 40 bushels of seed potatoes of good shape and very smooth. They are not hollow, but have large black spots inside; also black streaks running through them. Last summer the vines were quite badly affected by blight. Does the blight ever show in the tubers as above described? The potatoes kept well and are firm, have not started to sprout and have not been frost bitten. Will these potatoes make good seed, or had I better change?

St. Joseph Co.

SUBSCRIBER.

The ideal seed potato will be one of good cooking quality. A potato which has

person who selects this seed as to whether it should be planted at all or whether it should simply be assorted as best it may, and the best of it used for seed. Potatoes are plentiful and cheap this spring, and it will hardly pay to use seed of doubtful quality.

Fertilizer for the Spring Seeding.

I would like your advice in regard to fertilizing rye ground for seeding to mammoth clover. I seeded a piece of rye ground to June clover last spring. Had a fine catch, but the dry weather burned it out. I put it to rye again and would like to get it into clover. Would it be a good plan to sow on fertilizer and seed in the rye, then harrow in with a spike tooth harrow. The land is sandy soil.

Wayne Co.

W. H. S.

The use of fertilizer in seeding clover in the spring on fall sown grain, is recommended by some investigators as being a profitable practice. The writer has never tried it, and can not speak from personal experience regarding the advisability of such an application. It would seem, however, that for best results, fertilizer should always be mixed with the soil where it is used, and this would hardly be possible, at least in a thorough manner, when using it with grass seed sown in the spring on fall sown grain. However, commercial fertilizer is successfully used on sod land as a top dressing, and may be worthy of a trial at least on grass seed sown in the spring, by applying it broadcast at the time of sowing. But the application would not prevent the loss of the seeding from the effect of drought, as the dry weather would have just as much effect where the fertilizer is used as where none was applied. However, if the fertilizer will encourage a rapid growth of the young plants, so that they will be larger and better able to withstand the dry weather when it comes, than it will pay to sow the fertilizer. This can only be determined by a trial. In fact, the best authority to which questions with regard to the use of fertilizer can be put, is the soil on one's own farm, the conditions of which may be different than those with which any person who might advise is acquainted, and hence different results might be secured. But the addition of humus is the essential factor of improvement on dry soils in order to make a catch of clover more certain, as this will improve the mechanical condition of the soil and enable it to better retain the soil moisture in time of drought.

Sawdust as a Fertilizer.

What is the value of ten-year-old sawdust on sandy loam as a fertilizer for raising grain and seeding clover or any other crop?

Cheboygan Co.

L. H.

Sawdust has little, if any, value as a fertilizer, and where it has lain in a pile for some time, might do harm instead of good because it may have fermented to an extent which might have developed an acid property which would be harmful to the soil. The only proper use to make of sawdust as a fertilizer is to use it as an absorbent in the stable, although it might be of benefit when applied to hard clay spots by mechanically holding the particles of soil apart and preventing the puddling and packing which sometimes occurs on such soils, thus improving the drainage and mechanical condition of the soil.

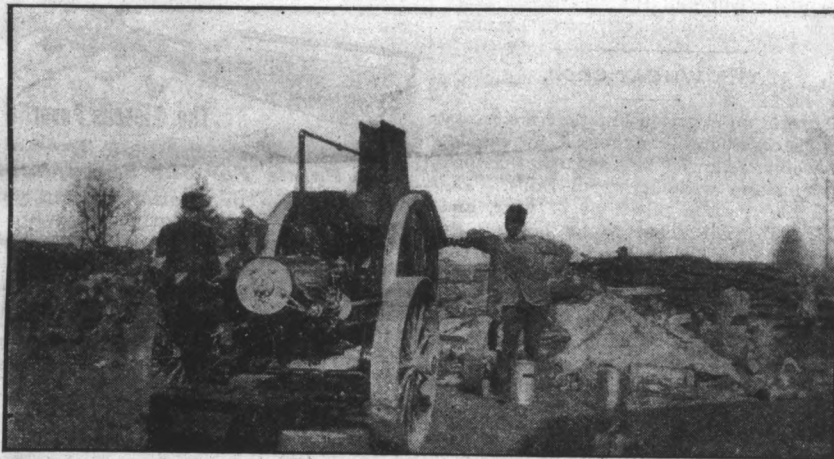
Seeding Stubble Ground.

I have a field I wish to seed for pasture. It was to rye and corn last year. I will not have time to plow it but will drag and sow 18 lbs. of alsike and timothy. The land is a hill. Soil is a loam and somewhat run. Would you advise phosphate, and how much?

Lapeer Co.

H. H. SWAYZE.

In the writer's opinion, some preparation should be given to the seed bed before an attempt is made to seed this stubble ground, as purposed. A thorough



Getting Up the Summer's Woodpile on the Farm of Geo. S. Leinberger, Bay Co.



grown. Without question this plan is worthy of a trial in Dickinson county and a successful field of alfalfa in that section will prove a valuable object lesson to others. In the writer's judgment it would be better to plant a variety of corn which has been grown successfully under the conditions which obtain in that section than to attempt to acclimate a new variety, although early varieties from further south might be profitably tried in an experimental way.

Turkestan Alfalfa.

Are you acquainted with the nature of Turkestan alfalfa? Will it make good hay and will it stand drought and not freeze out? I sowed a few pounds last summer and got a good stand, and wish to sow more if it will prove satisfactory.

Lake Co.

SUBSCRIBER.

Turkestan alfalfa has been grown to a limited extent in various sections of the country, but by the best authorities on the subject is not considered as reliable

black streaks is one which shows color when cooked, and there is probably no doubt that such tendencies are more or less hereditary in potato plants. When the seed potatoes are selected, one that has the appearance of cutting hard, or with a peculiar brittle sound, should be discarded as it will not prove to be good seed. Such tubers, if they grow at all, will not send up vigorous plants in most cases. However, a smooth, sound potato that has kept well should grow all right and make good seed. The blight affects the tuber as well as the vine in most cases, but as the blight spores enter the plant through the leaves, instead of through the roots, the planting of potatoes from affected fields is not a particularly dangerous practice, although seed from a field which matured a healthy crop is, of course, preferable. Much will depend upon the individual judgment of the

disking to make a good seed bed would probably be sufficient. A small amount of commercial fertilizer, say 200 or 300 lbs. per acre, would undoubtedly be beneficial in getting this seeding established. The seed, of course, should be gotten in as early as is practicable.

Treating Seed Oats for Smut.

Will you please publish in your paper the formula for treating seed oats for smut, and will the same treatment do for barley?

Genesee Co.

D. P. HALL.

The best and most easily applied remedy to use is the formaldehyde treatment, which is accomplished by mixing one pound of formaldehyde with 50 gallons of water and spraying the seed thoroughly, shoveling it over several times in order that every kernel may be thoroughly wet with the solution, then cover for a few hours and finally shovel over the seed to dry it out sufficiently so that it will drill well. This same treatment will also give good results with other grains. The bags in which it is put should be disinfected if previously used for smutty grain.

Treating Seed Potatoes for Scab.

I would like to have you advise me in the columns of your paper how to treat potatoes for scab. I have planted potatoes for several years and have been troubled with scabby potatoes.

Kent Co.

R. V.

As before noted in these columns, there are several methods of killing the scab fungus on seed potatoes, the most popular of which is soaking them in a solution of one pound of formaldehyde to 30 gallons of water, for one to one and one-half hours before the seed is cut. The corrosive sublimate treatment is favored by some, but on account of the poisonous nature of the material has been almost wholly superseded by the treatment above advised. Where large quantities are to be treated, formaldehyde gas is sometimes used but for the average farmer the method of soaking the seed in the formaldehyde solution is preferable.

THE SIZE OF TILE TO USE.

In reading my last Michigan Farmer, I read Mr. Lillie's writing on tile draining. Now, I came here from Illinois and have had 20 years' experience in the draining proposition in a state that has probably more tile drain than any other state in the Union, and I would like to have a few words to say on the subject, as I do not consider Mr. Lillie covers the ground thoroughly. From his writing there is one of two things evident. He either never has had any very wet ground to contend with, or his experience in tile draining is very limited. In all of his writings I have read I don't remember of him advocating anything but 4-in. tile for main drains and 3-in. tile for laterals. Now that is misleading to the average man that needs tile, as a 4-in. tile is practically worthless as a main and 3-in. are worthless for laterals, if a man has any water to carry. One of my neighbors reading Mr. Lillie's letters, started in to do some tiling and was going to put in a 4-in. main. He heard I had some experience in tiling and came to see me. I advised 6-in. main, and that don't carry the water, so where would a 4-in. main be?

Now, what do we tile for?

1. To get surplus water off in time to save our crops.
2. To draw water out of the ground and let air in to warm up our ground in the spring. Taking the first point; suppose you have a cat hole on your farm and tile it. If you have corn, beans, potatoes or any crop planted in that place and a heavy rain fills it up in June or July, and your tile are not large enough to get that pond dry in about 24 hours, that crop is gone. A 4-in. tile would eventually take that water, but a 5, 6 or 7-in. tile would take it off in time to save the crop, and a 4-in. tile would not.

Another thing, if you put in a 3 or 4-in. tile and there is a drop of say, one-half or one inch, you have only a 2 or 3-in. tile left where, in a 6-in. tile you have 5 1/2 inches left, and there will be some drops, as I have never yet seen the man that did not raise or drop a little in a long ditch some place.

So much for No. 1. Now for No. 2. The larger the tile the sooner they will drain our land and let the air in to warm up our ground in the spring, a condition very much to be desired in Michigan. The first cost of tile from 4 to 7-in. does not amount to much, as 1,000 feet of tile goes a long way and it does not cost any more to get a 6-in. tile laid than it does a 3-in. So my friends, don't, under any consideration, lay less than a 5-in. main or less than 4-in. laterals. Don't, under and consideration use a 3-in. tile.

Newaygo Co.

A. L. MARKLEY.

PEAS AND OATS FOR HAY.

I would like to hear from some one that has had experience in sowing peas and oats for hay. How much of each kind of seed should one sow per acre? What is the feeding value of the hay compared with clover? Also, what kind of commercial fertilizer should one use on corn on sandy loam?

Lapeer Co.

J. L.

In sowing peas and oats for hay, they should be mixed in the proportion of one bushel of peas to one bushel of oats by weight. That is, mix the peas and oats half and half by weight. If you are going to sow them for grain, then I would mix the peas and oats half and half by measure. For hay, sow at the rate of about three bushels per acre. You want to get them good and thick so that neither will grow very coarse. Cut them when the oats are in the milk. They should be green enough so that the oat berry will not become hard after it is cut. You want all the nutriment in the plant, rather than in the berry. Cut the same as you would clover hay. If possible, rake it up rather green and put it in the cock to be left there until well cured. It makes splendid hay then which will compare favorably with clover hay.

Fertilizer for Corn.

Any good general fertilizer that contains a good per cent of phosphoric acid and with a fair per cent of potash is suitable for corn. Soluble phosphoric acid encourages the growth and development of the nitrifying bacteria of the soil and if you can only get them started once, they assist very much in the growth of the corn plants. If the land needs manuring quite badly, I would use 300 or 400 lbs. of this sort of fertilizer per acre, and I would prefer broadcasting it, that is, drilling it in, before the corn is planted. Drill it in and work it well into the soil, and then plant the corn just as if no fertilizer had been used. The roots of the corn plant will find the fertilizer.

COLON C. LILLIE.

THE WHEAT CROP.

There is no question but that the wheat crop is considerably damaged by the ice and water, followed by freezing, thawing, and sunshine without warm rains. The ground is dry for this time of year, and wheat does not seem to be holding its own where ice lay on it and browned the tops. We have a flat field over which there was considerable ice, and at least half of it looks brown now. Two successful farmers of long experience have examined the plants and one thinks they will come out all right while the other thinks they will die. My own opinion is that a mean about midway between these two extremes will strike it about right. I do not wish to be a pessimist, but the optimistic view does not seem to be as well founded as it was just after the snow went off.

The plants in the field mentioned are browned nearly or quite to the stem, which varies in color from a fairly healthy green to a dead brown color. The places injured most are in the hollows, but this is not entirely true, for there are some bad spots on slopes where water did not stand. This field is on a tract purchased a year ago, and the soil is not in good mechanical condition, being quite destitute of humus. A field just across the highway on rich soil is injured much less, and the wheat is much larger though sowed at about the same time. This would seem to indicate that the thriftiness of the crop and condition of the soil have something to do with ice killing. The latter field was somewhat protected by trees along the highway, and appeared to have more snow upon it which might also have made some difference.

About an acre at the end of the first mentioned field was top dressed with seven loads of horse manure with a spreader early last winter, the intention being to plow this up for strawberries. Later we found it advisable to change this plan and intended to leave the wheat but it now appears to be nearly all killed. It may come on later but the outlook is not encouraging for it. It does not seem that this amount of rather coarse manure evenly spread should affect the wheat in this way unless it caused injury by allowing the ice to remain longer. Has any reader had a similar experience? The rye looks green and thrives under the ice treatment.

We are now top dressing wheat ground thinly with a spreader during forenoons when the ground is frozen. If the wheat crop fails here we surely ought to get a good stand of clover, which is what we are after on this field.

Calhoun Co.

S. B. H.



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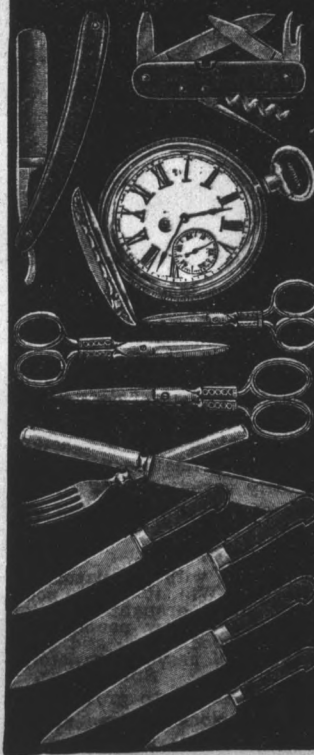
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A FEW THOUGHTS ON CORN.

A great interest has been developed in the growth and improvement of the corn plant in the past few years. Much has been said about the improvement of corn and a great deal has been accomplished. In some instances the protein content of corn has been increased by selection and breeding several per cent, and also the fat content. Varieties have been developed that bear their ears close to the ground, and varieties have been developed that bear their ears high on the stalk. One man has worked in one direction and another in another direction. Nearly every state has its corn show and the great national show was organized largely to produce a greater interest in corn as a nation, because we are the greatest corn growing nation in the world. The world depends upon America to supply the corn crop and it is perfectly proper that every thing should be done that will have a tendency to create a greater interest in this marvelous plant.

I have been thinking seriously lately about one or two phases of this question and I am inclined to the opinion that too much stress is being put upon the perfect ear of corn. Common farmers are talking about well developed ears, the state corn show offers premiums for the ear that will score perfectly. At Omaha everybody was enthusiastic and interested in the best ear of corn, the one that scored the nearest to a perfect ear, and in the ten ears that scored nearest perfect, and also in the bushel of ears which contained the largest percentage of perfect ears. I am inclined to think we are running this corn improvement too much in that direction. Its like breeding domestic live stock and having in view one single purpose. We know, of course, that the American trotting horse has been developed because speed was the principle purpose of breeding, but the breeder of the American trotting horse found out long ago that he must not breed for speed exclusively. That is, he must not breed for speed unless he kept up the stamina and the constitutional vigor of the horse. Speed amounts to nothing unless the horse is backed by constitutional vigor and stamina. Now I believe we are making some mistakes in breeding corn, along this line. I have been attempting to grow for the last few years, a variety of corn that has succeeded in taking more prizes almost than any other variety, and yet I am not pleased with this variety of corn. I do not believe that it is the best kind of corn for me to grow. You can find more perfectly developed ears with this variety of corn than with any other variety I ever grew, I will admit that; but it seems to lack vigor. It doesn't grow thrifty enough. It seems to me that the person who has been breeding this corn has simply kept in mind the one question of producing perfectly formed ears and he has allowed the constitutional vigor of the plant to deteriorate. I can raise more food for stock to the acre with other varieties of corn that I have grown where the ears would not look well at the corn show, than I can with this highly developed variety of corn.

Out at Omaha there was a very interesting exhibition of the growth of corn. Hills of corn had been cut out of experimental plots showing the result of planting one kernel to the hill, two kernels to the hill, three kernels to the hill, four kernels to the hill and five kernels to the hill. Now, the hills with one and two stalks to the hill had splendidly formed, well developed ears. They were beauties. The hills containing four or five stalks did not have as nicely formed ears, they were not as large, the kernels were not as deep, they were not filled in so well at the end, and they would not make nearly as nice a show on exhibition as the ears taken from the hills with the fewer number of stalks; but the hill with five stalks, for instance, contained four fairly good ears, one of them was rather small, three of them were fairly good ears and there were five good thrifty, healthy stalks in the hill. Now, which would be the most valuable to me on my farm, where I want to grow the corn crop to feed live stock; a field of corn with two stalks to the hill containing two nicely formed ears, or a field with five stalks in the hill containing four very good ears and five stalks of corn? I have been led to believe that the stalk and the leaf of the corn plant was 40 per cent of the food value of the entire plant, only 60 per cent of it being in the ear. Now, if this is the case, and I believe it is, the hill with five stalks is worth much more to me for stock feeding, than the hill with two or three stalks even though they have better ears,

and I am constrained to believe that the practical farmer should put more stress upon raising more corn to the acre, more and better corn plants to the acre, rather than to work entirely for a variety that will produce show ears. It may be all right for the professional corn breeder to produce show ears, but for the practical farmer, he wants the largest amount of stock food he can grow to the acre with the corn plant.

Again, I have noticed that with premium ears of corn where the kernels were very deep and the cob small, that this variety of corn growing in the field had a tendency to lack vigor. The stalks were too small for practical purposes and so I believe that the ear of corn which will win the first money at a show, and the variety of corn which it represents, is not a true guide to the farmer in his selection of a variety for practical purposes on his farm. I would rather have a little more cob, a little less kernel, a more vigorous stalk, broader, thrifter leaves, than to have a large per cent of the ears of a field typical ears that would conform to a scale of points. I like to see a pretty ear of corn just as well as any man but I like to see a good big crib full of it better, and best of all, I like to see a corn field containing both ears and stalks in the right proportion so as to get the largest total amount of digestible food from the acre for live stock, because that is what I raise the corn plant for. It seems to me that we are paying too much attention to a scale of points in the ear of corn, and we ought to give more to the corn plant itself, but that is the way I have figured it out, and I have tried to be practical. I am not looking after the variety of corn that will give me the largest per cent of score ears. I am looking after the variety that will give me the largest total amount of digestible food to the acre.

COLON C. LILLIE.

PROTECTION FROM LIGHTNING.

With the season of electric storms rapidly approaching, the adequate protection of buildings from lightning is a subject of vital importance to every farmer. This question of protecting buildings from lightning is no longer in an experimental stage, it having been demonstrated beyond the question of a reasonable doubt that when properly protected by good copper lightning rods, which have a permanent connection with moist earth, there is practically no danger of the destruction or serious damage of buildings by lightning. Statistics have been quoted in these columns upon previous occasions showing that a very considerable percentage of the fire losses in the country are caused by lightning and that in the rural districts a much larger percentage of the fires result from this cause than in the country at large. So serious a proposition has this loss from lightning become, that a state law has been passed permitting insurance companies to place buildings which are properly protected by adequate lightning rods in a separate class from those not protected, applying a different rate to each as actual experiences may demonstrate to be just. Quite a number of the insurance companies of the state have taken steps to profit by this provision of law, and at least one farmers' insurance company has been organized which accepts no risks which are not properly protected by copper lightning rods which conform with the specifications required by the insurance company. With these facts in mind the wisdom of properly protecting farm buildings with lightning rods needs no further argument. It simply resolves itself into the question as to whether the farmer prefers to take his own risk, which includes the factor of personal risk to himself and his family, as well as to the farm buildings and the personal property housed in them, to expending a small sum to secure practical immunity from this risk, and that with the prospect that the investment will be saved in the cost of insurance to him within a few years at most, since it is almost certain that the experience of the insurance companies which are segregating their risks into two classes, viz., those which are and those which are not protected from lightning, will cause other companies to follow in line and adopt a similar plan. Thus, when considered from any standpoint, it would seem the part of wisdom for every farmer to anticipate this action by installing a system of lightning rods which will afford him a desirable degree of protection and place his insurance risk in the preferred class. And it impresses travelers that progressive farmers are choosing the "good part."

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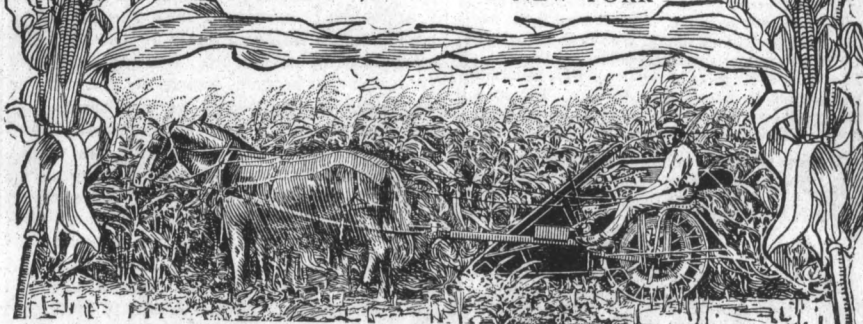
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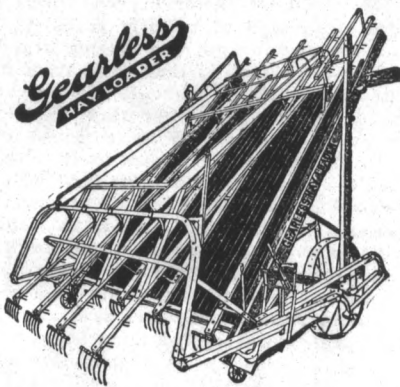
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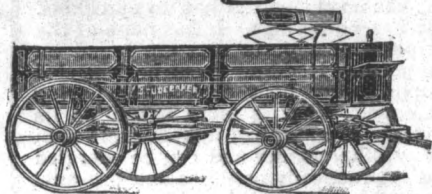
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LILLIE FARMSTEAD NOTES.

Last winter was exceedingly favorable for wheat, young clover, alfalfa, etc., because the snow came early before the ground was frozen and remained on, a perfect covering, until after the first of March. Since then, however, these crops have had more unfavorable conditions.

The wheat plant, the crown of the clover plant and alfalfa were all green when the snow first went off. They had not been even frozen this winter. There has been, however, almost continual freezing and thawing since the snow went off and some quite heavy freezing. Owing to the fact that these plants were so green in coming out from their covering of snow, I am a little fearful of results. I doubt if there was a single plant of alfalfa on my eight-acre field killed out by the winter up to March 1, nor was there any young clover injured on 30 acres of clover. I am not very fearful about this because it is pretty well protected, being so thick and making such a heavy growth last fall.

Wheat in this section got none too large a growth last fall. It was an exceptional field that got a good growth. I know of one field that got an exceptionally good growth, and that was the only one in the whole country so far as I know, but, of course, all of it was well protected until the snow went off about the 1st of March. I apprehend, however, that there will be considerable damage done by the freezing and thawing in March. I cannot see how this can be helped, owing to the tender condition of the plants at this time.

I am again mixing some alfalfa seed with the clover for seeding on the wheat this spring. Of course, not a very large per cent of alfalfa. I think it took seven bushels of clover and two bushels of timothy to seed my wheat ground, and to this I added one-half bushel of alfalfa seed, which would be only about a pound or less seed per acre. While it is not as much alfalfa, perhaps, as I ought to have sown, it is certainly enough to test it and see whether it will grow under these conditions or not.

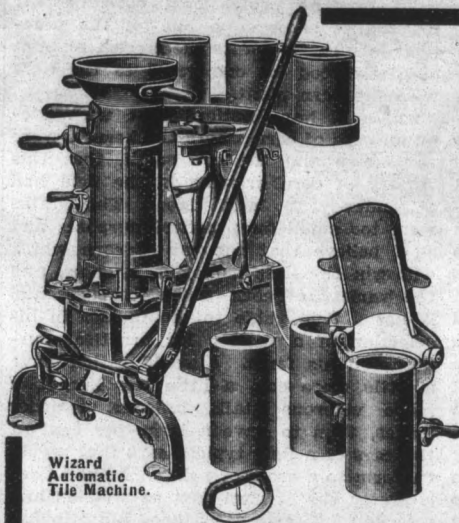
We have one field of the wheat seeded to clover already and are just beginning on the other this morning, March 15. Some think it is pretty early to sow clover seed. My idea is that conditions are just about right in order to get the very best catch on our kind of soil. The ground freezes every night and thaws during the day, which is just ideal conditions to bury the seed so deeply that it will not sprout with the first warm rain or the sun, and then be nipped afterward by an untimely frost, but it will be buried deep enough so it will not come up until permanent warm weather comes, and it will be sufficiently covered so that its roots will be protected from the sun and perhaps a spring drouth as well. Then again, sowing it now gets it out of the way so that we can do other work as it comes to hand.

COLON C. LILLIE.

A FACTOR IN GOOD CROPS.

Not the least factor in good crops is good clean seed of uniform grading. It is a too common practice among farmers to sow seeds just as they come from the threshing machine, without proper cleaning or grading. It is important that every weed seed should be screened out before sowing, and it is just as important that the small, shrunken and light weight kernels be removed in order that only the plump, vigorous seeds may be grown which may produce good, strong, healthy plants which are essential to a good yield of grain. Great improvements have been made in fanning mills and seed cleaners in recent years and no farm is properly equipped without a machine of this kind at hand, in which the seed may be screened and graded before it is sown. An hour's use of one of these machines for this purpose will be more than likely to repay the entire cost of machine, since the better yield and quality of crop which will be secured from the properly cleaned and graded seed will insure that result, even if but a small area is sown. Great interest has been shown in the movement for the improvement of the corn crop in recent years, and the greatest factor in such improvement has been conceded to be the improvement which can be brought about by seed selection. The necessity for improvement along this line is no less urgent with other grains, and by the use of a fanning mill or cleaner which will grade the seed to an even size, saving only the plump and heavy kernels, a natural process of selection will be followed which will accomplish great results in the improvement of the crops grown.

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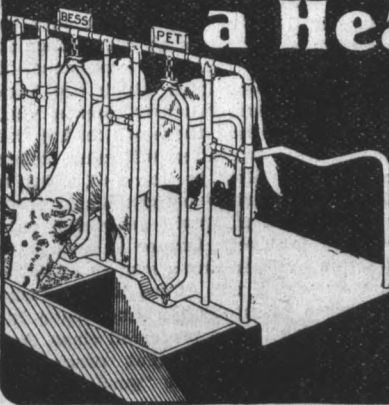
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LIVE STOCK

FEEDERS' PROBLEMS.

The Ration for the Work Horse.

How should corn meal, bran and oil meal be mixed for work horses? What is the feeding value of potatoes as compared to carrots?

Van Buren Co. C. R. M.
The proposition to mix these feeds for best results will depend somewhat upon the nature of the roughage which is to be fed the horses. The writer uses a mixture of 600 lbs. of corn, 200 lbs. of bran and 100 lbs. of oil meal, where mixed hay is fed. This makes an economical ration and the saving in this regard is often a greater one than a good many farmers realize. In figuring out this proposition of a ration for farm horses last year, the writer determined that 14 lbs. of oats, which is a good daily ration for a horse at work, would at the price of oats at that time, cost a fraction of 25 cents, while a ration composed of 9 lbs. of corn, 1 lb. of oil meal, and 2 lbs. of bran would furnish almost exactly the same nutrients and would cost only about 15 cents. Bran and oil meal are a little higher than last year, but corn is enough cheaper this season to offset that increase in price of the protein feeds. Oats, however, are considerably cheaper in price this year than last so that perhaps the saving would not be more than half that

sugar, or turnips, as well as they do carrots. I commonly raise carrots for my horses and mangolds for the cows and sheep. I have raised the Gueronde variety of carrots, sometimes called ox-heart, but like the Maude S. pretty well for stock, though they are not as fine for the table, but they are larger and will take some less work to tend them.

Carrots should be planted on a good, rich soil as free as possible from stones and not too hard, and the ox-hearts may be planted as near as 14 inches between the rows if to be tended by hand. (Maude S. will need about 18 inches between the rows), and thinned to three or four inches apart in the row; or you can put them farther apart and use the horse cultivator. When I use the horse to cultivate them I like to use the hand hoe once before they get big enough to cultivate with the horse. To harvest I take a sharp hoe and cut the tops so that about four rows, if close together, and two if wide enough for horse culture, will lie together, pulling the roots with a dull hoe and rolling them into rows between the rows of tops; or I sometimes pull by hand, throwing them into rows or bunches and cutting the tops later with a sharp knife. In this case the tops should be all one way and they can be easily gathered with a fork and fed to the cows. When I top with a knife I drop the roots into crates as I top them. They may be stored the same as potatoes but should not be kept as warm, as they heat and grow easily and light freezing does not



When the Hard Day's Work is Done.

figured last year, but yet would be a considerable item when several horses are to be fed during the work season.

Potatoes are really a more valuable feed than carrots, containing a little more digestible protein and about twice the quantity of carbohydrates and fat that carrots contain. Carrots are generally considered a better feed because more generally used, especially for horses. Horses like them and perhaps this element of palatability increases their relative value somewhat. But horses are, also, fond of potatoes when accustomed to eating them, and they will be found a valuable addition to the ration of the work horse as previously noted in these columns. Carrots and mangels are more often used because they yield better and are consequently a cheaper feed, but in a season like the present, when potatoes are cheap, they can be profitably utilized for all kinds of stock.

GROWING ROOTS FOR STOCK.

There has been a good deal said about silos, ensilage, etc., and many are investing in them. But there are many men who do not keep stock enough to afford to build a silo, who could raise roots profitably. I have raised roots for over 30 years, and have tried turnips, swedes (rutabagas), carrots, mangolds and sugar beets. I like carrots the best for horses, though they will eat rutabagas quite well; and they are just as good as any roots for cows, if sliced, but it is not safe to feed them whole to cows as they often choke on them. Horses will eat them safely whole, as they will rutabagas if their teeth are not sore, and cows will eat mangolds and large turnips safely. Sheep will do the same, but cattle sometimes choke on roots about three to three and one-half inches through.

Horses do not like beets, mangold or

hurt them much. They should be planted as early as the ground can be gotten into first-class condition, say just before corn planting.

I like to plant mangolds still earlier, putting them in rows for horse cultivating and thinning to 12 or 15 inches in the row as soon as large enough to be out of the way of the flea beetle. Tend them well the same as carrots and store the same.

Sugar beets are richer in sugar and more fattening, but cost nearly twice as much to raise per bushel as the mangolds do, so I dropped them.

Rutabagas may be planted as late as the first of June and are a cheap root to grow if not troubled by lice. Tend and store the same as beets. If fed in large quantities to cows they will taint the milk and butter and when fed to meat animals will taint the meat. They should be fed to the cows after milking, so the milk cannot absorb odors from the cow's breath while she is being milked, and I change off and feed mangolds for the last two or three weeks to cattle I am going to beef.

Turnips are the cheapest root to raise and the poorest in quality of any of the roots I have mentioned, and also the worst to taint the milk or meat. They may be sown as late as the Fourth of July, if the earlier kinds are used. Tend the same as mangolds, only they need not be hoed before large enough to cultivate if the ground is fairly clean; or better yet, the larger kinds, (cowhorn or globe), can be sown with the oats in the spring and nothing done with them till time to harvest. My neighbors report yields raised this way of as high as 156 bushels per acre, sowed at the rate of one lb. of seed per acre, and they got them too thick at that. Store and harvest the same as other roots. Feed to sheep or other store animals, and if intended for

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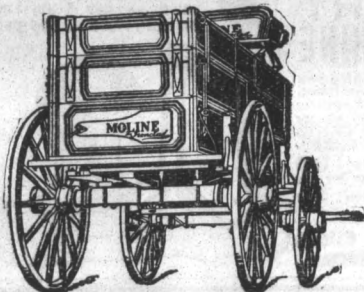
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Always mention the Michigan Farmer when writing to advertisers.

meat stop feeding them three weeks before you butcher them.

The solid contents of roots is not very great, as they are largely water, especially the turnips. But they are very valuable to keep stock in a healthy condition and keep their bowels loose, the same as grass does. Many a sheep has died with "the stretches," (constipation), that root feeding would have saved and cows are lost the same way.

Ensilage will do the same thing for cows and sheep as the roots, but is hardly a safe feed for horses, some claiming that a small quantity is all right for them and others report horses killed by feeding it to them. But roots are always a safe feed for horses, provided that they are not fed enough to physic them.

When commencing to feed roots commence lightly and gradually increase the amount to a full feed, so as not to "cly" or physic them before they get used to them. I prefer feeding roots at night to horses that are worked. Cows or sheep may be fed more roots according to their size, than horses.

Isabella Co.

F. G. SMITH.

DIPPING THE FLOCK AT SHEARING TIME.

Many flock owners practice shearing their sheep during the month of March or the early days of April and consider it advisable where lambs are expected before the warm days of spring arrive. When conditions are made favorable and the weather moderates, early shearing has numerous advantages. In the first place it affords an excellent opportunity to dip the flock and thus eradicate parasites before turning to pasture. When attention has not been paid to dipping the sheep regularly many flock owners find at shearing time they have a flock badly infested with ticks and other external parasites. To get rid of the pest without injuring the health of the sheep is not always an easy matter to solve.

Some flock owners carry the impression that early shearing is an effective means of eradicating their flocks of external parasites. The idea is based upon the fact that as soon as the sheep are shorn the pest disappears. From whence came this idea I am unable to ascertain. However, experienced flock owners know that the removal of the fleece simply drives the matured pest to cover and while perhaps it may leave the sheep temporarily as soon as the wool has made sufficient growth to afford protection his company returns and continues its blood sucking business the remaining part of the year. To shear sheep purposely to eradicate external parasites is imprudent and inadvisable as the practice only affords temporary relief.

Where the flock is badly affected with parasitic infestation early shearing affords an effective means of applying treatment to destroy the pest before seeking protection elsewhere. As a general rule, when ewes are shorn early if badly infested with parasites the pests only leave the ewes and goes onto the young lambs and because of their tender skin readily find a fertile place to continue their deadly work. The flock owner who has planned to have his lambs come during the late winter months or early spring should make a careful examination of each individual ewe and find out whether infested with external parasites of any kind. If investigation reveals the presence of parasites steps should be taken to eradicate the pest before the lambs arrive.

Where sheep are kept in small flocks and adequate protection afforded, dipping is the best and most effective means of ridding the sheep of ticks. If it is found advisable to dip the flock before lambing the sheep should be shorn at least two or three weeks before time for the lambs to come so that the ewes can be dipped without causing any detrimental effect upon the unborn progeny. If not dipped until after lambing, the lambs as well as the ewes should be dipped, as most of the ticks will be found on the lambs.

Moderate weather should be selected for doing the work. If room will permit the dipping tank should be set in the barn. The doors can be kept closed and prevent cold draughts falling directly upon the stock. It will be found, too, that it is much more convenient to handle the sheep in the barn than in pens outside. The dip should be brought to a lukewarm temperature. This temperature can easily be maintained by returning a few pails to the warming kettle and poured back into the dipping tank, one pail at a time. In this way the temperature of the dipping solution can be maintained at a uniform

point without a great deal of extra trouble and materially lessen the shock on the system of the ewes. The tank, if of the regular size, should be sunk into the manure or ground at least one-third or one-half of its height. Long, sloping chutes should be built for the ewes to walk on in passing to and from the tank. Every care need be taken in catching ewes and passing them through the dip. The work should not be hurried, but done thoroughly. After the flock has been dipped the barn should be closed up tight for several hours until the sheep dry off.

Shiawassee Co. LEO C. REYNOLDS.

AN INTERNATIONAL SHEEP FAIR.

There is a movement on foot to establish a permanent International Sheep Fair to be held in Chicago some time in September, or immediately after the fair circuit is over. This show is to be exclusively for sheep, with all breeds represented, and to include goats, collie and shepherd dogs, wool and mohair exhibits, wool grading and sorting, sheep and goat shearing contest, sheep butchering contest, sheep dipping and a lot of other "wrinkles" that will make it interesting and educational. It will not be a fat stock show, although feeding experiments will be conducted in a limited way by the agricultural colleges. It is not intended to compete in any sense with the International. In fact, a number of prominent directors of the International heartily endorse the affair.

In conjunction with this show will be held a combination sale for show, breeding and carload lots of sheep. The eastern breeders will find an outlet for their high-class stock and also for their commercial sheep. The rangemen will come to buy rams and breeding stock and the big western stud flock men will show their sheep, as well as the eastern breeders. The English breeders will also co-operate in every way to make it a success. The Flock Register and Wool Growers' Association and the leading breeders and importers are all enthusiastic over the scheme. The Hon. James Wilson, Secretary of Agriculture, heartily endorses the idea and offers the co-operation and support of the government in every way. The agricultural colleges are enthusiastic and everybody wonders why we have not had it before.

The goat breeders will join and establish a department for their stock. The railroads will give reduced fares and the express companies will make special rates for shipping out stuff that will be sold in small numbers.

HARNESS HORSE NOTES.

M. W. Savage is determined that there will be a new world's team record before the end of the 1910 racing season and one that will stand for many years to come. One of the Minneapolis horseman's principal objects in recently purchasing George Gano, 2:02½, was to bring this world's record to Minnesota and the International Stock Food Fair.

Mr. Savage has been in the habit of getting what he goes after and this fact will lend added interest to that part of the campaign to be made this fall, with Minor Heir and George Gano in an attempt to lower the world's team record of 2:02½ now held by Lady Maud C. and Hedge-wood Boy and to reduce this record to two minutes.

"I believe George Gano will be the next two-minute pacer and I also believe that before the end of the coming season, he, with Minor Heir, will be able to reduce the team record materially. I hope to place it at the two-minute mark," declared Mr. Savage a few days ago.

So fixed is Mr. Savage's purpose to get this record that he has already given definite orders to his farm superintendent, Harry Hersey, to make every preparation to reduce the team record to 2:00. Mr. Hersey has already made arrangements for the manufacture of special harness and wagon for these pacers and during all of the training season he will overlook nothing that may help to prepare for a world's record campaign. Some fair will probably have the honor of holding the world's team record for many years.

Minor Heir and George Gano are wonderfully mated in size, weight, gait and disposition. It seems almost certain that the two speed merchants will make a perfect going team and their phenomenal speed will make their efforts to lower world's records, both singly and in double harness, a sensational feature for race meets and state fairs. Both horses are in remarkably good condition and horsemen all over the country are predicting a sensational season for the Savage pair.

Dan Patch, champion of champions, is wintering unusually well and with him to introduce this great pair of young pacers Mr. Savage surely has an attraction that is very hard to beat.

A prominent Chicago live stock commission firm is advising stockmen that it has become apparent to the trade that there will not be enough cattle marketed for the next 90 days to meet the actual beef requirements, and as cattle prices for the last two months have been out of line with hog prices, further advances are expected, in spite of the fact that the greater part of the recent sales have been from \$1 to \$1.25 per 100 lbs. higher than during the low time in January. Predictions are made by this firm that good corn-fed cattle will sell higher the coming summer and autumn than in many years, and stock feeders are advised to feed all the cattle they can from now on up to next October. Grass cattle will not be marketed freely before July.

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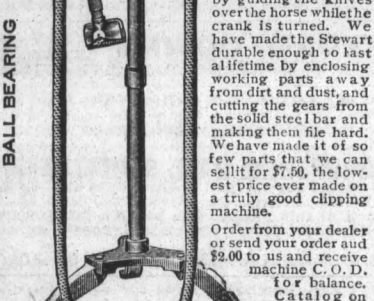
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BREEDING PURE-BRED SWINE.

The Farm, Buildings and Equipment.

The first and foremost place for breeding pure-bred swine is within the corn belt states. However, it is fallacious to argue that the corn belt can produce better breeding stock than other localities. The advantage of having an abundance of corn to feed the herd is more than offset by its injurious effect upon the breeding qualities and development of the animals. So readily do swine assimilate the great American crop of corn that for years the breeding and growing of swine for market has been confined almost exclusively to the corn belt states. The steady advance in the price of corn and hog products during the past few years, together with a more intelligent knowledge of the laws governing animal nutrition, is causing many farmers in other localities to take an increased interest in the hog as the most economical producer of meat and a universal consumer of the abundance and wastes of the farm.

The location of the farm and its natural advantages are two very important things for a man to consider before he enters the arena as a breeder of pure-bred swine. A farm situated in close proximity to desirable shipping points; that affords an abundance of shade and pure fresh water; and where clover, alfalfa, peas, and grains are readily grown, not only corn, but barley, oats and rye will afford a favorable location for a herd of registered swine. If it is nearby to a creamery or skimming station where skim-milk can be purchased at a reasonable price, no better advantages are required. With clover, alfalfa, peas and a limited amount of wholesome grain foods, fed in connection with dairy by-products, the best possible growth and development of breeding animals may be obtained. A variety of good wholesome farm feeds, supplemented with skim-milk will make very economical and efficient rations for the breeding herd and growing pigs.

Farrowing Pens, Hog Barns and Individual Houses.

The breeding herd and growing pigs should have adequate shelter both in winter and summer. In a northern latitude a warm farrowing house is essential if we save the late winter and early spring pigs. It is not necessary to erect an elaborate or expensive building, but it should be convenient, and planned so that there will be a maximum of light, warmth and pure air. More light and sunshine will be obtained if the houses are built on a north and south line, so that both sides and floor will receive direct sunlight during a part of the day. If concrete floors are laid, the nests should be floored with plank and elevated to prevent cold and dampness. The concrete floors should be laid close to the posts and base boards to prevent the hogs from rooting and rats from burrowing under the walls.

The size and shape of the farrowing houses is largely a matter of personal fancy, although sanitary considerations favor a number of small houses, rather than confining too many animals in one building. For a herd of registered swine, especially when large sows are kept for breeding, the pens should be large enough to afford plenty of room for the sow and pigs. My experience handling large sows during the farrowing period has been favorable to a house that will accommodate six sows and their litters. This gives plenty of room to construct large yards outside, so that the sow and pigs may bask in the sunshine and obtain plenty of exercise whenever the weather is favorable for them to be outside. Another point that commends the smaller house is the fact that it is many times desirable to build a fire in the house and keep watch of some especially large and valuable sow while she is farrowing. At such times the small house is easily warmed and the risk from fire is much less than when a fire is started in a larger house.

In a locality where the winters are extremely cold an excellent plan to follow in constructing winter quarters for the breeding herd and growing pigs is to build a house 16 feet wide and long enough to accommodate the number of animals that are being kept. A building of this kind may be provided with moveable partitions, so that it can be sub-divided into apartments of various sizes as the occasion demands. The best material for the floors will be concrete. The best Portland cement should be used and a strong surface coat applied. The pig's feet are sharp and will cut through unless a good hard surface is put on the concrete. The floor should be made to slope one and one-half inches to one side to facilitate the work in cleaning and enable the con-

crete to be flushed with water when the pens are cleaned. It may be built with a shed roof and should be double boarded with building paper between the boards. When building it will be better if two inch plank are used for the first four feet from the floor on the sides that are to serve as sides and ends of the pens. The rear of the building will not need be more than six feet high and the front about ten feet high. This will afford plenty of room for a man to work and be among the animals when his services are needed.

For warm weather, or for use in a locality where the winters are short and mild, individual houses are preferable, but in a locality where two or three feet of snow is the rule and not the exception, I prefer to have my herd closer together and in more comfortable houses. I have used the individual houses while growing swine further south and found them very satisfactory for that climate. Two points in favor of these houses are the ease and convenience of handling the herd when a system of pasture and soiling crops is being utilized and in case of contagious disease breaking out in the herd.

Yard and Fences.

The hog is a nuisance when allowed to run about the farm as he pleases. I have noted more failures among breeders of registered swine that could be traced to lack of adequate yards and fences than to any other cause. Breeding animals must be kept securely yarded if honest and accurate records of the herd are kept. Woven wire has revolutionized the whole system of handling breeding swine and when properly constructed it can be put in place at a moderate cost. I prefer to use a 30-inch woven wire fence with barb wires close to the top and the bottom to prevent the hogs from looking over and rooting and crawling under.

The yards should be sub-divided so that the pigs of one sex, age and size shall be kept together, for no man can feed swine in an intelligent manner unless the stock are separated in uniform lots, so he can plan his feeding to approximate the individual needs of every animal under his management.

Each sow and litter should be given separate yards and the pigs that are weaned should be divided as to sex, age and size and placed in yards away from the older animals. The dry sows should have one yard or pasture where they may be turned and given special care and feed for a few weeks prior to breeding for the next litters. There should be yards for the pigs that are unthrifty and ones that show symptoms of disease. This may not be necessary, but it will often save heavy losses, when hog diseases are prevalent in a locality.

There must be "system" in handling the herd if the business is put on a money making basis. Animals that are separated into uniform lots look better, feed better and thrive better and are more free from lice, vermin and disease and the smaller ones will not be injured by the older ones. For a herd of 100 breeding swine and growing pigs I would recommend that about 20 acres be fenced and cross fenced and a system of forage crops be provided for every month during the whole growing season. Rye, clover, alfalfa, peas, beans and corn during the spring and summer, and roots and rape during the fall and winter will provide excellent forage for the herd. Root crops may be put in a cellar or partially harvested and the swine given the run of the field for a few weeks in the fall. Good, plain, sensible houses, yards and fences are essential to success and no man should invest in pure-bred breeding swine unless he has an equipment commensurate with the needs of the business.

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Charles Shurte, the widely known sheep and lamb seller at the Chicago stock yards, said recently: "We have been getting a good many Michigan lambs, and they have sold at the top of the market. In fact, practically all the good lambs have been coming from Michigan. There will be a good demand for this class of stock here right along from our city butchers and the packers."

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VETERINARY

CONDUCTED BY DR. W. C. FAIR,
CLEVELAND, OHIO.

Advice thru this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to some one else.

Partial Paralysis in Pigs.—My pigs have recently shown some lameness in hind legs; now they are unable to get up alone. Have been feeding corn, but the pigs have not had any exercise. H. S., Salem, Mich.—Give your pigs some air-slaked lime in their feed, instead of feeding so much corn; give them some oats, oil meal and vegetables and exercise your well ones. Apply mustard and water to back every other day and give each full grown hog five drops tincture nux vomica and 20 drops fluid extract of buchu at a dose twice a day.

Itchy Horses.—My horse is troubled with what our local Vet. calls itch and he seems to be affected pretty much all over the body. S. E. G., Chison, Mich.—Clip your horses; give them a teaspoonful of sulphur, and two tablespoonfuls of baking soda at a dose in feed once or twice a day; also apply one part bichloride of mercury and 500 parts water, or dissolve six ozs. baking soda in a gallon of water and apply this, or apply one part coal tar disinfectant and 20 parts water once or twice a day.

Obstructed Teat.—There is a hard bunch about the size of a strawberry in my cow's teat which obstructs the flow of milk. She was dry in this quarter for a year but came fresh lately. I forgot to say that another quarter is small but the milk comes from it fairly free. M. S., Akron, Mich.—Apply iodine ointment once a day and give her one dr. iodide of potassium at a dose in feed twice a day and if this fails call a Vet. and have him cut it out.

Dropsical Effusion.—I have a young mare that has a soft, flabby swelling five inches wide, on breast; this bunch is painless. How should it be treated? B. S., Fenton, Mich.—Your mare has perhaps bruised herself on manger, causing a serous abscess, therefore it should be cut open, allowing vent to the water, then inject with one part coal tar disinfectant and 30 parts water twice a day.

Contracted Hoof.—Thickened and Shortened Tendons.—I have a horse that strained his back tendons three years ago. A bunch came on them just below the knee which I blistered and it removed the soreness, but his cords shortened and his hoof contracted badly. Now he walks on the toe. C. B., Redford, Mich.—I am sorry to inform you that a chronic case of this kind never gets well. However, by blistering coronet and tendons with cerate of cantharides or any other blister lightly it will do some good. Also stand the foot in wet blue clay or pack it with white rock every evening.

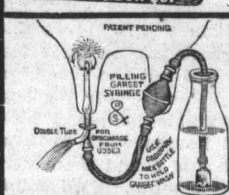
Seed Wart.—My mare has a flat spreading growth on her face somewhat resembling a wart. Four years ago I first noticed it and it was then about the size of a twenty-five cent piece, now it is three and one-half inches in diameter. What do you recommend? W. T., Cadillac, Mich.—Apply one part salicylic acid and two parts lard daily, or apply acetic acid once a day.

Bunch on Outside of Hock.—Cracked Heels.—There is a bunch on the outside of my gelding's hock and a fluid oozing out of the heel below fetlock. This horse is seemingly in good condition. W. H. C., Freeland, Mich.—Apply one part red iodine mercury and eight parts lard to bunch every four or five days. Dissolve one oz. sugar lead, six drs. sulphate of zinc and one dr. carbolic acid in a quart of water and apply to heel three times a day. Also give a teaspoonful powdered saltpeter at a dose in feed once a day.

Blood Wart.—I would like to know how to treat a two-year-old colt that is troubled with a blood wart which is situated on the side. It is about the size of a hickory nut and growing larger. F. M., Ithaca, Mich.—The simplest and best method of removing any kind of a wart is to cut it out of the skin, leaving no portion of the warty tissue to grow again. After you remove it apply Monsell's Solution of iron, or equal parts powdered alum and tannic acid.

Cow Gives Gargety Milk.—I have a cow that freshened Feb. 10; she did fine for four weeks and was giving six quarts at a milking and suddenly dried up, giving only one pint at a milking, which is quite stringy, but the cow eats heartily and does not seem to be sick.—D. M., Milan, Mich.—The udder of your cow has perhaps been infected. Wash her udder thoroughly with soap and water and apply spirits of camphor once a day. Clean her stall and stable thoroughly and give her one lb. of epsom salts to purge her, also give ½ oz. powdered nitrate potash at a dose in feed three times a day for a few days.

Bruised Knee.—Some time ago one of our horses slipped and fell on the frozen ground, striking on her knees. One knee is somewhat swollen, but did not break the skin. I have applied arnica and sugar of lead, but am inclined to believe pus is forming under the skin. C. R. M., Covert, Mich.—If the swelling fluctuates it should be opened, allowing either the pus or serum to escape. The opening should be made with a small knife, but it should be clean and free from infection. Inject one part bichloride of mercury and 1,000 parts tepid water twice a day. Keep her in a clean stall and be sure the syringe you use in treating the knee is clean. If the knee is only swollen, by applying equal parts spirits camphor and tincture iodine it will perhaps reduce it.



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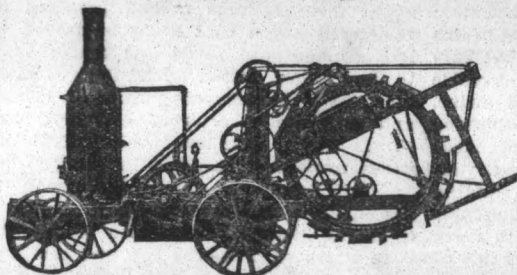


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GOOD Nicklos & Shepherd Engine 20 H. P. simple traction, can be used for plowing and threshing, with Cyper Wagon Tank and Pump complete. Write, A. G. R., Box 14, R. No. 4, Holland, Mich.

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Top Notch registered young Holstein Bulls combining in themselves the blood of cows which now hold and have in the past held World's Records for milk and butter-fat at fair prices. **McPHERSON FARMS CO., Howell, Mich.**

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THE HOLSTEIN BULL Almeda Paul De Kol No. 44206, is for sale. His sire is a grandson of Alta Posch 27.2 lbs. butter, and his dam Almeda Concordia De Kol, 21.09 lbs. butter in 7 days is grand daughter of Sadievale Concordia 30.10 lbs. butter in 7 days. Bull calves from A. R. O. dams. **L. E. Connell, Fayette, Ohio.**

HOLSTEIN BULL CALF from two best families of the breed. **C. D. WOODBURY, Lansing, Michigan.**

HEREFORDS:—Both sexes and all ages for sale. Also Poland-China hogs. **R. E. ALLEN, Paw Paw, Mich.**

JERSEY BULL CALF born May 12, '09. Dam gave 10,950 lbs. milk, last year test 54. Sire's Dam's record 10,060 lbs. in 10½ months, test 5.24. **THE MURRAY-WATERMAN CO., R. 6, Ann Arbor, Mich.**

Northern Crown Jerseys. ROYCROFT FARM, Sidnaw, Mich.

BUTTER BRED JERSEY BULLS FOR SALE. CRYSTAL SPRING STOCK FARM, Silver Creek, Allegan County, Michigan.

JERSEY BULL 3 years old, gentle, sure stock getter, St. Lambert registered, right every way. **S. H. PIERSON, Goodrich, Mich.**

Pure St. Lambert JERSEYS and some nearly pure either sex, for sale. **CLARENCE BRISTOL, Fenton, Mich. R. F. D. No. 5.**

BLACK MEADOW FARM JERSEYS ROYAL OAK, MICH.

Register of Merit Jerseys. Official yearly records. **T. F. MARSTON, Bay City, Michigan.**

LILLIE FARMSTEAD JERSEYS

We have some splendid young bulls for sale. Some of them are old enough for service. They are from cows with records of 800 to 425 pounds of butter last year. Write for description and prices. **COLON C. LILLIE, Coopersville, Mich.**

Jersey Bulls, Cows and Heifers

Island and St. Lambert breeding. Also some choice grade heifers.

DUROC JERSEY SOWS

Choice individuals and popular blood lines. Inspection invited. Full information cheerfully furnished. If you cannot visit our farm at once write

BROOKWATER FARM, Ann Arbor, Mich. A. W. MUMFORD, Manager.

BIDWELL STOCK FARM.

FOR SALE—10 Reg. Shorthorn Bulls. All good, reds and roans, from 12 to 24 months old, from the best of breeding at \$75 to \$125 each. Some of them Scotch and Scotch-topped, of the herd heading type. Also, young cows and heifers, all ages. Fifty head in herd. Farm—Two blocks from Lake Shore Station. **L. I. BIDWELL, Tecumseh, Michigan.**

DAIRY BRED SHORTHORNS—No stock for sale at present. Visitors welcome. **J. B. HUMMEL, Mason, Mich.**

Shorthorn Cows and Heifers in calf. Also bulls and bull calves. Milk and butter strains. Prices low. **ROBERT NEVE, Pierson, Mich.**

SHEEP.

Delaine Ewes—20 registered Delaine ewes for sale, bred to a \$100 ram to lamb in April, cheap if taken soon. **S. J. COWAN, Rockford, Mich.**

Oxford-Down Sheep and Polled Durham cattle for sale. **A. D. & J. A. DEGARMO, Muir, Mich.**

PARSONS OXFORDDOWNS

also registered Hornless National Delaines and Black top delaines. **Romeyn C. Parsons, Grand Ledge, Mich.**

OXFORD DOWNS A few good field rams for sale. **H. J. De GARMO, R. No. 1, Clyde, Mich.**

ROCKLAND FARM DELAINES—A few ewes bred to choice rams for the 1910 trade. Prices right. **D. E. TURNER & SONS, Mosherville, Mich.**

SHROPSHIRE HALL STOCK FARM

Will import one hundred yearling ewes and 15 rams in June for Michigan and the same for Boise, Idaho. Branch of this farm. Will make a fair price on yearling ewes or rams, also on some aged ewes with lambs at side, for 60 days. **L. S. DUNHAM & SONS, Concord, Michigan.**

130 Reg. Rambouillet Ewes for sale, descended from the best flocks and bred to a pure Van Homeyer and a ram sired by a Gilbert ram and imported dam. All in perfect health. In lots to suit buyers—none reserved. **J. Q. A. Cook, Morrice, Mich.**

HOGS.

LARGE ENGLISH BERKSHIRES.

Have a fine lot of spring pigs, both sexes. The type for profitable pork production. Vigorous and strong and of best blood lines. Satisfaction guaranteed. **F. A. BYWATER, Memphis, Mich.**

BERKSHIRES Unexcelled in breeding. Selected boars, sows and gilts. Choice fall pigs. **T. V. HICKS, R. No. 11, Battle Creek, Mich.**

FOR SALE—BERKSHIRES—Two choice Sept. boar pigs, and a few fall gilts, sired by Handsome Prince. **A. A. PATTULLO, Deckerville, Mich.**

HUPP FARM BERKSHIRES! WON 159 PRIZES IN 1909. Stock of both sexes and all ages for sale. Breeders of Guernsey Cattle, M. B. Turkeys, Barred Rock Chickens, Pekin Ducks. **GEO. C. HUPP, Mgr., Drawer A Birmingham Michigan.**

BERKSHIRES of the most fashionable type and strains. **C. S. BARTLETT, Pontiac, Mich.**

NORTHERN GROWN BERKSHIRES. ROYCROFT FARM, Sidnaw, Mich.

PURITAN HERD of CHESTER WHITES The peer of any in America. Spring pigs for sale. **WILL W. FISHER, Watervliet, Michigan.**

Improved Chesters—Bred sows all sold. A few young boars ready for service. Orders taken for spring farrow. **W. O. WILSON, Okemos, Mich. (Both Phones).**

A DAMS BROS. Improved Chester Whites, Litchfield, Mich., won 125 premiums in '09. Booking orders for bred sows; boars ready for service. Buff Rock, W. Orington, W. Leghorn cock's. Shorthorn bulls ready for service

Duroc Jerseys—Fall pigs of either sex for sale, also Buff Cochins chickens and eggs. **M. A. BRAY, Okemos, (Ingham Co.) Mich.**

DUROC JERSEYS CAREY U. EDMONDS, Hastings, Mich.

DUROC-JERSEYS—50 bred and open sows, plenty of growth and quality. Boars ready for service. Prices right. Write **J. C. Barney, Coldwater, Mich.**

MULE FOOTED HOGS—All ages for sale. Largest herd in the U. S. Five big herd boars. **JOHN H. DUNLAP, Williamsport, Ohio.**

O. I. C. bred sows all sold. Have a few hand. **GEORGE P. ANDREWS, Davison, Mich.**

O. I. C. REGISTERED PIGS, 10 to 12 weeks from World's Fair winners. **Glenwood Stock Farm, Zeeland, Mich. Phone 94.**

O. I. C.—Orders booked for spring pigs from State Fair winners. **C. J. THOMPSON, Rockford, Mich.**

30 P. C. Fall Pigs—by two champion boars. Booking orders for weaned pigs by 10 different boars. **WM. WAFFLE, Coldwater, Mich.**

Prize Winning POLAND CHINAS. Japanese Pekin Ducks. Embden Geese and Buff Turkeys. **Zach Kline, Three Oaks, Mich.**

P. C. SOWS Bred for spring farrow **WOOD & SONS, Saline, Mich.**

LARGE IMPROVED YORKSHIRES—September farrowed pigs, either sex, each. Satisfaction guaranteed. If you want the most economical feeders possible, breed your sows to a Yorkshire boar. Yorkshires are sure to be the most popular breed of the future. **COLON C. LILLIE, Coopersville, Mich.**

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

LIVE STOCK NOTES.

There was an interesting gathering of agriculturists at the recent banquet in Joliet, Ill., more than 450 farmers, representing average wealth of \$40,000, participating. An important feature was the plan of the leaders to bring about increased interest in the production of corn by offering a prize of \$500 for the first 200 bushels of corn produced on an acre of ground in Will county. In response to the toast, "The Hog," Howard Francis, a breeder of swine, responded: "It has generally been supposed," he remarked, "that almost any old place was good enough for a hog, but in years of experience I have found that good, clean quarters are as much appreciated by the hog as by any other animal and that it thrives under kindly treatment. This helps in a material way, because the animal grows fatter."

Charles Shurte, the widely-known seller of sheep at the Chicago stock yards, remarked recently: "I never saw before so few lambs and sheep in the near-by feed lots at this season of the year, their owners being disposed to get rid of them whenever they are in killing condition. It will not pay to keep healthy flocks on high-priced feed after they are fit for slaughter, but I advise finishing anything in the mutton line that is not yet good. Many northern Colorado flocks of lambs are stopping off at the feeding barns for shearing. They are generally good in quality and furnish satisfaction. Thus far lambs purchased here for shearing and feeding have done extremely well, and it looks as if they had been bought well worth the money, although at the time purchased they looked rather high. This is the natural thing, the buyer when the markets are going up making money as a rule."

Jacob Weiss & Sons, the widely-known stock feeders of Iowa, who marketed at Chicago in a recent week 16 head of fancy grade Shorthorns and Herefords that tipped the scales at 1,548 lbs. at \$8.10, stated that the cattle were bought by them in the South Omaha market last October for \$5.20 per 100 lbs., their average at that time being 1,140 lbs. Regarding the method of their preparation for the market, Mr. Weiss said: "I started them on snapped corn, with alfalfa and clover hay as roughness. Later on they were given chopped ear corn until December, when we gradually changed the ration to shelled corn, with some oil meal and oats. During the last month I changed from alfalfa to timothy hay. The cattle were on full feed about one hundred days."

Jacob A. Ryther, vice-president of the National Live Stock Exchange Bank of Chicago, after returning from his recent visit to the cattle and hog raising sections tributary to the Missouri river markets, is emphatic in predicting poorly supplied live stock markets. "I rode the western country from St. Paul to Kansas City," he says, "and never before saw or heard of such a scarcity of live stock as now confronts the markets of the country. I saw fewer cattle and hogs than ever before at this season, and all the information I was enabled to gather was of the same character. Sellers have been draining feed lots for the past three months, and extremely little replenishing has taken place in that time. A heavy shrinkage in the receipts of live stock at all western markets during the next six months will be recorded."

A country packer living in Central Illinois says: "Fifty head of 140-lb. pigs were sold in a recent day at a farm sale held at Griggsville for \$16.50 per head. Our buyers in Brown and Pike counties do not remember the time when hogs were so scarce. It is claimed that up to next fall they will not have within 60 per cent of the hogs to be marketed that they had a year ago. They expect to see hogs higher and believe that they will bring over \$11 per 100 lbs. before they get any cheaper."

The big drop in cotton prices has put mill men in a position where they can use more cotton and less wool, and this is clearly a weakening factor in the wool market. Small amounts of wool are being contracted in Utah, where buyers are reported to have paid 19@23c per lb. within a short time, with sales chiefly at 21@22c.

Colorado sheepmen are marketing their holdings of lambs with freedom, and extremely high prices have been paid at the Chicago stock yards, their average quality being extremely good. It is stated that fully 75 per cent of their holdings consist of Mexican lambs, and these will be sold unshorn to killers, while heavy shearing stock will be clipped at feeding stations.

Recent advices from Greeley, Colo., are that only about 40 per cent of the usual number of sheep are being fed in that part of the country, owing to the failure of the hay crop last year. Nearly all the feeding is done in the open, and very little shearing is done, as the sheep need their fleece to keep them warm and are apt to die when deprived of it.

Late reports received by a prominent Chicago live stock commission firm from various cattle feeding districts indicate an unusually small number now on feed. The reports are gathered from the main house and its nine branches and go to show that in most western regions there is a deficiency of from 25 to 50 per cent compared with last year. Kansas City and Denver report a decrease of around 50 per cent, and the same decrease is reported in Texas and Oklahoma. Omaha and East St. Louis report a decrease of 25 to 35 per cent, and from St. Joseph word comes that there are 40 per cent less cattle on feed than a year ago. South St. Paul reports only 50 to 60 per cent as many cattle feeding as a year ago, and Sioux City states that the number feeding is 65 to 75 per cent of that of a year ago. In the eastern feeding districts a much better showing is made,

with Buffalo reporting about the same amount of cattle feeding as a year ago.

The Live Stock Report, published at Chicago, has the following: "The prospective supply condition is not dissimilar from that of 1908, when liquidation was heavy the early part of that year, the result being a sharp upward turn in the market the latter part of March and April. Long-fed heaves have been conspicuous by their absence for many weeks, while for several months one-half to two-thirds fat steers have been in record-breaking proportion to total marketing. This is beginning to tell on the supply in the feed lots, and if normal conditions prevail in the beef trade we should continue to see a good, strong, healthy trade in cattle."

A prominent cattle seller who has recently traveled extensively all over Salline, Cooper and Pettis counties, three as good cattle feeding counties as can be found in the entire state of Missouri, reports that cattle are scarcer than they were ever before known to be at this time of the year.

F. E. Braubaker, of Richland county, Ohio, well-known as a sheep breeder, has what is well known as the combination sheep, which is excellent for both mutton and wool purposes. He says he uses the Southdown and Oxford breeds, switching off to the Delaine cross as often as once in three or four years. This has been found a highly profitable cross, as the sheep are extremely hardy and have an extra heavy fleece.

A St. Joseph, Mo., stock yards official makes the statement that there are 225,000 cattle down in the southwestern range region of Texas that will be ready to ship to the markets of the country before long. He says reports from that region are encouraging, cattle having come through the winter in good shape, and the country to the south and southwest of San Antonio is in excellent condition. These cattle will be shipped chiefly to Fort Worth, Kansas City, South St. Paul and East St. Louis.

Lambs dropped in February of this year in Idaho have been greatly favored by the weather, and the ewes have been well cared for.

Horses had a better outlet last week on the whole, because the supplies were kept down to much smaller proportions than those of a week earlier or a year ago. Eastern shippers were spirited buyers of fancy heavy drafters by Wednesday, paying \$200@250 per head for good to choice ones, while the plainer ones were taken at \$175@195. Feeders also met with a good eastern inquiry, sales ranging at \$165@220, while expressers and city delivery horses were purchased for \$150@215. There was a large sale for farm mares at \$140@175, and drivers and saddlers were more active at \$150@300. An eastern shipper paid \$315 for a fancy Percheron 1,900-lb. chunk, and an Illinois country shipper auctioned off a load of draft and wagon horses at \$160@240, receiving \$480 for a pair of matched black Percheron geldings for eastern shipment. Southerners purchased horses all the way from \$75 up to \$200.

CATALOGUE NOTICES.

The Aspinwall Manufacturing Co., of Jackson, Mich., send circular matter describing and illustrating their new double cylinder high pressure sprayer with broadcast and orchard attachments for spraying crops and trees.

The Flansburgh & Potter Co., of Leslie, Mich., publish a new illustrated catalogue and price list of their strawberry plants and other small fruits. These plants are grown by them on their own farms.

The Harvester World, a magazine published by the International Harvester Co., of Chicago, contains in its February number some interesting articles relating to the extensive line of business in which this company is engaged.

Burpee's Prize Supplement for 1910, published by W. Atlee Burpee & Co., Philadelphia, Pa., is a booklet giving information with regard to prize winning products grown from their seeds in the several states of the country, with photographs of some of the prize winning exhibits.

Strout's Farm Catalogue No. 30, issued by E. A. Strout Co., Boston, New York, Philadelphia and Pittsburg, is a 100-page catalogue of large size filled with descriptions and illustrations from photographs taken on the hundreds of farms in every section of the country that are listed in this catalogue by the world's largest farm agency.

The Farmers' Handy Wagon Co., of Saginaw, Mich., have published a silo book treating of silos and silage, and its use for all farm animals, crops for silage purposes, filling the silo, etc., which will be sent free to any reader who is interested in their line of silos.

Fairbanks, Morse & Co., of Chicago, Ill., have just issued their new catalogue, No. 113, describing their 1910 line of two-cycle marine engines. Their four-cycle, heavy duty marine engines are described and illustrated in their catalogue No. 112-B, which contains complete information covering this line.

L. J. Farmer, the strawberry man, Pulaski, N. Y., send a 1910 catalogue listing their fine line of small fruits and other specialties.

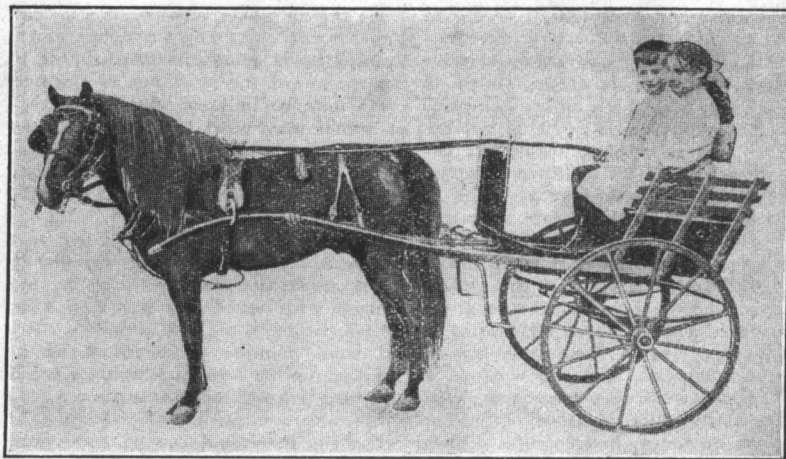
Maloney Bros. & Wells, nurserymen, of Dansville, N. Y., growers of high grade fruit trees, send out a new catalogue fully describing and illustrating their line.

The Racine Hatcher Co., of Racine, Wis., manufacturers of the famous Racine hatching, incubators and brooders, send a circular of information fully illustrating and describing their complete line of these goods.

Iwan Bros., South Bend, Ind., manufacturers of hardware, implements, and tinners' specialties, send an illustrated catalogue describing their line of ditching tools and other specialties needed upon the farm, including hay knives, post hole diggers, etc.

BOYS AND GIRLS!

A Shetland Pony, Cart, Harness, Saddle, Bridle,



This is the Pony, Cart and Harness. The Saddle Appeared in Previous Issue.

A COMPLETE OUTFIT FREE!

Here is that chance you have been looking for. An opportunity to secure for yourself a **REAL LIVE SHETLAND PONY**

together with the Buggy, Saddle, Harness and Bridle. The best part of this is that it won't cost you or your parents one cent. It is absolutely FREE. We are not going to sell this Pony and Outfit, but are going to give it away.

How to Work to Win "Beauty"

If you want this dandy Shetland Pony and Outfit, simply send us your name and address today, just as soon as you can. Our plan is absolutely fair and we give no child any advantage over any other child. All will be given the same opportunity. Just imagine the fun you can have driving to school, to the post office and everywhere with this clever little pony. You must surely send us your name and address today because we can't give you the pony unless we know your name and address. It won't cost the winner anything but a little of his or her time during the next few weeks. We pay all charges for crating, shipping, etc.

Send us your name and you will hear something which will please you immensely.

Cut out and sign this Coupon or copy on a Postal Card and Mail Today.

Pony Contest Editor, Care of the Michigan Farmer, Detroit Mich.

Please send me Certificate of Entry and pictures of "Beauty". I haven't any Shetland Pony and want to own "Beauty".

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P. O. STATE.....

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

EXPENSE OF MAKING BUTTER IN A CREAMERY.

My attention is called to an article in the issue of February 5, entitled, "Effects of the Oleo Law," by Mr. C. L. Ross, of Washtenaw county, which on looking over carefully I consider merits a reply. Mr. Ross, in speaking of the excessive price of butter, 40c a pound to the consumer, goes on to give the figures from a local creamery to show that one reason why the cost of butter is high is because it costs so much to manufacture that butter at a local creamery, and says that it cost over \$5,000 to manufacture something like \$42,000 worth of product, and this excessive cost of manufacture must be added to the price of butter, which makes the price high to the consumer. Now, I do not believe that this is a good argument, because ten years ago, for instance, it would have cost the creamery just as much to make that butter as it did last year and yet ten years ago the price of butter was considerably lower than it is now, consequently, the cost of making in the creamery cannot be held responsible for the high price of butter. The high price of butter comes largely from the law of supply and demand, and not because of the increased cost of production. With the farmers' product, the cost of production as we all know, has very little to do with the market price of the products which he produces. The farmer cannot add to the cost of production of any given article which he produces a certain percent of profit as a manufacturer does and then ask that price for his product. As a matter of fact, the farmer has never had much to say about the price of his product. He simply produced it, put it upon the market and took what the other fellow seemed willing to pay for it. He had no choice, and practically nothing to say about the price of his product.

Again, I do not think Mr. Ross does the creamery justice when he points out that it cost \$5,000 to make \$42,000 worth of butter in a creamery. If we do not consider this question carefully, we are led to believe that this might be excessive for the manufacture of this product, and yet suppose we didn't have a creamery. Suppose that every farmer had to make his own butter. Wouldn't it cost each farmer something to do it. If all the different patrons of this creamery manufacture their own product and put it upon the market should they not receive living wages for the time used in manufacturing it? I am of the opinion that if they would charge a reasonable wage for manufacturing their own product, and putting it upon the market that it would cost much more than \$5,000. It is my belief that, by the farmers co-operating and taking their milk to a central point, employing one man to make the butter for the whole neighborhood and having division of labor, that their product is manufactured and put upon the market much cheaper than it could be done at home. Of course, if the farmer allows nothing for his time and is willing to give this and say nothing about it, that is a different question. But can he afford to do it? Ought he to do it? Ought not the consumer to pay the farmer a fair wage for the time occupied in making this butter? Is not that legitimate charge? I know that in the past some of the staple agricultural products have been produced on the farm and sold below the cost of production. When you have to sell wheat around 50c a bushel, taking the rental of land and wages for the farmer, the farmer practically works for nothing and boards himself. Now, he has done that kind of business long enough. The time has come when consumption has caught up with production so that the farmer can now begin to get something for his labor; and it is not good argument to claim that the cost of production in this one instance has enhanced the value of the finished product to the consumer, because, as I say, in the past, or ten years ago, there would have been practically the same expense when the butter was retailing at 22 to 25c per lb. Now this same creamery referred to manufactured 2,617,000 pounds of milk and 41,670 pounds of cream into butter, and manufactured 392,119 pounds of skim-milk into cottage cheese and sold it for \$42,410.66, and it cost them \$5,549.99 to do this work. It seems to me that this is not excessive cost for manufacturing. It includes not

only labor, but taxes, fuel, freight, and every other item which enters into the manufacture and distribution of this product. I say again, I do not believe that the farmers of that same community could have manufactured this product and put it on the market for this amount of money, had each charged a fair compensation for his labor.

THE COW-TESTING ASSOCIATION.

The advantages of the Co-operative Cow-Testing Association must appear to any one after a little thought. It is highly important to the man that keeps cows and feeds them a costly ration that he should constantly know where he is at. Of course, he can know without testing his cows individually whether he gains or loses in the whole venture, but he cannot know what each cow is doing and this knowledge is indispensable to him if he wishes to get the most out of the herd.

He may be milking only ten cows, five of which may yield him an annual profit of \$5.00 each above the cost of maintenance, four may play even and the remaining one may yield him a profit of \$25.00.

He has made only \$50 profit per year on his herd. If he had owned one more cow as good as the last he could have dispensed with eight and still had a profit of \$50, while, if all had been like the four he would simply have found at home market for his feed and would have done his year's work for nothing.

The successful dairyman must know what the individual cow is doing and he can not know this unless he tests her. If he desires to improve his herd by better breeding he must breed from his best cows and he can not discover them without using the Babcock tester.

But can he not test them himself? Yes, he can if he will. But will he? Does he? In almost every case, no. There is no cause to ask why he does not but the simple fact is conclusive proof that he will not, to any great extent, for some time to come. The Co-operative Association is the only solution of the problem. Just how we should organize it will depend somewhat on local conditions. If the herds are large the man who does the testing can sample and test the milk from one herd per day once in each month, but if the herds are small, containing from five to ten cows, the work will prove expensive unless more than one herd can be tested each day in the month.

This matter can easily be arranged. After a little practice any one possessing ordinary ability should be able to sample and weigh milk correctly. If the sampling and weighing be done by the dairyman then two or three herds can be tested each day. This will greatly lessen the expense of the work and make associations possible where otherwise they could not be formed. It may be urged that the owner of the cows could not be trusted to sample and weigh the milk but we cannot escape trusting him to some degree even though the weighing and sampling be performed by an outside party. The man who does the testing weighs the feed only one day in the month and the owner of the dairy might, if he chose, feed a lighter ration on that day and thus deceive the public in the real cost of production. But I do not believe there is much danger along either of these lines. The owner of the herd is anxious to get the facts about every cow. He could not afford to deceive the tester, Oceana Co. W. F. TAYLOR.

MILK SEDIMENT TEST DEVISED.

A device which gives the operator accurate information on the amount of sediment in a lot of milk has been tried out with success. The tester consists of a cylinder of metal surrounded by a steam jacket for warming the milk. On the lower end of the cylinder is fitted a cap within which is placed a disc of absorbent cotton which collects the sediment as the milk is poured through the tester. When the milk from one farm is tested, the disc may be quickly replaced by a clean one for testing the next lot of milk. By the aid of such an apparatus it will be easier to grade the milk of individual farmers.

SUFFICIENT PROTEIN.

Is there enough protein in the following to make a good ration for cows? Corn meal, bran and buckwheat, ground? How much protein does the buckwheat contain?

Ingham Co. B. W. C.
The proportion of corn meal, bran and buckwheat is not given, consequently no

Punch Holes In His Claims

52 Disks from Common Cream Separator.

Would you buy 40 horses, to do the work of one, simply because "a dealer with horses to sell" claimed you needed 40?

Will you buy a complicated cream separator just because "a manufacturer with only complicated machines to sell" claims you need disks? Not when you can punch holes in his claims with the fact that simple Sharples Dairy Tubulars do the work better.

You want no disk-filled separator when farmers all over the world are using simple, easy-to-clean, wear-a-lifetime Sharples Dairy Tubulars which have neither disks nor other "fillings" and yet skim fastest, cleanest, easiest.

Tubulars are The World's Best. Probably replace more common separators than any one maker of such machines sells. Sales exceed most, if not all, others combined. World's biggest separator works. Branch factories in Canada and Germany. Write for Catalog No. 152.

The Only Place Inside Sharples Dairy Tubulars, 30 Yrs

THE SHARPLES SEPARATOR CO.
WEST CHESTER, PA.
Chicago, Ill., San Francisco, Cal., Portland, Ore.
Toronto, Can., Winnipeg, Can.

Farmer Agents Wanted

You can earn your own Cream Separator by giving a little time and effort to telling your friends and neighbors about the most wonderful invention in Cream Separator History—

THE CHICAGO SPECIAL
It is low Supply Can, easy cleaning, easy turning, few parts, dust and oil proof frame, enclosed gearing, high quality construction, and long life are fitting accompaniments of this wonderful new patented Skimming Device.

We make an attractive offer on the first machine in a community. Write at once for particulars. Do It Now. Address Kurtz & Company, 626 Monadnock Bldg., Chicago

If you buy feed, why not try DRIED BEET PULP.

You will not lose, and the experience of hundreds of users demonstrates that you will make by doing so.

It will improve any ration for any class of live stock.

Order of your dealer, but if he cannot supply you write to

T. F. MARSTON, Bay City, Mich.
State Sales Agent for the Mich. Sugar Co.

Dairymen, Take a Look at the Strite Governor Pulley. It's the original and "only thing" for driving cream separators with gasoline engines. Once tried always used. P. R. Y. O. R. E. Ask your dealer for a "STRITE" or write us direct. Don't take an imitation. Strite Governor Pulley Co., 303 So. Third St., Minneapolis, Minn.

CALVES RAISE THEM WITHOUT MILK
BOOKLET FREE.
J. E. Bartlett Co., Jackson, Mich.

\$1.95
AND UPWARD

THIS OFFER IS NO CATCH. It is a solid, fair and square proposition to furnish a brand new, well made and well finished cream separator complete, subject to a long trial and fully guaranteed, for \$15.95. It is different from anything that has ever before been offered. Skims 1 quart of milk a minute, hot or cold, makes thick or thin cream and does it just as well as any higher priced machine. Any boy or girl can run it sitting down. The crank is only 5 inches long. Just think of that! The bowl is a sanitary marvel; easily cleaned and embodies all our latest improvements. Gears run in anti-friction bearings and thoroughly protected. Before you decide on a cream separator of any capacity whatever, obtain our \$15.95 proposition.

AMERICAN SEPARATOR CO., Box 1061, BAINBRIDGE, N. Y.



THIS BALL-BEARING SCALE Guaranteed U. S. Standard AT WHOLESALE PRICE

Let us save you \$25 to \$50 on the finest scale made. The ball-bearing principle alone doubles its value—gives a freedom of movement that prevents Binding and Clogging. The only scale sold at wholesale price to farmers on 30 Days' Free Trial—on a full 10 Years' guarantee. Requires no pit-digging, no wood except floor. Don't take the other fellow's weights. Write for price, freight paid, free trial and guaranty. Use nearest address.

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one can judge or find the nutritive ration. Ground buckwheat has about the same analysis as corn meal and would not improve the ration so very much so far as increasing the per cent of protein is concerned. But if the buckwheat had been made into flour and the middlings saved for feed, then the percentage of protein would be increased. Now, there is no doubt but what there is protein enough in these feeds for cows to do well, providing a sufficient amount of it is fed. A cow can get sufficient protein out of any good, wholesome food, if they are fed liberally enough. But that is not the idea. The idea is to get the protein and the carbohydrates in such a proportion that you will not feed either one to excess to have a sufficient amount of both for the cow's purpose. That is the purpose of a balanced ration. An unbalanced ration is always an expensive ration, while a balanced ration is an economical ration because of the complete assimilation of the food nutrients.

FEEDING COTTONSEED MEAL.

Will you give me enlightenment on how to feed cottonseed meal? I have purchased some and would like to find out how to get best results from it. What would be a fair ration once a day for three-year-old steers? How much less should I feed two-year-olds? How would it be for breeding ewes and milch cows or horses? Is it a better feed than linseed meal?

Ionia Co.

B. M.

Cottonseed meal is a very concentrated food, and hence it is not desirable to feed this feed alone if possible. It is better mixed with some other grain food like wheat bran, corn-and-cob meal, ground oats, or something of that sort. Something to give it more bulk will give better results. For fattening steers I know of nothing any better than ground corn-and-cob meal and cottonseed meal, and then you could mix this equal parts by weight, but if you have no corn, you can mix it equal parts with bran, or in fact, any other feed. Two pounds per day per head would probably be all the cottonseed meal that a steer ought to have. You might gradually increase this a little as you finish them. Cottonseed meal is a good feed for horses when it is fed with other grain and it is a most excellent feed for dairy cows, but it also should be mixed with other grain. It is not a desirable food for ewes or lambs. I would not want to say that it is a better food than oil meal. It is much of the same nature, and yet oil meal is much more laxative in effect than cottonseed meal and in some instances is a better feed on that account.

WATER POWER FOR CREAMERY.

Would it be advisable to put in a creamery for making butter on a water-power site? And do you think the co-operative creamery the best?

Muskegon Co.

D. G. A.

If the water power is reliable and you can get uniform motion there isn't any reason why you cannot operate the machinery in a creamery by water power, just as well as any other power. But the question of power is not so very important in a creamery because you do not need any great amount. Consequently, I would not locate a creamery on a water site if it affected the value of a creamery in any other way. For instance, if the creamery had to be located off from the public road, or too far out from a town, I would not think of putting it there simply because I had water power. I would rather put the creamery where it would be the most convenient for the patrons and for the creamery to dispose of their products, etc., than to locate it where one had cheap water power. In the creamery business you must have steam. You must have a boiler because you cannot clean up without having a large amount of hot water and you must have steam for sterilizing, in order to keep the churn, the separator and all the various utensils used in a creamery in prime condition. Consequently, as long as you have to have a boiler, it doesn't take very much more fuel to generate the extra steam to run an engine, and therefore, I would say that water power for running a creamery would be a secondary consideration.

Co-operative Creameries.

In a community where the farmers are willing to work together, a co-operative creamery is undoubtedly the best thing for the farmer, but in many localities the farmers seem to be suspicious of each other, lack confidence and will not work together to the best advantage. In such a community, the co-operative creamery has hard sledding, because it is difficult

to have a well defined policy unless the people are willing to give up some of their personal ideas for the benefit of the whole. In a community like this I am inclined to think a co-operative stock company, where you reduce the number of stockholders to a few, would be more apt to run the business in a more business-like way, than a whole community of farmers. On the other hand, if the whole community of farmers believe in co-operation and are willing to work together and not allow their individual differences to hinder and block the business, then they can get a little bit more out of their milk by having a purely co-operative plant, rather than a stock company or a proprietary plant.

BEST CORN FOR SILAGE.

Being quite extensively engaged in farming and stock raising I desire to ask your advice or opinion as to the best kind of corn to plant for ensilage. I am thinking of building a silo next summer, and knowing you have had considerable experience along this line I thought you would be able to give me the information I am seeking. I am not keeping cows at present but expect to use the silage to feed calves and young cattle I wish to keep over winter as stockers.

Clare Co.

J. H. L.

Personally, I prefer dent corn to flint corn for silage, and I think that the concurrent opinion of people who raise corn for ensilage will agree with me, yet the chemical analysis of the two varieties seem to give flint corn a little higher per cent of protein. Nevertheless, I believe you can raise more tons of ensilage to the acre of dent corn than you can of flint, and I like the way it grows and handles better. We want to raise as large an amount of food to the acre as possible with the corn plant. In raising corn, ordinarily, we want to feel safe in this climate that we have an early enough variety so that it will thoroughly mature before frost. With ensilage we do not have to be so particular. The corn don't have to be thoroughly ripe for ensilage, consequently we can use a little larger variety. Now, this tells the whole story. Raise as large a variety of dent corn as will mature in your climate sufficiently to make good ensilage, which means that it should get far enough advanced for the kernels to be glazed and dented.

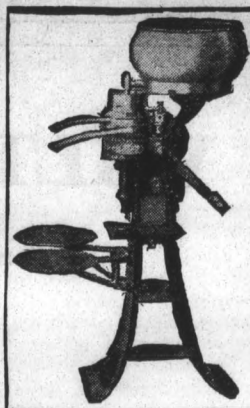
THE FARMER'S DAIRY COW.

The farmer is supposed to keep cows for profit and one would suppose that he would make every possible effort to increase his per cent of profit, from year to year. Such does not seem to be the case. Statistics show that the average yearly profit per cow is only about \$7.50. There is certainly plenty of room here for an increase and such could be brought about by better stock and better care and management. It should be the aim of every farmer to do all in his power to accomplish this.

The real foundation of farm dairying is good stock, and right there is where we find room for the greatest improvement. The average farmer seems to be contented with cows "like pap had." Dairy products are selling at a good price and the farmer should endeavor to increase the yield of his cows and the cows should not be what are called dual purpose cows. They should be bred for dairy cows alone.

The best cow in the world will not make a profit for her owner unless she has proper care. While it is not necessary to have fine barns for the cows, we usually find that the man with the fancy barn is the one who is always endeavoring to improve, and is making money. But, plain or fancy, the barn should be so constructed as to keep the cow warm, dry and clean. Each cow should have a separate stall. Cement floors for the stalls are the best. In putting in the stalls one should have in mind the comfort of the animal as well as the saving of labor in caring for same, and construct accordingly.

The learned ones estimate that about twelve pounds of feed per day is necessary to supply the body requirements of a cow. One must supply extra feed to furnish material for milk secretion. This extra feed is what produces the profit and it is obvious that the cow with a great capacity for assimilating feed is the one that furnishes a large per cent of profit. It is of great importance to feed regularly and to supply material that the cows relish and that furnishes the required nourishment. The silo is nearly always found on the farm of the successful dairy farmer. Little things serve to make big things and attention to the little things conducive to the comfort of the cows is



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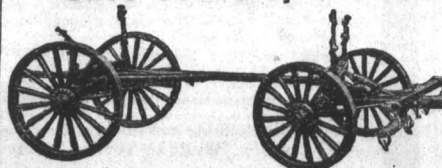
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what makes the profit. The cow is of a quiet disposition and keeping her from being annoyed by horses or other animals is one of the little things. See that she is protected from the storms and that she has plenty of water that is not stagnant in summer or filled with ice in the winter. The farmer who does not know by test, just what each member of his herd is doing is like a blind man. A record should be kept, showing how much milk each cow produces and the per cent of butter fat also, the amount of feed given so that some idea of the profit may be had.

If the farmer will give more attention and care to his cows he will soon find himself with a valuable herd and will be amply repaid by the generous per cent of profit he will receive, for now-a-days golden butter is merely another name for coin.

Ohio.

S. C.

SOME SILO POINTERS.

The silo insures "home consumption" of its contents, because the owner, even if hard up for cash cannot readily market it. It adds to soil fertility, that is, the manures from silage are better than are the manure from dry feeds. You get full returns from your acre of silage in manures, while with dry feeds some of it is apt to be sold on the market. Space is saved in saving feed in the silo, and loss from firing, molding and rot of dry feeds is greater than that in the silo. It replaces green pasture in winter or in seasons of drouth.

Its greatest value is shown in dairy lines; for fattening purposes it is not so good unless aided by grain rations; thus, however, it makes an excellent feed for fattening. Being palatable the animals eat it more readily. While its greatest value is for dairy cows, yet it also forms a fine feed for sheep and poultry. For horses and hogs perhaps it is not so good; unless well preserved, but a little can be used to advantage.

For rearing calves it is an excellent feed. Where sheep are fed one must limit the amount, about two pounds per day being sufficient with dry feeds, depending, of course, on the size and condition of the sheep. When fed for fattening it must be supplemented with grain rations; otherwise, the flesh will be soft and sappy. For poultry silage forms a good substitute for outdoor cropping in seasons when they must be housed.

Crops that are fitted for silage: Corn stands pre-eminently the silage crop. To get the best results from corn it should be cut when the grain is going out of the milk state and beginning to harden. If cut too green the silage is apt to become too sour. Of cut overripe too much of the silage is hard and woody. An acre of good corn should yield from 15 to 20 tons of good silage.

Sorghum usually outyields corn in quantity per acre, and makes an excellent silage when properly grown and cut. For this purpose it should be sown thickly broadcast and cut when seeds are just turning ripe. This sorghum is an excellent feed for poultry, and especially for egg production. If in drills it should be thickly sown to prevent oversize of any of the stalks. Small, plump stalks is the idea kind of for the silo.

Red clover, alfalfa and cowpeas are somewhat juicy, but considerable silage is made from these three plants. No material should be placed into the silo that has large, woody stems, or is hollow, as it is very difficult to press these so as to exclude the air.

While filling the silo a few things must be observed. The silage must be tamped solid around the walls. Air-tight silage is necessary for good keeping. The entire area surface must be kept clean and well packed. When a silo is thus filled, the farmer need not worry about cold weather, and dry spells as long as his silage lasts, which in many cases will be found profitable to provide enough feed for the entire year.

Illinois.

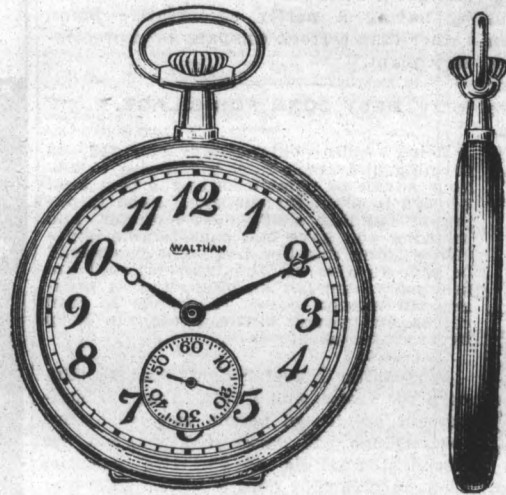
R. B. RUSHING.

SCORING TEST FOR FEBRUARY.

The February Scoring Test was held at Detroit on Friday, March 11. Mr. H. J. Credicott and Inspector Claude A. Grove scored the butter, and Inspectors Dear and Haven scored the cheese. There were 35 samples of butter with an average score of 91.4 and four samples of cheese having an average score of 94.1. The greatest defect in this lot of butter was old, stale, overripe cream and wintry flavors. A few tubs were found to be badly mottled.

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Waltham Watches have made the town of Waltham, Massachusetts, famous the world over, for Waltham Watches are used the world over. Peary has carried them to the North Pole and the Shackleton Relief Expedition to the Antarctic Circle. They have taken the highest awards wherever exhibited at all the great international exhibitions during the last sixty years. Surely this is good proof that Waltham Watches are the best. Buy one that has been *adjusted to temperature and position* at the factory, and then have your jeweler regulate it to your personal habit and occupation.

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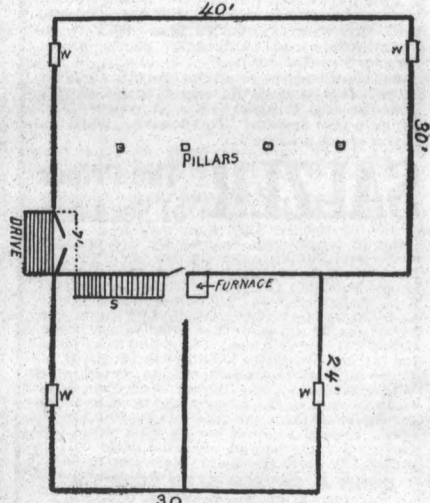
THE TOLEDO PLOW COMPANY, TOLEDO, OHIO.

HORTICULTURE

COLD STORAGE ON THE FARM.

There are many instances where a cold storage house on the farm may be made not only convenient but profitable. For the benefit of those who are so situated I will describe mine, which has been doing good service for seven years.

As I had a building 24x30 ft., with a good cellar under it, and an approach graded up to it. I decided to use it for a sorting room and work shop in connection with the storage. I excavated thirty inches, which was about as deep as I



Basement Plan.—Pillars support ice box. Stairway leads to upper room where baskets and crates are stored.

could go and be sure of good drainage. The foundations for the walls were of crushed stone, well grouted with thin cement, twenty inches thick, and reaching two feet below the bottom of the cellar and resting on a good, solid clay bottom. On this foundation I laid the wall of hollow concrete blocks 8x8x16 inches. I realized at the time, that it would be better to use a double wall of thinner blocks, but they were not then obtainable. In building again, I would use a double wall of blocks only four inches thick, with airspace between.

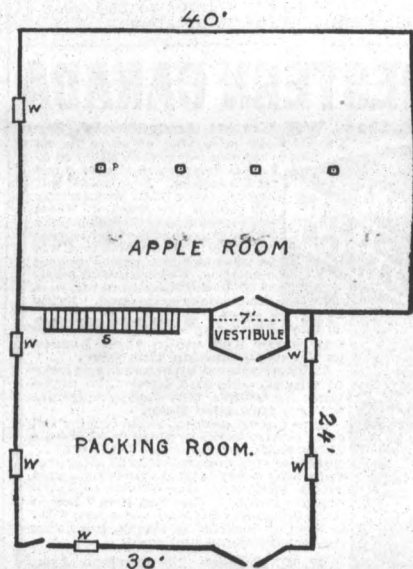
The basement is eight feet high and is mostly used for storing potatoes. The wall is not lined. It is banked with dirt on outside within about three feet of the top, and if the potatoes are piled higher on the inside than dirt is banked on outside, boards are used to keep them away from the wall. Otherwise no boards or bins are used in the cellar, and potatoes are stored in bulk on the concrete floor. It has an east and west window for light and ventilation. Both windows are provided with double sash and shutters. It has one door, seven feet wide, into which a team and wagon can be driven or backed in hauling potatoes or fruit, either in or out. It also has a door, three feet wide, into the basement under the sorting room adjoining. The walls of the entire building are of hollow cement blocks which were made on the premises by the piece. I furnished the materials.

In the room next above the basement, which is the apple room, there are two-inch air chambers in the wall, made by placing 2x2-inch studding against the wall, and lining with best building paper.

Another set of studding is then placed against these and covered with lath and plaster. The floor is of two thicknesses of one-and-one-fourth inch matched boards, laid on joists 2x12 inches, and 16 inches apart. These joists are lathed and plastered on under side next to cellar to prevent warmth from potatoes affecting apple room. I intended to lath and plaster the ceiling of the apple room also, except that portion directly under the ice chamber, but being unable to secure a plasterer at the desired time, I used building paper instead and have never changed it.

The apple room is 29x39 feet, inside measurement, and fourteen feet high. It is all in one room, and has but one door, which is seven feet wide, through which the team is driven with loads of apples. It is lighted with acetylene gas piped from my residence near by, and also by one good-sized window with two double-glazed sash, and close-fitting shutter. I aimed to have as few outside openings as possible. In the ceiling of the room, are six openings (three on each side), through which the warm air at the top of room is conveyed, by means of six-inch galvanized iron pipes, up into the top of the ice room.

The story above the apple room contains the ice room, which is in the center of building, and is rectangular in form, about 10x30 feet and eight feet high and will hold thirty tons or more of ice. The sides and ends of ice room are of 2x4-inch studding set upright and covered on both sides with building paper and matched boards, with tight door at one end to receive ice, and openings along both sides and bottom, about six inches wide, the whole length of both sides. Through these openings the cold air descends into the apple room, and is replaced by the warm air carried from the top of the apple room, and discharged into top of ice room. Small openings are left in



Floor Plan.—W, windows. Stairway leads to basement. The swing doors show drive entrance.

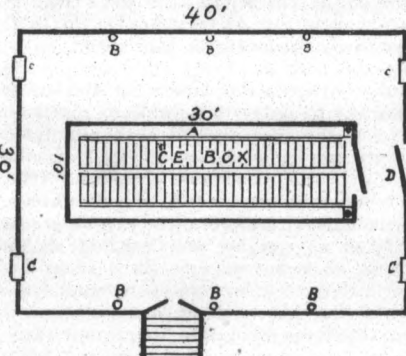
the gable over the ice room and as near the roof as possible to allow for ventilation.

The joists over the ice room are covered with building paper and matched boards, above and below. The space on either side of the ice room can be used for storage purposes. The floor of the ice box is covered with heavy galvanized iron

turned up at the sides to make a pan to hold the water from the melting ice. It is slightly lower at one corner where a pipe, one and one-half inches in diameter, with trap, discharges the drip.

The sorting room is used in preparing fruit for shipment, and for temporary storage. Between it and the storage room there is an intermediate room or entrance, 6x8 feet, in which fruit is stored for a short time (a few hours) whenever it is not advisable to bring directly from the inner room to the sorting room; it also prevents excessive changes in temperature in inner room.

In the spaces between the joists under the floor of the apple room are two six-inch, galvanized-iron pipes, leading cold



Plan of Ice-box Floor.—C, windows. P, pipes bringing warm air from the room below. A, openings for cold air to descend to room below. D, door for taking in ice.

air from outside up through the floor, into the apple room. By removing the cap on the outer end during the frosty nights of October and November we can save consumption of ice.

When picking, we haul directly from orchard to storage except on warm days, when we allow the fruit to cool over night and store in the morning when the fruit is cooler and when the temperature in the apple room will not be raised so much by admitting the outside air, which will enter to some extent, while taking in apples. While driving in frequently in picking time, the temperature is usually from 40 to 48 degs., but after we finish hauling in fruit it falls rapidly, and through late fall and winter runs from 31 to 33 degs.

So far we have stored the apples in bulk in bins, filling them about four feet deep for the softer varieties and five feet for firmer ones. I am convinced, however, that it is better to store in crates, and besides the capacity can be greatly increased thereby. We expect to be able to store 5,000 bushels in crates and intend to secure crates the coming season. We store everything as picked from the trees, and sort during winter when preparing for shipment.

The only feature of the building which is not satisfactory, is that there is some drip from the ice pan, or the floor underneath it. At first we ascribed this to leaky joints, but have about concluded that it is caused by condensation, and expect to plaster the under side of the joists under the floor supporting the ice pan so as to keep the warm air at the top of the apple room, from coming in contact with the cold floor. Aside from this drip, I can light a match anywhere on the woodwork and the fruit keeps well and is crisp and fresh.

The amount of ice required will vary from thirty to fifty tons for the fall season, beginning a few days before apple picking begins. We sell out before April first, hence we do not store any ice in the room during the winter. The ice is drawn up at one end of the building, by means of an elevator platform holding about half a ton, elevated by team and rope and pulleys to the level of the door near the ice room. I feel that the building has more than paid for itself already. I have a cheap home-made furnace in one of the potato cellars, which is used to warm the sorting room, and should it ever become necessary the cellars and apple room could easily be warmed by it.

Ohio. W. W. FARNSWORTH.

WHY WE PRUNE THE GRAPE.

As far as I know the grape is the only vine or fruit bearing plant which requires systematic pruning. In the case of trees and other plants we cut away the surplus wood, undesirable and injured shoots, and branches that interfere. Not so with the grape, for we have a rule laid down and which we must follow. Whereas, it usually requires a long article to explain the method of pruning the grape, I shall give all the essentials in less than a hundred words.

All the vine should be cut away except two fruiting canes three or four feet long,

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DOES IT PAY TO RESEED SOD?

No doubt about it at all. This work has gone through the experimental stages and the results show that this work, when properly done, pays handsomely. Reseed pastures and meadows early in the spring, after the frost has left the ground and the sod is wet and spongy. Clover is one of the best natural fertilizers and enrichers of the soil. Many farmers therefore use a mixture of timothy and clover or alsike and red top. Experience shows that this work not only increases the hay yield, but also provides abundant pasture when pasture is short in July and August. Do not attempt to broadcast the seed on sod land. Get an Empire Disk Drill manufactured by the American Seeding-Machine Co., Incorporated, Richmond, Ind. This drill provides the way to do the work right by conducting the seed from the grass seeder through the grain tubes and placing the seed in furrows made by the disks. This dishing relieves the sod of root bound. The Empire Drill will sow all kinds of seed—no seed too large and no seed so small that the Empire will fail to sow it right. Empire Drills are made in many different styles and sizes—plain and fertilizer. So no difference what your seeding conditions may be, or where you live, you can get an Empire Drill that will do your work in the best possible manner. Write the manufacturers for an Empire catalogue. Then go to your implement dealer and insist on seeing an Empire Drill, which is guaranteed to you in such a way as to protect your interests.

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New Seed Oats. Big money in oats if you raise the right kind. Here's your chance to get them. Imported Canadian Seed Oats for sale; extra fine. Send for free sample. It speaks for itself. This same oats were sold last year in the United States and proved their merit and our statement that the farmers need a change of seed in this country. We make a specialty of growing extra fine seed oats on our big Canadian farm; new, clean land; no weeds. Have best known varieties. Regenerated Swedish Select went 116 bushels to acre this year; Early New Market, Canada's favorite, 110 bushels to acre. Both of these are big early yielders. I believe it will pay you to get a change of seed. Try some of these oats. The average oats are inbred and run out. Canadian Government Grain Inspector graded this grain No. 1 White. Have stiff straw, white berry, thin husk, enormous yielder. It is as easy to put in and harvest a big crop as a small one. The reason your oat crop is not bigger is because your seed is run out. This has been proven. Look at this cut. Taken from photograph of two stalks from Galloway Brothers' field, over 200 kernels to the stalk. Write early for free sample, or send ten cents for packet. Will also send you free booklet entitled "Big Money in Oats and How to Grow Them," by Galloway Bros. and Prof. M. L. Bowman, former professor of farm crops Iowa Agricultural College. Information in this book is priceless. Get it free. GALLOWAY BROS., 642 Galloway St., Waterloo, Ia.

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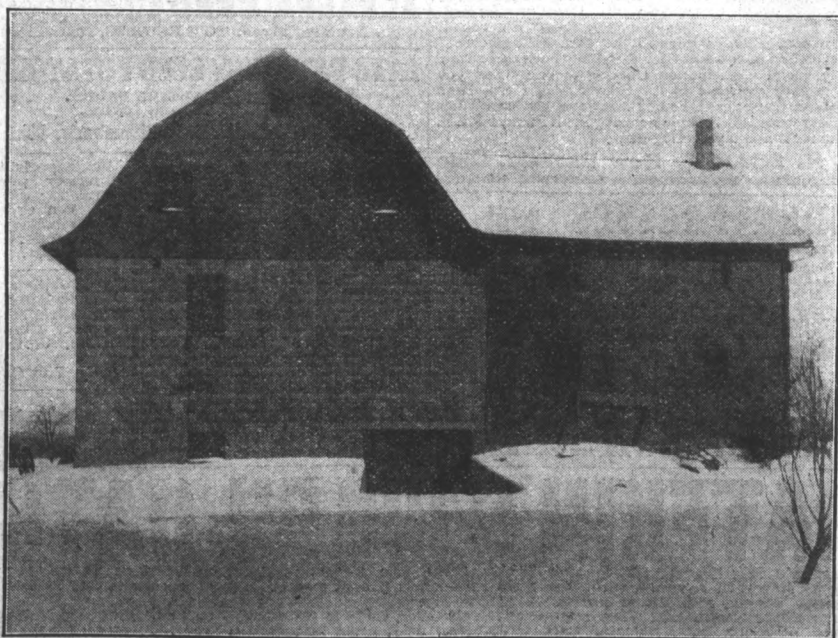
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these canes coming from wood one year older than themselves; and two spurs of new wood containing two buds each and coming from as near the root of the vine as possible. For the novice to distinguish the fruit bearing canes it is only necessary to remember that the large plump buds will bear fruit next year, also that the joints are short, and the canes grow out from wood one year older rather than the older part of the vine which produces long-jointed barren canes.

No matter what method you follow, whether the horizontal wire or posts, the principle of pruning remains the same, and the above paragraph is the essential part, which may be remembered by any one. I have heard so many ask how much of a vine should be cut away, and I know of no rule better than the one given. There are various methods of training, but the one I have found satisfactory consists of three horizontal wires supported by posts at convenient distances apart. The canes should be tied to one of these wires after pruning. Any one who will use a little common sense and remember the second paragraph of this article may successfully prune his grape vines, and train them any old way he pleases.

Missouri. H. F. GRINSTEAD.

HOW A WESTERN MICHIGAN ORCHARDIST PRUNES OLD APPLE TREES.

This is the season of the year when people conclude that their apple orchards need pruning, and the way not a few go at it is enough to make a man cry out "don't." Singularly enough, the branches that are most easily reached seem to be the ones on which the attack is made without much regard for the exigencies of the case or, apparently, a very clear idea of which ones should be taken. The effect of this general custom is to be seen in the greater part of the older apple orchards one sees, where the lower limbs are largely cut away and the tops of the trees are run up high in the air. Such trees are very difficult to reach with the sprays and it is equally difficult and expensive to gather the fruit, if by chance any happens to mature.

These thoughts have been impressed upon the writer's mind by a thorough experience. An apple orchard recently came under his control that is probably 50 years old or more, and in which this same practice has been followed, so far as any pruning has been done. Fortunately, that work has been neglected, so there is now a better chance to bring the tops within a working distance from the ground. Last fall in gathering the apples it became necessary to lash two ladders together, one 24 feet long and the other 14, making a ladder probably 33 feet high. Two men were required to raise this into the trees, and then only a small number of apples could be reached before it became necessary to move the ladder. And even this failed to reach the tops of the trees in many cases. Only one man could work on it, but the time of both was required much of the time in order to move the ladder as needed. It cost 75 cents per barrel to put those apples up, whereas in other orchards where the trees were not so high the expense was only 40 cents. Those tall trees were partially beyond the reach of the spray pump as well, and the quality of the fruit suffered in consequence.

Now, instead of following the common custom, we are cutting away those upper branches and trying to bring those tops down where we can spray them and where the apples can be gathered at less expense. Of course, where the tops have become too thick some of the lower branches that have been shaded are dead and must be cut away, but in the main there are enough thrifty limbs to make good tops lower down.

A thing that should be guarded against in these old orchards that have been neglected, is excessive pruning. It is not the best policy to undertake to do all of the work that may be needed in a single year. Better take at least three years to bring the trees into proper shape. Some kinds of fruit trees, like peaches, seem to stand severe pruning, but not so with either apples or pears. I have seen pear trees killed after grafting when the branches were cut away to allow the scions to grow. I once saw a job of pruning done in an apple orchard where the lower branches were severely cut away after the common practice, and an old fruit man who chanced to be passing remarked that those trees would stand a chance of being barren for three or four years. His prediction proved true. I once rented

an apple orchard of 160 large trees. It was the bearing year, and as the pruning had been neglected I argued that a thorough pruning before blossoming would relieve the exhaustion incident to a heavy bloom, as well as helping the fruit generally, so we gave them a good clearing out. Those trees blossomed well and set a promising crop of apples, but they began to drop soon afterwards and a very light crop matured, not enough to pay expenses, and I lost money on the deal. Other trees that same year that had not been so severely pruned, though otherwise given practically the same care, bore a good crop. A person may, indeed, secure a good crop of apples following a heavy pruning, but he takes chances in doing so, and in general the trees seem to resent such severe treatment. So it is wise to be moderate in this work.

Besides cutting down the tops we are cutting back the side limbs and shortening them in. In order to be able to reach all parts of the tree and do a thorough job of spraying it is necessary to keep the trees within a reasonable compass. After studying this matter for some time I have concluded that an apple tree can be grown as large as can be well handled within a limit of two rods and leave room between the trees for driving around. So, in planting out new orchards I am setting the trees two rods apart each way. Where land is valuable as orchard lands are in these parts it is not economical to set the trees farther apart than is necessary.

Allegheny Co. EDWARD HUTCHINS.

GROWING GARDEN CROPS OF QUALITY.

Burke, the great English orator and statesman, once said, "When, by a cold penury, I blast the abilities of a nation, and stunt the growth of its active energies, the ill I may do is beyond all calculation." What he stated of a nation's welfare is a universal principle no less applicable to the farmer's garden than to the balanced growth of a great world power.

We want lettuce that is crisp, celery free from tough fibrous tissues, onions without a leathery texture, corn that leaves a pleasant remembrance upon our palate and not a lasting provocation to our teeth. We want garden crops of quality, and if we, "by a cold penury," or by negligence, fail in our duty to the garden crops the damage thereto may be beyond our expectation and the pleasure and value from them greatly diminished.

"Stunt the growth of its active energies." How many ways can we stunt the growth of our ordinary garden plants? We can force them to grow in a cold, wet soil, starve the land of plant food, work the soil when it is unfit, leave the sub-surface in an open porous condition, have the surface illy prepared to receive seeds, or plants, fail to give protection from early and late frosts and from the hot sun, use poor seeds and plants, etc.; we can do these things and many others and thereby traverse the interests of the plants. A good motto for the gardener is, "Keep the plants growing." Whenever there is a let up for a day or two the tissues of the plants become tough and unpalatable. To keep plants growing all the conditions must be present at all times. Eliminate any one of them and the organism will be checked in every function. Should there be a too small supply of nitrogen for the plant then it will be impossible to use more than enough potash or phosphoric acid to combine with the nitrogen for making plant cells. An excess of potash and phosphoric acid would be useless. The nitrogen limits the growth—stunts it.

FRUIT NOTES.

As near as we can judge from present indications the past winter has not been a severe one on fruit in this section. There was considerable snow most of the time which afforded root protection, and the thermometer did not creep down far below zero, and then only for a short time. Thus far the spring has been favorable, for, although there has been some March weather that would soon swell the buds it did not last long and the tender parts are still well protected, and for the most part seem to have considerable vitality.

I am aware, however, that it is impossible to predict what the crop will be with any degree of certainty. There is still a chance for many peaches or plums. Judging from the present appearance of

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The most perfect remedy ever devised for weak and delicate women is Dr. Pierce's Favorite Prescription. IT MAKES WEAK WOMEN STRONG, SICK WOMEN WELL.

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70,000 Americans will enter and make their homes in Western Canada this year. 1909 produced another large crop of wheat, oats and barley, in addition to which the cattle exports was an immense item. Cattle raising, dairying, mixed farming and grain growing in the provinces of Manitoba, Saskatchewan and Alberta. Adaptable soil, healthful climate, splendid schools and churches, and good railroads. For settlers' rates, descriptive literature "Last Best West," how to reach the country and other particulars, write to Sup't of Immigration, Ottawa, Can., or to the Canadian Government Agent.

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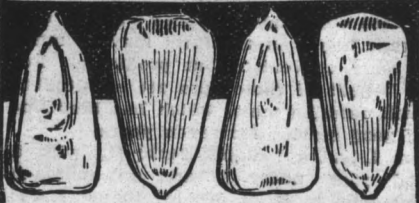
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the fruit buds our peach trees which bore heavily last year will not be likely to produce a full crop this year, but barring further damage will probably produce as many as the tree should bear, and the thinning will not require as much labor. We are doing more thinning with the pruning shears than we did last year, our aim being to get the vigorous four-year-old trees to produce a crop. The heavy crop last year has checked the growth somewhat and we feel that they may now be pruned more closely.

Apple trees made an excellent growth last season, especially those which did not bear. The latter seem to be bristling with fruit buds, and should be able to do well after a season's rest. We anticipate that some thinning will be necessary. The trees from which the tops were cut last season have thrown out considerable vigorous growth near the larger cuts, necessitating some thinning of these sprouts. We will leave those most horizontally inclined and attempt to train them to fill in open spaces rather than add to the height of the tree. Many of the branches on the three to six-year-old apple trees have made a new growth of three feet or more. We are cutting these back about one-third and removing some of the branches that are not needed. It is interesting to note the varied manner of growth of the different varieties of young trees. Some try to reach skyward as fast as possible, while others prefer to broaden out, and still others to thicken up. Different styles of pruning must be followed with different varieties, and often with individual trees of the same variety, so it can be seen how impossible it is to give anything but general rules in regard to pruning.

I have noticed that the rabbits have been especially hungry for the bark of fruit trees and even canes of raspberries and blackberries during the past winter, due probably to the deep snow covering other green vegetation for a long time. We have found places in our blackberry rows where half of the canes have been eaten off, and many of the small lower branches and twigs of the trees have been eaten. All the trunks of the smaller trees were protected with wood veneer and tarred paper protectors, and we have found none of these injured, but neighbors have had their young trees girdled.

The strawberries are still sleeping comfortably under their coat of marsh hay. Although the bare ground has been thawed out for some time, except for the freezing during cold nights, the soil beneath the hay is still frozen, and there is some ice beneath it in places. It seems reasonable that plants thus held back and protected would remain greener and better rooted and be more thrifty than unprotected ones.

We have just finished removing the old canes and thinning the new ones in the raspberry and blackberry plantations. We began this work last fall, but snow prevented its completion. These cool mornings when the ground is frozen makes an ideal time to do this work, as the canes cut better when held firmly by the frozen soil, and there is no danger of pulling up plants by the roots in attempting to cut them. The raspberry canes have killed back considerably. The blackberries did not make as vigorous growth last season, but are green and quite healthy.

Calhoun Co. S. B. HARTMAN.

PEAS AS A MONEY CROP.

Considering the brief time from sowing to marketing, I know of no more profitable crop than peas. Besides leaving the ground in admirable tilth for other crops that may follow, they are out of the way in time for many varieties of corn, medium or late potatoes, late cabbage, cauliflower, celery, etc. It is no stretch of fancy to say that the first early sorts may be well out of the way for any of the above; and the later varieties will be off in ample time for celery, turnips and other late autumn crops, and thus, with judicious rotation or succession the ground may be kept busy with quick maturing money crops from the earliest possible moment in spring until late autumn.

What Soil and How to Fit It.

As to the soil and its preparation some suggestions may be timely. For the extra early sorts select the warmest, driest ground available, and if not already well fertilized a liberal top dressing of well-rotted manure or high grade commercial fertilizer will be of much benefit. In this case top dressing will avail much more than plowing under, but make sure that it is fine and well worked in.

They should be put in just as soon as

the ground can be worked as the earliest crops are the best paying ones. Almost any year they can be sown with safety in March as the cold weather will not injure them once they are up. These extra early sowings must, of course, be made with the smooth sorts as they contain less sugar and are more hardy than the wrinkled family. The Alaska, Earliest of All, First and Best, etc., are kinds to use for this purpose. When once they have germinated there is very little danger of injury as it very rarely gets cold enough to damage them after the crucial point of sprouting is safely passed.

Wet, retentive soils must, of course, be avoided for these crops as they cannot be worked early enough to be available for the first crop. At the same time they might be ideal for medium or late peas. Fit the ground just as thoroughly as possible and drill in single rows as closely as can be worked with horse and cultivator. In single rows two feet apart is wide enough for these half dwarf sorts. Many prefer the double rows four or five inches apart and then a wider distance between the double rows. Personally, I prefer the single rows, as then we have the advantage of working close to the row on both sides while in the double row there is no chance to work except with a narrow hoe or, worse still, to weed by hand.

Cultivation can begin even before the peas are up and should be continued as long as possible without injuring the vines. With care in handling, by turning two rows together, cultivation can often be carried on until nearly time to harvest the crop and where this can be done without injuring the vines it pays well to do it, as it will assist much in filling out the pods, with a consequent increase of yield.

By sowing late in March or the first days of April, these extra early kinds should be ready for market early in June, and the writer does not recall the time when they were not ready sale at \$1.00 per bushel wholesale, or \$1.50 and upwards when retailed. These are not fancy sketches worked out on paper, but actual business which any one can accomplish. The crop can be turned in six to eight weeks and the ground will be in ideal shape for almost any of the above crops. A second sowing of these first early sorts may be made a week or ten days later and they will be ready for use by the time the others are gone and they will fill the succession nicely until the later sorts come on.

For the later crops the wrinkled varieties should be used exclusively and for market purposes the table-growing sorts of the Champion of England type are not profitable as the work of trellising or supporting the vines becomes a serious matter when large areas are under culture. American Wonder, Knotts, Excelsior, Horsford's Market, McLean's Advances, Shropshire Hero, etc., are all grand sorts and leave little to be desired. For the home garden where less space is available and it is desirable to make the most out of limited space then the stronger growing sorts that require support may be advantageously used. Then the double rows come in play and for supports I have often used good strong stakes between the rows, stretching binder twine tightly along from stake to stake. Another very good way is to take brush with thick-growing, slender twig tops and cut them early in the season, throwing them on the ground under weights, and leave them thus until desired for use. If left long enough to partially season this will leave them fan shape, or they may be trimmed to same shape by pruning on opposite sides of the main stalk. Firmly set between the double rows they make excellent supports, and if stored away will answer for following years.

These later sorts should be sown much deeper than first earlies in order to better stand the hotter, drier weather which they will encounter. The ground should be warm, else the seed will very likely rot. Three or four inches is not too much, but they are safer if covered lightly at first and the trenches filled in as the vines grow.

Wayne Co.

J. E. MORSE.

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By special arrangement, Ratekin's big 1910 seed catalogue, with a sample of "Diamond Joe's Big White" seed corn that made 153 bushels per acre, will be mailed free to every reader of this paper who is interested in the crop he grows. This big book tells how to make the farm and garden pay. It's worth dollars to all who plant or sow. Write for it and mention this paper. The address is Ratekin's Seed House, Shenandoah, Iowa.

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ESTABLISHED 1843.

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 EDITORS AND PROPRIETORS.

 39 to 45 Congress Street West, Detroit, Michigan.
 TELEPHONE MAIN 4525.

 NEW YORK OFFICE—725 Temple Court Building.
 CHICAGO OFFICE—1736 First Nat'l Bank Building.
 CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.

 M. J. LAWRENCE President.
 M. L. LAWRENCE Vice-President.
 E. H. HOUGHTON Sec.-Treas.

 I. R. WATERBURY Associate
 O. E. YOUNG Editors.
 BURT WERMUTH

M. H. HOUGHTON Business Manager.

TERMS OF SUBSCRIPTION:

Five Years 260 Copies **\$2.00**
 Postpaid
Three Years, 156 Copies, Postpaid,..... \$1.50
 One Year, 52 Copies, postpaid..... 75 cts.
 Six Months, 26 copies, postpaid..... 40 cts
 Canadian subscriptions 50 cents a year extra for postage

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RATES OF ADVERTISING:

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 No lottery, quack doctor or swindling advertisements inserted at any price.
 Entered as second class matter at the Detroit, Michigan, postoffice.

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The Lawrence Pub. Co.,
 Detroit, Mich.

DETROIT, MARCH 26, 1910.

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CURRENT COMMENT.

Farmers' Co-operative Elevators. Gratiot County readers of the Michigan Farmer who are interested in the promotion of a farmers' co-operative grain elevator company at Breckenridge, have asked for information as to whether there are any such organizations in the state and for details as to how their business is conducted. We know of no farmers' organization in Michigan conducting a co-operative grain elevator. The Greenville Co-operative & Supply Co., which was mentioned in these columns a short time ago, is the nearest approach to such an organization, the only difference being that its business is confined almost entirely to the handling of potatoes, which is the principal cash crop grown in that section, and in handling supplies needed by the farmers, such as coal and other staple articles. However, the farmers' co-operative elevator is not a new institution in the country and has reached a very considerable development in some of the grain growing states, notably Illinois, Iowa, Minnesota, the Da-

kotas and Nebraska. While accurate statistics are not available, it is probable that there are considerably more than 1,000 of these co-operative grain elevators doing business at the present time in the grain growing centers of the country. Quite early in the development of this movement, we described through the Michigan Farmer the steps taken toward organizing one of these co-operative grain elevators by the farmers of Christian county, Ill. This company was organized with a capital stock of \$12,000, divided into shares of \$50 each, no one person being allowed to hold more than five shares.

The difficulties encountered in effecting the organization and building up a business were noted in that article, chief among these difficulties being the efforts of the so-called regular dealers in the two other elevators in the town to drive the co-operative company out of business by raising the price of grain. However, in this instance as in many other instances which could be recounted, the members stuck to the organization and the result has been that the farmers have not only received from two to three cents per bushel more for their grain, than was the case under like market conditions before the organization of the co-operative elevator company, but at the present time the co-operative company owns all three elevators in the town of Stonington, where the company which was described built its plant. Something of the extent to which the co-operative movement for the marketing of grain has grown in Illinois is shown by the fact that at the sixth annual meeting of the Farmers' Grain Dealers' Association of Illinois, which is a state organization of co-operative companies, held at Decatur in March, 1909, 1,600 delegates were in attendance and it was reported that the farmers' companies of that state had marketed 60,000,000 bushels of grain during the preceding year. If it is estimated that the farmers who produce this grain receive two cents per bushel more for it than they would have received under the old system of marketing, which is a very moderate estimate from all reports, they would have profited by the handsome sum of \$1,200,000 through the assistance of these farmers' elevator companies. In the state of Iowa, where the original farmers' co-operative elevator was built, there are now something over 300 co-operative farmers' elevators, where five years ago there were only twenty-one, showing the remarkable growth of this movement in recent years. Minnesota, the Dakotas and Nebraska each have almost as many, all doing business under a very similar plan and being organized into state associations.

These farmers' companies have not found it smooth sailing in their progress of success, for the reason that the regular grain dealers' association has fought them at every point and they have found difficulty in marketing their grain through commission men on account of this influence. However, this trouble no longer exists, since the farmers' companies have become so numerous that the dealers at central points are all glad to get their business. Now, a careful study of the situation as it is found in these sections, reveals some points which should not escape the notice of those who would organize co-operative elevators or other similar business enterprises in this state. One of these points is that there must be sufficient business tributary to the point at which the project is developed so that a considerable amount of business can be done. The Greenville organization, on a small capital of less than \$5,000 has done an aggregate business of between \$90,000 and \$100,000 per year. Some of the farmers' elevators started on two or three times that capital in other states have done a business aggregating from \$300,000 to \$400,000 per annum. Thus it will be noted that the volume of business done has been no small factor in the success of these enterprises.

Another point in the experience of these farmers' co-operative companies in other states is the business policy which may be followed by the concern. In most cases these companies are organized primarily for the purpose of getting a better price for the grain sold, and getting the supplies purchased at a lower figure, rather than for the purpose of making or paying dividends upon the capital stock. The Greenville Company, heretofore mentioned, has never paid a dividend, although it is gradually accumulating a surplus which is a needed asset in its growing business. On the other hand, some of the co-operative elevator companies in other states are paying annual dividends of 10 per cent or more. In some

of the newer companies a provision is made for a distribution of the profits in excess of a certain fixed percentage among those who market grain through the co-operative elevators, thus giving patrons the full benefit to be derived from the enterprise. Practically all of these concerns purchase products and sell supplies to both members and non-members of the organization. Some of them, to insure that all members will be loyal to the enterprise, levy a fine of a cent or more per bushel for all grain marketed elsewhere than through the company's elevator.

The selection of a manager for such a concern is another factor in its success which should not be underestimated. Such a man needs to be a born diplomat to keep everybody good natured, both the stockholders and patrons of the company, and all working for the interest of the organization.

The need of co-operative organizations of this kind in Michigan is unquestioned. In the marketing of the Michigan potato crop, if an advance over prices now secured equalled that noted with the Greenville company, it would mean a gain of around \$1,000,000 per year for Michigan farmers. The gain in the price received for grain, hay, and other products in sections where these are a large factor in community production, as potatoes are in the Greenville district, would save to the farmers of the state a further sum fully equal to the above, if not greater. The success of these enterprises in other states should be an inspiration to Michigan farmers, and certainly the success of the Greenville Co-operative and Supply Company should induce them to take similar steps in the organization of co-operative enterprises along lines of community production.

More About Meat Prices.

Time has proven that the forecast of the probable trend of the market for meat animals, made in these columns during the movement for a boycott on high-priced meats, was based upon facts and warranted by conditions. In our last issue a phase of this subject was touched upon in the figures given regarding the stocks of hogs in the corn belt states as indicated by figures obtained from the most reliable sources. Another interesting phase of the meat situation is revealed by the report made by the Bureau of Statistics of the Department of Commerce and Labor which shows that the tendency of the market on meat and meat products exported by the principal meat producing countries of the world has been decidedly upward during the last decade. This report shows an advance in price on the exports from Australia of 3 per cent in the price of fresh beef and practically 70 per cent in the price of fresh mutton. New Zealand has seen an advance of 15 per cent in the price of its exports of frozen beef and about 30 per cent on its exports of frozen mutton. Argentina has scored an advance of 150 per cent in the price of frozen beef and 100 per cent in the price of frozen lamb, since 1897. Canada has received an additional price during the past year of something over two cents per pound for beef and five cents per pound for mutton and pork over the price which prevailed in 1898.

In like manner the meat importing countries show a large increased cost of the meat products imported during the last decade. In the United Kingdom these advances range from 52 per cent in the case of salted beef down to a slight decrease in some fresh meat products, due largely to the better facilities for refrigerating meats and for transporting these frozen products. These figures were obtained by the simple process of dividing the value of such imports and exports by the amount of same, to arrive at the price received or paid for the products.

These figures simply show that the production of meat, producing animals throughout the world has not kept pace with the consumption of meats, and that the rise in the price of meats which caused such a furore in the United States is a condition which confronts the meat eating people of the world, and one from which they can not be wholly relieved owing to the increased price of the feeds which enter into the making of meat products by the farmers of the country. Thus it is entirely probable that the period is passed when our intelligent breeders and feeders will be obliged to produce meat animals at a loss or go out of the business, which has too often been the case and as a result of which the stocks of meat producing animals in the country

have not kept up with the increase in population and the demand for meat products.

HAPPENINGS OF THE WEEK.

Foreign.

A scheme for the regulation of aerial traffic has been submitted to the minister of public works of France. Aeroplanes are becoming so common as to demand rules to prevent accidents and to define liability in aero navigation.

A protocol has been signed by representatives of Costa Rica and Panama submitting a question pertaining to the boundary line between the two countries, to Chief Justice Fuller of the United States Supreme Court for decision.

In her general attempt to gain an avenue of trade for her products to the water routes of the Mediterranean and Pacific ocean, Russia is hoping that her Macedonian and Manchurian prospects will not come to an issue simultaneously. Should this be the case, she stands a good chance of losing out in both cases. For this reason, the Russian officials are somewhat impatient over the attitude of Japan toward affairs in Manchuria, where they claim the latter government is retarding the construction of railroads in the Chinese province. England is claimed to be supporting Russia's interests, although it is known that the interests of England and Japan are closely related.

Colonel Roosevelt and family are in Cairo, Egypt, this week where they have been royally entertained by the government officials and foreign citizens resident there as well as by the inhabitants themselves.

The mounted police of Northwestern British America announce that 78 Indians of Fort Rae died during the winter of starvation.

The British house of lords refused to support a resolution favoring the abolishment of the inherent right to sit in that body. The recent fight between the house of lords and the house of commons over the veto power of the former, is in line with this action and the vote noted above is consistent with the former stand of the house of lords.

It is stated upon good authority that the Japanese government has communicated to her representatives at Washington, proposals for an agreement between the two nations looking toward a treaty that will keep the "door" of Manchuria "open" and extend to all nations equal privileges of trade with the people of that province.

Thru the resignation of Sir Charles Bigham, of the high court of justice of England, changes in the cabinet are being made. Sir Samuel T. Evans will succeed the retiring member and the place made vacant by this promotion will in turn be filled by Rufus Daniels Isaacs. Elections will be held in two districts owing to the changes. Premier Asquith has recommended that the terms of parliaments be shortened from seven to five years.

National.

An inquiry into the methods employed by fire insurance companies of New York state, has revealed the fact that domestic companies raised \$10,000 for the purpose of defeating legislation at Albany and there have been suggestions made which intimate that an organized system of influencing legislation throughout the country exists. The inquiry is being extended.

The United States Senate has passed a bill appropriating \$3,600,000 for the enlargement of the capital grounds at Washington.

The possibility of a maximum tariff between the United States and Canada has excited much activity on the part of merchants and commercial interests along the Canadian border, and congressmen are now being urged by these interests to do all in their power to prevent such an arrangement inasmuch as it is certain that border cities will be greatly affected by the restricted trade that must follow higher tariff rates.

At least 45 persons were killed and nearly as many injured by the derailment of a Rock Island train near Marshalltown, Ia., Monday. A defect in the track is assigned as the cause of the accident. Two trains were being run in a combination and when the engine of the first train left the track the second engine plunged through the cars in front of it, causing most of the horrible scene that followed.

Already 41 persons have been indicted in connection with the bribery cases in Pittsburg, where council members were influenced to vacate a street.

The strike in Philadelphia is still unsettled. By the interference of United States Senator Penrose, the traction interests were forced to concede practically all of the demands of the street car men. But because the street car union was not recognized in the proposition made by the company, the men refused to accept the terms. This leaves the problem more to the advantage of the company since the action of the car men has lost for them much of the public sympathy that had been favorable to their cause, and also the support of several other labor organizations.

The most disastrous fire in the city of Detroit since January, 1907, occurred Monday evening when the Stephen's Manufacturing plant was consumed at a loss estimated to be \$250,000.

A grand jury is sitting at Hopkinsville, Ky., listening to implications in night rider raids in that city. Six indictments have been made.

The past week witnessed perhaps one of the most strenuous fights ever carried on in the lower house of the American Congress, when, by a combination of the democrats and what are known as the insurgent republicans, a change was made in the rules committee of that body. The former arrangement was for a committee of five with the speaker of the house as chairman. In the fight the insurgents and democrats demanded the election by the house of a committee of 10 on rules, and that the speaker be ineligible as a member. This proposition was finally agreed to by a vote of 191 to 155. Being success-

ful in this, a motion was immediately introduced upon the invitation of Speaker Cannon to entertain a resolution, that the speaker's chair be vacated and that an election to fill such vacancy be immediately held. This latter resolution was lost by the same margin as the combined force had won out in the resolution on rules. The fight extended over a period of five days, the final act being the vote to retain Speaker Cannon, taken on Saturday afternoon. All Thursday night the house was in session continuously on into the next day in order that the republican organization might be kept intact. The effect of the fight is difficult to determine, but that it will have an influence in the coming election of congressmen is probable. How it will affect legislation during the present is less certain.

Indictments were returned Monday afternoon against the National Packing Co. of Chicago, and ten subsidiary concerns, by the federal grand jury that has been investigating alleged violations of the Sherman anti-trust law. The United States attorney simultaneously with the announcement of the indictments, filed a bill asking for the dissolution of the Packing Co., the attorney believing that through the instrumentality of the company, the packers were enabled to evade the anti-trust law.

The town of Messick, Mich., sustained a loss amounting to nearly \$50,000 last Monday by a fire.

CROP AND MARKET NOTES.

Ottawa Co., March 21.—Wheat, as a general thing, has come through the winter in fairly good shape. Some fields that we sowed late look rather bad, but the roots seem to be all right, and with favorable weather from now on will no doubt produce a fair crop. As there has been no hard freezing weather since the snow went off, new seeding is in good condition, so the prospect is favorable for a good crop of hay. The extraordinary warm sunshine of the past few days, is beginning to make wheat and grass look quite green. There was over 80 days of good sleighing during the winter. Many farmers improved the time drawing gravel and for this reason more cement work will be done this spring than usual. A large number of auctions have been held lately and everything offered has brought good prices, especially horses, which have sold very high. Hay and other feed is scarce and high.

Osceola Co., March 15.—The sleighing is spoiled and roads have been in bad shape for some time and will be for a considerable time yet. At this writing it is cold and windy; all high places on fields are bare, leaving the crops unprotected, which is hard on grain and clover. Farmers are commencing to get ready for spring. Potato business very dull, not much doing; price is so low it is hardly worth while to haul them to market. Cattle and hogs continue scarce and high. Hay is getting scarce and selling from \$16@19 per ton; potatoes, white, 20c per bu., red, 25c; rye, 65c; oats, 45c; corn, 35c per crate; cattle, 3@3½c per lb; hogs, dressed, 10c per lb; butter, 22c per lb; butter-fat, 30c per lb; eggs, 19c per doz.

Livingston Co., March 14.—We have just passed through one of the best winters, from every standpoint, for several years. We had ten weeks of continuous sleighing and snow has covered wheat and clover so that if this month is favorable they will come through in excellent condition. Farmers are hustling things in order to be ready for spring work when it comes. Stock of all kinds has wintered well and today finds nearly all of the stock that was on feed in the market. In our local market live hogs reached the 10c mark last week, which is a record price for the younger generation. Farm help will be very scarce again this season and farmers are offering from \$25 to \$30 per month. Not much grain moving at present.

Lapeer Co.—Weather spring-like, but freezing hard nights. Not very beneficial for the wheat and clover crops. We are at a loss to know whether to sow clover-seed now or wait until a few weeks later. Farms are changing owners or tenants and on our highways loads of household goods can be seen every day. Not much of last year's wheat in farmers' hands now. Buyers are after what hogs they can find; think that spring pigs will bring \$3 each this spring. As near as we can learn, there will be a larger acreage of potatoes, beans and oats planted this coming spring than ever. Hay, with the present high prices, has proven a splendid crop for those lucky enough to have a surplus.

RAILROAD INSTITUTES.

The State Board of Agriculture, with the co-operation of the Pere Marquette railroad will run a Farmers' Institute Special which will stop at the following places at the date and hour mentioned. Addresses upon topics relating to farming and fruit growing will be given, after which the exhibits in the baggage cars will be explained and demonstrated. The meetings will begin promptly on the arrival of the train. Everyone is invited. Speak of the meeting to your neighbors and friends.

Tuesday, April 5.—McCords, 8:00 a. m.; Alto, 9:30 a. m.; Lowell, 10:45 a. m.; Smyrna, 1:15 p. m.; Belding, 2:30 p. m.; Greenville, 4:00 p. m.

Wednesday, April 6.—Trufant, 8:02 a. m.; Howard City, 9:30 a. m.; Amble, 11:00 a. m.; Lakeview, 1:15 p. m.; Six Lakes, 2:30 p. m.; Edmore, 4:00 p. m.

Thursday, April 7.—Blanchard, 8:00 a. m.; Remus, 9:30 a. m.; Weldman, 12:45 p. m.; Mecosta, 2:45 p. m.; Barryton, 4:15 p. m.

Friday, April 8.—McBrides, 8:00 a. m.; Stanton, 9:30 a. m.; Fenwick, 11:00 a. m.; Ionia, 1:15 p. m.; Lyons, 2:40 p. m.; Portland, 4:00 p. m.

The schedule of the institute train which will be run with the co-operation of the Michigan Central railroad from March 28 to April 2, inclusive, appeared in the last issue.



YOUR time and careful judgment cannot be used to better advantage than in preparing well in advance for the proper harvesting of your grain crops.

Take no chances of delays, with experimental harvesting machines. Don't risk the choice of one or two neighbors, because you must buy for many years' service as well as this year's harvesting.

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Right now is the time to ascertain whether or not you need a new harvesting machine—binder, mower, reaper, hay rake, tedder—it does not matter so much which machine you need, the principle is the same.

You should start today to look over your equipment—ascertain what you will need.

There are many points to be considered in selecting a harvesting machine. If it is a binder you need, you should have a machine that is efficient, dependable and durable, and then the machine should meet your particular requirements—and to do all this it is necessary that you take sufficient time to properly consider the selection of the new machines.

Buy wisely—safely—on the verdict of thousands of farmers of America and all over the world who have cut out the failures and choose from standard makes of the famous I H C Line of Machines.

Champion Deering McCormick Osborne Milwaukee Plano

Why waste your valuable time—patience—labor, and sacrifice part of your crop this year and every year in experimenting with unsatisfactory machines? Others have taken all the experimental risk for you—if you act wisely now.

Don't wait until you must "buy in a hurry." That is not necessary, because an I H C Dealer is right near you and will, any day, show you just the

I H C machine adapted to your particular needs.

He will also take your reservation order for reliable binder twine on which you should take no risk this year. The late market may be flooded with inferior grades of experimental twine. It's important that you investigate these facts and your I H C Dealer has the details to show you—and the proof of quality on all machines and I H C brands of binder twine.

Then, too, remember that with the strongest and most reliable guarantee given on any machines in the world, you also have the satisfaction of knowing that I H C interchangeable parts are quickly at hand—through your I H C Dealer. No waits. No delays. No annoyance. Perfect workmanship and materials of highest quality are guaranteed by the experience of over half a century in I H C machines. Make your harvest certain.

We urge upon you the importance of deciding this matter now; because, if you put it off until a more convenient time, the chances are that you will never give the subject proper attention. You, no doubt, think there is plenty of time—but the harvest season will be upon you the first thing you know. Therefore, consider this harvesting machine question, now, while you have the time to give it proper study. Write for any information you may need to help you make a wise decision.

Ask the I H C dealer for catalogue of the machine you want. If you do not see the dealer nearest you, ask us.

Take your choice of machine. The quality is the same in all—the best possible.

Don't experiment with binder twine, either. Get one of the seven perfectly dependable brands of twine and be sure. Choose Champion, McCormick, Osborne, Deering, Milwaukee, Plano or International—in Sisal, Standard, Manila and Pure Manila brands.

If it is not convenient to see an International dealer, write for full information and the catalogue you want.

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See Page 337.

A chance to get a Shetland Pony, Cart, Harness and Saddle FREE.

POULTRY AND BEES

GIVE THE CHICKS A CHANCE.

Where the rearing of little chicks is drudgery, not much success can be expected. It must be a pleasure to attend to their needs, for if this is not the case a lot of neglected chickens will be the result. This neglect generally comes when the newness wears away, and this is the most important time of their lives and when they really need the most and best of care.

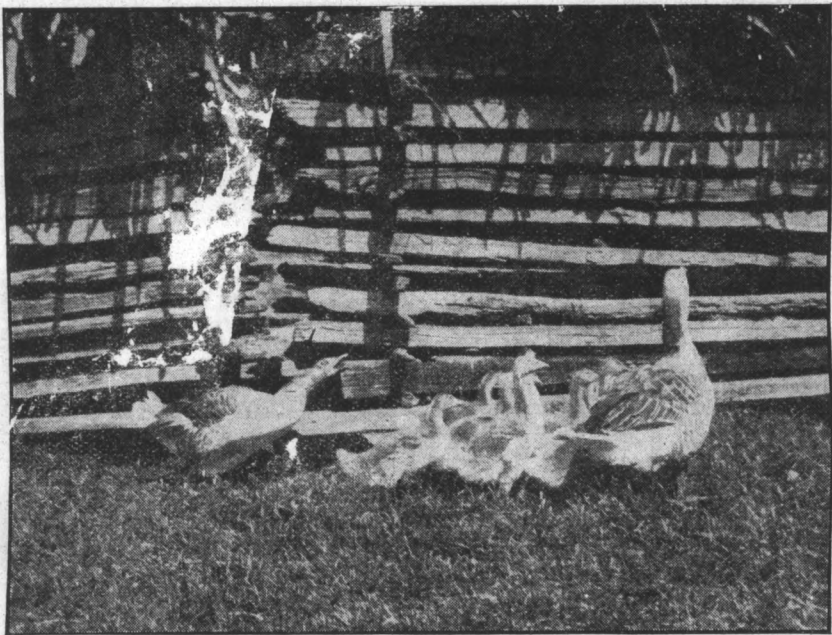
The motherly kind woman who has a flock of chicks under her care will every now and then glance from the kitchen window to the different coops placed nearby. On the slightest indication of trouble she runs to see what is the matter, and if any help is needed, such as liberating a chick that had entangled itself in the wire run, or has gotten into a strange coop or lost its way, she gives the needed aid with a kind smile and heart and then goes back into the kitchen. No drudgery here, but pleasure and kind helpfulness, and when these are joined with an abundance of common sense, both men and women will be successful in rearing little chicks into good large, profitable fowls.

On our farm we have had our ups and downs in the raising of chickens ever

GETTING THE GOSLINGS STARTED.

The common advice as to time for hatching geese is that they should not come from the shells until grass has secured a good start. In other words, grass is one of the essentials to the successful rearing of geese. Many growers give the goslings access to nothing but grass for the first two days of their existence, after which they are gradually put upon a ration containing some grain but in which grass is still a prominent factor. In this latitude, then, it is not desirable to have geese hatched before April, and even the fore part of that month is pretty early, as the ground is still damp and cold. Where hatches are brought off before conditions are right for safely placing the goslings in a movable pen upon a good grass plot, a good way is to keep them in warm and dry quarters for a week or two, supplying the necessary green food by cutting a sod from the grass plot and placing it before them. Growers who practice this find it the safer way, since freshly hatched goslings are more quickly affected by improper conditions and ill treatment than any of the other inhabitants of the poultry yard, a fact which it is difficult to appreciate for the reason that in the course of a few weeks they become the most hardy.

After the second day a grain mixture of one part corn meal and two parts shorts is a favorite with some raisers. Good results have also come from feeding



The Goslings, when once well started, will thrive on free range alone.

since we started in the business. Even now we make mistakes, but not the same kind we made in former days, for we have always tried to never repeat the same mistake, but rather to profit by it. But there are other things we learn as we go, and shall expect to keep on learning and being taught, for it is never the person who makes mistakes that stands in the way of progress, but rather the man who makes them and is unwilling to confess them.

Mistakes are always excusable in the beginner and, where complete knowledge of conditions is lacking, an expert may make mistakes, but the expert never stakes his past experience against some new kind of theory. If making experiments he does so in part, so that if failure is the result it at least doesn't spell ruin, for it is folly to try any new thing or theory at the expense of the old tried and true system, the merit of which is unquestioned.

This is entirely correct when preparing the coops that are to shelter the chicks, and allowing necessary space to furnish them with exercise. It is always well to select, for rearing purposes, a good motherly hen that is neither too large nor too small. If she is too large and fat she will be slow and clumsy in all her movements and will trample a good many of her chicks to death or make cripples of them. If too small, she will not be able to give the necessary protection, so far as brooding goes, which in the early spring months is as necessary as food. It is never a wise proceeding to give the hen more than a dozen or fifteen chicks at this season, nor to select a hen which has a disposition to scratch the litter in the coop unceasingly, or when at liberty is steadily dragging the life out of her flock by excessive foraging, never keeping them together, always far ahead of them, and never giving them a chance to get under her long enough to get warm.

Illinois.

Mrs. R. B. RUSHING.

IN ANSWER TO INQUIRIES.

Fall Layers Among Geese.

What is the cause of geese laying in the fall of the year? I have the small grey geese crossed slightly with the Toulouse. For two seasons they have laid in both fall and spring.

READER.

This question was referred to Mr. Haskins, one of the leading growers of geese in this state, and he states that it is a rather common thing for the smaller

The Overland's Matchless Simplicity

Texas this year takes 1,500 Overlands. Kansas takes 1,000. Iowa 1,000. Nebraska 750. Three towns in Kansas—Wichita, Great Bend and Salina—each take 200 cars.

The car is but two years old. In most of these sections it has been known but one year. Yet this year's orders for Overlands call for \$24,000,000 worth of cars.

This unexampled success is largely due to simplicity. The operation is by pedal control—a method as simple as walking. Any novice can run it the first time he tries. And the car almost cares for itself.

For \$1,000

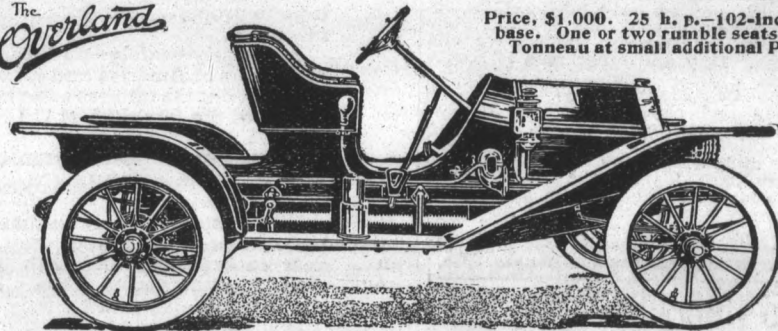
The 25 horsepower Overland sells for \$1,000. It has a 102-inch wheel base and a possible speed of 50 miles an hour.

It is not under-sized or under-powered, as are other low-priced cars. It meets any requirement. It has won a perfect score in a 10,000-mile non-stop run, and has made marvelous records in hill climbing.

This is the only real automobile ever sold for this price.

A 40 horsepower Overland, with 112-inch wheel base, sells for \$1,250.

The Overland



Price, \$1,000. 25 h. p.—102-inch wheel base. One or two rumble seats or Toy Tonneau at small additional price.

The Willys-Overland Company.
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Please send me the two books free.

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This plow attachment pulverizes and levels the soil as it is fresh turned and moist, thereby making a perfect seed bed before the ground gets lumpy and dries out. It is light running and requires no more horses than for ordinary plowing. Made for sulky and gang plows.

The cutting blades are made of the best plow steel, with plenty of curve to the blade so that it produces a draw cut. These blades are self-cleaning and cornstalks or trash cannot lodge.

THE NATIONAL ROTARY HARROW ATTACHMENT is destined to become the greatest farm labor-saver of the age! It does the work far better and easier than the old drag, because of the draw cut blades, and also because the ground is easiest pulverized and leveled when it is fresh turned. When your plowing is done, your harrowing is done! By all means SEE this great machine attachment. It will save you dollars, time and trouble. Ask your dealer to show it to you today. If he hasn't it, write us today and we will see that you are supplied. (1)

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Incubator

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Ever Made

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Both incubator and brooder, ordered together, cost but \$11.50. Freight prepaid. The Belle City Incubator has double walls and dead air space all over, copper tank, hot-water heat, self-regulator, thermometer, egg tester, safety lamp, nursery, high legs, double door.

The Belle City Brooder is the only double-walled brooder made, hot-water heat, platform, metal lamp. No machines at any price are better. Write for our book today, or send the price now under our guarantee and save waiting. **Satisfaction Guaranteed**

Belle City Incubator Co., Box 14, Racine, Wis.

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Metal Covered Safest Made

125 Egg Incubator and Brooder Both For \$10
If ordered together we send both for \$10. Freight paid east of Rock-Is. Hot water, copper tanks, double walls, double glass doors. Free catalog describes them. **Wisconsin Incubator Co., Box 111, Racine, Wis.**

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H. H. KING, Breeder and Exhibitor of Buff & S. C. Bk. and R. C. White Minorcas, Houdans, W. C. B. Foulis, S. C. White Leghorns, Jap. Bantams and Buff Ducks. Eggs \$1.50 per 15. Willis, Michigan.

EGGS—EGGS from my prize-winning Single Comb Brown Leghorns at easy prices. Cockerels, hens and cock for sale. **CHAS. W. RUFF, St. Clair, Michigan, Dept. M. F.**

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LIGHT BRAHMA, White Wyandotte and Barred Plymouth Rock Cockerels for sale, good stock. **E. D. BISHOP, Route 38, Lake Odessa, Mich.**

MAMMOTH BRONZE TURKEYS and prize-winning **BROWN LEGHORN COCKERELS**. **MRS. THOS. WYCKOFF, Orchard Lake, Mich.**

R. I. Reds & White P. Rocks—Cockerels and hens for sale bred from prize-winning stock. Satisfaction guaranteed. **Howard Colby, Dentons, Mich.**

SINGLE COMB WHITE LEGHORNS. EGGS \$1 per 15, \$5 per 100. Send for circular, "World's Greatest Egg Machines." **SNOWFLAKE POULTRY FARM, Route 1, Grand Rapids, Mich.**

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WHITE LEGHORN COCKERELS R. or S. C. R. C. White Leghorn eggs \$1.50 to \$2.50 setting. **A. R. GRAHAM, Flint, Mich.**

Buff Rock Cockerels Good size, color, healthy, farm raised. Price from \$1.50 up. **WILLIS, MEADE Holly Mich. R. No. 3.**

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White Wyandotte eggs for hatching from select breeding pens; \$1.00 for 15, \$1.50 for 25, \$2.50 for 50 and \$4.50 per 100. **COLON C. LILLIE, Coopersville, Michigan.**

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S. C. BROWN LEGHORNS—Eggs for hatching. Write for particulars. **LEWIS T. OPPENLANDER, successor to Fred Mott, Lansing, Mich.**

MY "REDS" are standard bred. Breeding pens are selected winter layers, both combs. Eggs \$1 and \$1.50 per 15. R. C. Ck's \$2 and \$3. Best African Geese in Mich., eggs 75c each. Guarantee results on early orders. **W. T. FRENCH, Ludington, Mich.**

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DOGS.

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breeds to lay in the fall. Usually they do not lay as many eggs then as in the spring. He regards fall laying a detriment, as it undoubtedly has a tendency to shorten the spring laying period.

Soft-Shell Eggs.

My 100 hens laid over \$150 worth of eggs last year besides raising a lot of chicks. I feed mixed grains at the rate of 6 qts. once a day and 8 qts. of middlings mixed with milk once a day. They have been laying a good many soft-shelled eggs and some have acquired the habit of eating eggs.

Tuscola Co. H. S. The soft shells may result from lack of lime or calcareous matter in the ration. You do not state what form of grit you are using, but crushed oyster shells are about the best source of the material required and should be given with gravel, coarse sand, broken crockery or whatever other form of grit is used. However, hens have been known to lay soft-shelled eggs even when receiving an abundance of the proper kind of shell-forming material. In such cases the trouble has been ascribed to overfatness or some peculiar affection of the egg-producing organs. If your hens have a constant supply of good grit it is probable that they are lacking in strength and vigor, in which case a reduction of the grain ration, a gradual increase in exercise and a liberal allowance of whatever green food is available would seem advisable. Some suggestions on the prevention of egg eating and on breaking up the habit when once formed were offered in our issue of Feb. 12.

Leg Weakness.

Mrs. J. B.:—The symptoms you describe indicate leg weakness in your fowls, which is more or less common at this season. It generally results from heavy feeding of starchy foods and the want of protein-bearing foods—in other words, an unbalanced ration. It is likely that your fowls have been receiving too much corn or other grain and little or no meat scrap, cut bone or other nitrogenous food. The fowl system will not stand this sort of feeding for any considerable period, especially at a time when the chance for exercise is limited. Less grain, more exercise, a moderate allowance of meat scrap and bone meal or sliced green bone, with a reasonable amount of green or succulent food should prevent further losses.

As you have not given your method of feeding, it is, of course, possible that the trouble may be rheumatism, which generally comes from dampness in the poultry house, or from other exposure to cold and wet. In rheumatism the lameness is usually accompanied by stiffness and sometimes enlargement of leg joints and contraction of toes. Removal to warm, dry quarters and the feeding of warm, stimulating food, including a little cooked meat each day, will be advisable if you find rheumatism the cause of the trouble.

TIMELY HINTS TO BEE OWNERS.

Many of us have taken great pains in locating the hives to secure the most sheltered point, where the chilling winds of spring may be least liable to reach them, but at the same time have allowed the bees to go considerable distances in quest of water, perchance getting it from tanks or streams almost ice cold. They need the water to dissolve honey which sometimes becomes candied in the cells, and in brood-rearing they can make but little progress without an abundant supply of water. When compelled in early spring to go long distances, or to secure a supply from brooks or drains, the losses will be beyond comprehension, and the careful bee man realizes that he can not spare the little water-gatherers at this season of the year. He could well afford to lose four times their number a month or two later. It is apparent that many cases of so-called spring dwindlings are traceable to the want of water, of the proper temperature, at convenient places in the apiary.

The wide-awake farmer does not wait until his bees have swarmed and are clustered in a tree-top before he thinks of preparing a hive for them. All preparatory work, such as making and painting hives, wiring brood frames and getting the section boxes ready for the anticipated honey crop, should be done at leisure time during the winter and early spring. How easy it will be to manage a dozen or more colonies of bees this summer if everything is set in readiness now. For instance, when a swarm issues it will be the work of a few minutes to hive it; if a honey flow bursts forth suddenly, what satisfaction it will give to know that a few hundred section boxes are at hand, ready to set on the hives at once.

New Jersey. F. G. HERMAN.

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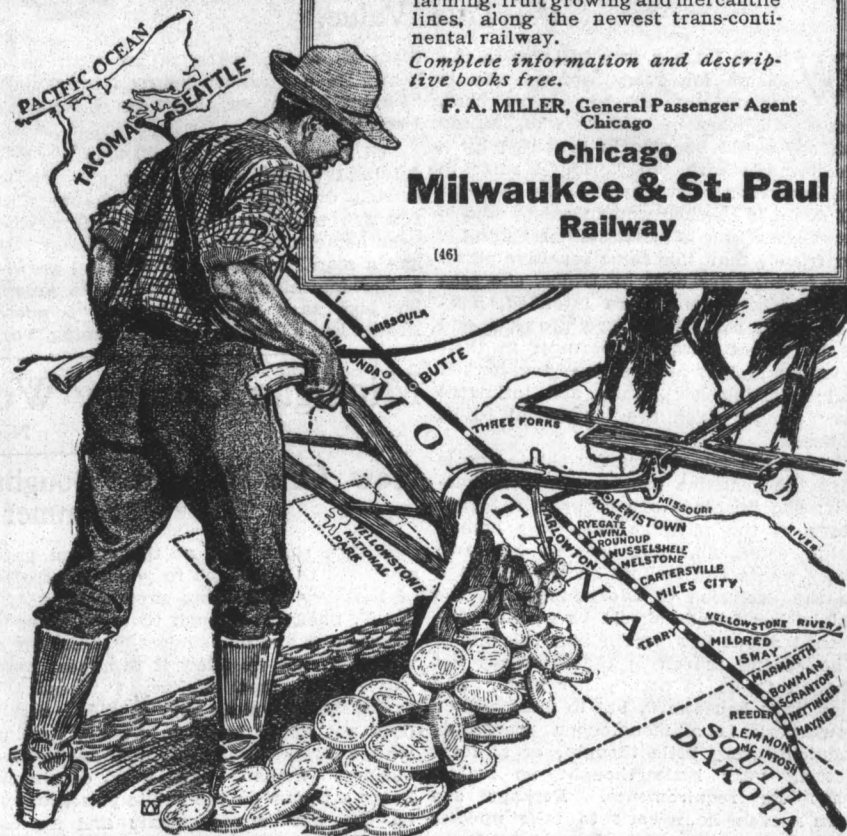
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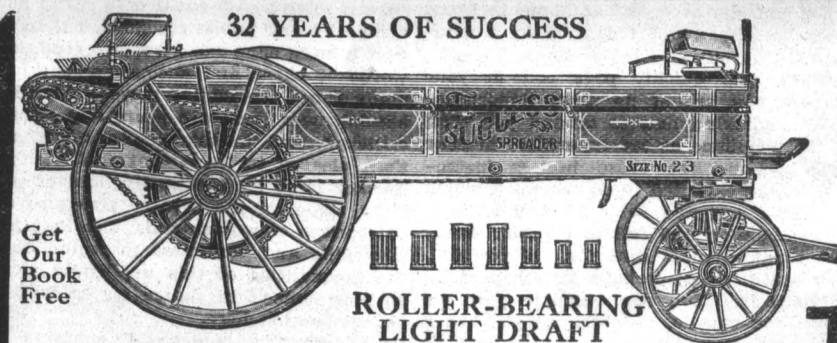
Buy direct from the biggest spreader factory in the world. My price has made it. No such price as I make on this high grade spreader has ever been made before in all manure spreader history. I save you \$50. Here's the secret and reason: You pay me only for the actual material and labor at cost and one small profit based on my enormous factory capacity of 30,000 spreaders a year. And I pay the freight right through to your station. Any farmer can afford to have a spreader when he can get in on a wholesale deal like this on a



GALLOWAY

position! You know if I didn't have the best spreader, I wouldn't dare to make such an offer. 40,000 farmers of America have stamped their O. K. on it. They all tried it thirty days free just like I ask you to try it. Get out your pencil. Drop me a postal saying, "Galloway, send your new proposition and big spreader book free." Ask about the new, complete steel gear 70 bushel spreader. J. H. Gutherson, Gladbrook, Iowa. "Works fine. Spreads small buggy team. Does good work. Have always used the — before. Galloway much the best. If going to buy a dozen more they would all be Galloways."

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You get a nice Satin Finish Shave Razor, set and honed ready for use. Instructions with each razor. Guaranteed to give satisfaction.

We have purchased only a few of these EXTRA FINE razors for our subscribers who want something that is the very best.

Price \$2.00, to Subscribers Only.

The Michigan Farmer, Detroit.

PRIZE CONTEST. In the prize contest which following are the winners:

1. G. J. McQuade \$25.00
2. W. E. West 20.00
3. J. B. Buck 15.00
4. N. I. Moore 10.00
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8. W. E. Stocking 5.00
9. Jud Shepard 3.00
10. H. A. Macklem 2.00

Total \$100.00
Rebate time is up May 1, 1910. We have paid all rebates due agents up to and including March 10. Those who have sent in less than 10 subscriptions since January 1, can, by a little hustling, secure the required number before May 1 to entitle them to our very liberal rebate.—MICHIGAN FARMER.

WOMAN AND HER NEEDS

The World Cure for the Sensitive Woman.

Such Women Over-rate Themselves—The World Puts on the True Value.

WHILE I am a firm believer in the home for every woman who is financially able to stay there, there is a class of women who, in my opinion, would be greatly benefited by a sharp tussle with the world. I refer to the oversensitive women.

I doubt if another woman exists who is more of a source of misery to herself and to her friends than this same sensitive plant. Her feelings are hurt by trifles, she sees slights where none were intended, imagines that her friends are growing cold if she is not always uppermost in their thoughts and is always worrying herself and irritating her family and intimates over things which are too trivial to be noticed.

There are two causes for this. One is that the sensitive woman overrates herself; she imagines she occupies a bigger place in the universe than any human being could fill, and because her own petty wants and feelings occupy her mind to the exclusion of everything else, she thinks her friends should be equally concerned about her person and belongings. The second reason is that she has not enough to do to occupy her mind. She may have housework, but to most women housework is a monotonous proceeding requiring very little thought, or at least getting very little thought no matter what its requirements. Perhaps she hasn't even housework to take up her time, but must devote herself to fancy work, calls, society or other nothings which idle women invent to kill time.

The result of this idleness is to force the woman into that pernicious habit, introspection. Habit, we call it, but we might say disease, for it leads to a diseased condition of mind, if it may not be regarded as a disease itself.

For such a woman a sheltered life is the worst possible one to live. She shrinks more and more from others, from contact with the rough edges of life which might get her out of her sensitiveness. The best cure, almost the only one, is to put her out in the world where it is every one for herself, and where she must swim alone, or sink.

It is hard, cruelly hard, so hard that we all try to save the sensitive girl from such a life, while we are quite willing that her sturdy sister should shift for herself. But in reality it is the tender one who needs the training most. The experience of earning her living has been the mental salvation of many a woman, who, had she been left at home to brood over herself, would today be in a madhouse.

The world quickly puts you in your place. You are of no more importance to the hurrying masses around you than is the telephone or the typewriter in your office. You, like those lifeless instruments, are expected to do the work which has been assigned you. If they get out of commission and fail to do their work, the repair man is sent for. If you fail, you are dropped, perhaps kindly, perhaps mercilessly. You are valuable just for what you can do, not because you are a girl and have always been shielded at home. That is a detriment rather than a help. Six months of this sort of life begins to open your eyes; a year shows you that the world is so filled with people you couldn't occupy a very large space, and two years convinces you that you are a mere atom in a vast universe.

Your mind, too, has become filled with work to the exclusion of self. Of course, you have not gotten to the point where you have not still a lively concern for your own interests, but it is no longer a foolish concern. You are not above inquiring for a raise of salary occasionally, but you have got beyond the stage of crying if your acquaintances are sometimes preoccupied when you meet them and do not gush over you.

The world is the best cure for the sensitive woman, but many can not take this cure. Such should endeavor to cure themselves at home. If you are foolishly sensitive, look the ugly fact squarely in the face. Stop priding yourself on your refined, delicate sensibilities and look upon

them as a hindrance rather than as a help. Do not excuse yourself by saying, "I know it is foolish, but I am so sensitive I can't help it."

Tell yourself that you will help it. Understand clearly that if you give up to morbid dwelling on fancied slights that you are weakening yourself and making your home miserable for its inmates. Be like a man I know of. If a friend growls a "goodmorning" or fails even to growl, he just says philosophically, "I guess Brown has a headache this morning," or,

"Bill's breakfast didn't agree with him I guess." He never thinks of taking the gruff salutation as a personal snub.

So with you, consider that your friends may be out of sorts or have some trouble you do not understand, and that they may not have you in mind at all when they give you a frosty greeting. You often snub other people, but you excuse yourself by saying, "It is only my way. Mary will understand." Probably that is what she thought when you took offense at her.

If you have a sensitive daughter, get her out of the habit. For her sake, for her future husband's sake, for the world's sake, don't let her grow up with such a blight. When she has her feelings hurt, talk to her sanely, instead of siding in with her. Even if she is right, don't be too sympathetic. Talk her out of the habit, ridicule her out of it or shake her out of it. Any way that works best with her is legitimate, so long as you do not allow her to grow up a weeper.

DEBORAH.

Michigan Country Women as Money Earners.

No. 2.

How One Woman "Bought off the Heirs" by Keeping Summer Boarders.

Reader, right here at the garden gate allow me to introduce to you the heroine of the very interesting sketch, Miss Agnes V. Sheffer. Though there be a fence between us and our subject, yet not for a moment must we allow it to appear as a barrier, for that hackneyed threadbare expression—"typical old maid,"—surely does not apply here, as we are dealing with a bright, warm-hearted, up-to-date business woman, one who constantly keeps a thumb on the public pulse, an eye on the world's movements and an ear for the calls of charity.

Miss Sheffer, like many of our best women, started her business career as a teacher. Being the offspring of sturdy, respectable and highly intellectual parents she was at once amply fitted for the struggle that later presented itself; for time, as it is wont to do, had placed the shuffling tremble of age upon her parents—the other three children had married and left the home nest, and—well, here we are, face to face with the problem. Heirs must be satisfied and our dear, faithful old people must be cared for, and that person, especially if it be a woman who looks at the problem and hurriedly says "I can solve it," is entitled to really more sympathy and public recognition than the best printed page can give; but good, kind words of cheer and encouragement have many times the motive power in burden-bearing over that of censure and adverse criticism, and to this end are we more than pleased to learn that the Michigan Farmer is to let the kindly light of publicity shine on the greater struggles and enterprises of womankind. Let that man who fails and continues to whine about the inequalities of this unfriendly world, go hide himself in shame for he will get no compassion here.

The Shaffer homestead contains 42 acres. It was the desire of the parents that the home be continued in the family name, and that it be the home of said parents as long as life was theirs; so continued single blessedness on the part of our heroine makes the first desire assured, and that loving care has attended the parents through the medium of their diligent daughter has also proven true—the mother having recently passed on, while the father yet remains. As said before, heirs must be satisfied, and the usual balm, being hard cash, means that someone is going to be "hard up," and so it proved in this case, as the property in question is so located as to make it very valuable.

Miss Shaffer made the venture nine years ago this spring, and she happily informed the writer that but one small payment is yet to be made, when the beautiful home known as "Linwood Farm" will be hers; and she hopes, with reasonable conditions, to clean up the debt this season.

As a teacher, Miss Sheffer brought to her purchase a little money that she had saved, but by far the larger part of the incumbrance has been lifted through foresight, as the home, ideally located and liberally supplied with beautiful trees and shrubbery, at once suggested to the new owner the thought of the "summer boarder," but before this idea could properly be carried out, more money must be raised in order to properly prepare the buildings, as repairs were badly needed. Among the improvements made were the re-roofing of the buildings, the addition of a fine and commodious porch, cementing of basement, building of cot-



Miss Agnes V. Sheffer.

tages and bath house, planting of shrubbery, and many other things that constantly claim the attention of the advance home builder; then, add to all this that this lady keeps a man the year round who looks after the farm and incidentally, chores during winter, while during "summer boarder" time attends to the conveyance of guests from steamboats and trains to the splendid "Linwood" home, for home it surely is to the many who return to it year after year. We should not fail to add, also, that a lady assistant is kept the year round at Linwood, as the mistress of the manor is a

literary light of no mean order, a society woman and a faithful worker in the church—all of which stamps culture on the Linwood home, and marks a busy life. Miss Sheffer is also a lover of fine stock, and it is here that can be found some of the finest Jersey cows in the country. To these she owes much of her success, as probably no one feature in the summer boarder business stands out so prominently as does good, clean, rich milk and butter; while next to this comes fresh eggs, fresh vegetables, good clean beds to sleep on, fresh air and well served meals, and above all, a hostess who possesses the power to charm her guests into peace and contentment, all of which are found at "Linwood."

Miss Sheffer has struck the happy medium in the marketing of her farm crops; for, like the farmer who feeds his hay and grain to his hogs and cattle, then sends them to market on their own legs, so does our genial heroine feed her fruits and vegetables, eggs and poultry and dairy products to the city people, thus doth she market over her own table the products of her farm; and that, too, at a price that leaves a princely profit. The lady realizes that her farm operations are not all conducted scientifically, yet she thinks she sees a future, "after the debts are paid," when she can do, and will do, better as a real farmer. She further says: "I intend to make this one of the finest farm homes in the country before I am done with it," and we believe she will prove out the statement as everything at present seems to be coming her way.

How much we hear and read now-a-days about the renovation and redemption of old apple orchards, the spray pump and spraying mixtures. Linwood Farm has its old orchard, and its governess, who is a born horticulturist, proposes to coax back into old time fruitfulness this relic of better days; in fact, she is now putting forth every effort to carry forth the splendid ideas as planned by her father, who, though unable to longer guide the plow, is yet happy in the courage displayed by his noble daughter; and what an emphasis did he put into his words when he slapped me on the shoulder and said: "Keasy, she's going to win."

Look again at the garden gate and behold the beautiful floral array that surrounds it; then, if you happen to be a man, ask yourself if such a spot of beauty graces your own home; and if not, why not?

The day we called at Linwood for the pointers contained in this article, was wash day, and a time when good nature is apt to be away from home; and, as expected, we found the object of our search engaged in "the battle of the tub;" but she was wearing her usual smile, however, and, after wiping her hands on her apron and giving me a true shake of friendship, I made known the purpose of my visit. This was received in a kindly way, yet with a visible trace of doubt as to her worthiness of my proposed sketch; but after assuring her of the widespread inspiration that such a life story would give to countless other women throughout our great state, and guaranteeing to her the good standing and wide circulation of the Michigan Farmer, her modesty relaxed and consent was given; thus, to the great family of rural readers do we give due recognition to at least one of God's noble women, Miss Agnes V., of "the city by the sea."

Van Buren Co.

E. L. KEASEY.



Miss Sheffer Keeps Cows of Quality.

SHORT CUTS TO HOUSEKEEPING.

This department is opened as a means of exchange of new and successful ideas in homemaking. If you have learned something in cooking, sewing, child raising, fancy work, economy, anything which is helpful, and new, send it in. Twenty-five cents will be paid for every article used, but none will be returned. Keep your suggestions short.

I always do my own washing for a family of nine and sometimes more, but I would not think of doing it without naphtha soap. I follow the directions, never scalding the clothes. All white clothes I put in a tub with scarcely enough warm water to cover, then rub each piece with the soap, roll it up and let stand for half an hour or longer. Do the same with the dark clothes, being careful not to put in any colors that run. Give two rinsings. Anyone never having tried this plan, would not think the clothes would be very white, but I am particular about my clothes, my real old ones looking almost as white as the new.

A year ago one of our children was very sick. It kept him out of school all winter. He felt pretty badly about getting so far behind his class. He had books and tablets, but soon tired of the sameness of things. So I painted one of our kitchen walls with black indelible paint, about three feet above the wainscoting. This, together with a box of chalk, afforded amusement for old and young, as oftentimes when any of us wish to do a little figuring the board is always handy.

This is the way I care for the stockings for a very large family. They are not to wear them after a hole appears but to change at once. When dirty they are laid together and tied in a loose knot. When I wash I pin the mates together at the top and let the pin remain until they are in the mending basket, though I tie them in a loose knot again when putting them there. This enables me to see the state of the foot without unrolling. When I can, I have a mending stocking day and put a great many pairs of mended stockings of all sizes into a common bureau drawer and to that drawer go the different members and fit themselves. This is simpler than to try to mend each week and to put in ten different places, for if the mending isn't done one child can wear another's, so we have given up having "personal belongings" in the hosiery line. My children do not go with ragged stockings nor dirty feet.—J. J. G.

Another suggestion for the woman who does a big washing each week. I boil my clothes two weeks and the next two merely scald them. This gives each garment a boiling once a month, but saves the tedious boiling which takes time and strength and which seems necessary if our clothes look as clean as we desire.—J. J. G.

THE TRUTH ABOUT BROWN BREAD.
No. 8.

BY MRS. ALTA L. LITTELL.

IT is a trait of human nature, perhaps and natural, to be glad when some-malicious, but none the less human thing we do not like personally, is pronounced not exactly ideal by some competent authority. I never liked brown bread, or graham or entire wheat bread, so when the fad of eating these breads had somewhat subsided and the United States government pronounced after experimenting with them that they were not so nourishing after all as white bread, I was distinctly glad.

It all arose from the well known fact that entire wheat flour contains more of the nourishing elements of the wheat than bolted flour. Everybody immediately jumped at the conclusion that if entire wheat flour and graham flour contained most nourishment, that bread made from these flours was most suited to nourish the human system. We forgot, however, that the nourishing of the body depends upon what is assimilated as much as upon that which is taken into the mouth. And now experiments have proven that while brown bread contains more nourishment than white bread, the bran in the bread causes such hasty muscular action in the alimentary canal by irritating the sensitive walls of the canal, that digestion is hurried and is not complete, and that less of the nourishing qualities of the wheat are actually retained from brown bread than are secured when we use white bread. To be explicit, when we eat white bread the body assimilates 94.4 per cent of the good, while in brown bread we retain but 88.5 per cent.

Therefore, the fad for brown bread, like many other food fads which rise and flourish for awhile, will no doubt soon follow its fellows, and we lovers of a nice white loaf will be left to eat our bread in peace.

However, brown bread has its uses, and as it is frequently ordered in cases of dieting, it is well to know how to make it. The two rules which I give below are donated by friends, who vouch for their goodness. The steamed brown bread is a never failing part of the Thanksgiving dinner in the home of the friend who gave the recipe.

For graham bread, baked, use one-half cup of brown sugar, one cup of molasses, two cups of sour milk, three cups of graham flour and one of white flour, one teaspoonful of soda, one heaping teaspoonful of baking powder and a teaspoonful of salt. The flour, baking powder, sugar and salt should be sifted together, the soda dissolved in the milk and added, and lastly the molasses. Bake in a moderate oven for one hour.

The rule for steamed brown bread is one cup each of sour milk, sweet milk and molasses, one cup of graham flour and two of corn meal, one teaspoonful of soda and one-half teaspoonful of salt. This should be steamed for three hours.

A good Boston brown bread is made by using one cup of rye, corn meal and graham flour, two cups of sour milk, three-quarters of a cup of molasses, a teaspoonful each of soda and salt. Steam three and a half hours.

(Mrs. Littell will gladly answer any questions pertaining to food and dieting).

HOME QUERIES EXCHANGE.

Dear Editor:—Will pink be worn this summer? Is the princess dress out of fashion?

Yes. No, the one-piece dress with a belt seems more popular, though.

Dear Editor:—I am coming to Detroit for Easter Sunday. Had I better wear a summer hat, or will my winter one do? What are the ladies wearing there?—Mary S. Lennon.

Easter is so early this year, that only a few will have their Easter bonnets. Indeed, the craze for a new hat for Easter is only the product of joke-writers' imaginations, and sensible women wear what is suited to the season and the weather. Of course, some have their spring hats already, but they are in the great minority, and you will be all right in your winter hat, provided it is neat and carefully brushed and freshened up.

Dear Editor:—How soon would you begin to teach a child table manners? Is my 18-months' old baby too young to be taught not to eat with his fingers and snatch things off the table?—Mrs. B. Romulus.

A baby that is old enough to be brought to the table is old enough to be taught how to behave. A child of 16 months should know how to use a spoon. The little curved handled ones are easily managed by baby fingers, and they can be given when he is 13 months old. Set the baby far enough away from the table so he can not reach things, until he learns that he must not pull them off the table.

Dear Editor:—My two-months' old baby does not grow. She seems well, is not fretful, and sleeps well, but she has not gained an ounce in three weeks. Is this right? It seems to me she ought to gain steadily. What would you advise me to do? I am giving her only natural nourishment.—Young Mother, Flint.

The baby is not getting nourishment enough, as a sufficiently nourished child should gain at least a quarter of a pound a week. As she is well and not cross, it is evident your milk agrees with her. Try giving her a tablespoonful of cow's milk each time before nursing, the milk of any cow will do if you give it to her and nurse her directly after. You can feed her the milk with a spoon or get a nursing bottle. Of course, the milk must be warmed. If you see she digests it readily and gains a bit, increase the amount gradually, always giving it just before nursing. In this way there is no danger of the cow's milk hurting her, and she still gets the human milk, which seems to be of good quality.

FREE BOOK ABOUT CANCER.

The Leach Sanatorium, of Indianapolis, Ind., has published a book on cancer, which gives interesting facts about the cause of cancer; tells what to do in case of pain, bleeding, odor, etc.; instructs in the care of the patient, and is in fact a valuable guide in the management of any case. The book is sent free to those interested who write for it, mentioning this paper.

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The Newest Things in Wall Paper.

Some Artistic Papers and Borders and How to Use Them.

WILL you have to decorate this spring? "Paper," we used to say, but such is our progressive-ness that we now say "decorate," as though we expected to hire some modern Michael Angelo to come in and paint undying pictures on our walls and ceilings. When we consider the short life of American wall paper, and the marvelously short time in which it fades, leaving only faded spots where pictures have hung, it seems a travesty to use the term, "decorate" in connection with covering the walls of our rooms.

However, if you are going to do anything to your rooms, here is something to remember. The very newest thing is to dispense with a border. Run the side paper to the ceiling, finish with a molding, and instead of papering the ceiling, tint it some pretty shade to harmonize with the walls. It makes a very pretty

change from the old borders and drop ceilings, and saves work, which also means money. Of course, not every one is doing this, for borders are dear to the heart of many. Many are still clinging to borders, and for them the crown borders are beautiful. These borders follow the pattern in the side wall paper; that is, instead of being a straight even edge border put on primly above, the border is a continuation of the design in the paper below, of course making it necessary to put the molding up. Many of these borders are in patterns of graceful clusters of flowers caught together with loops and streamers of ribbon.



The Border is a Continuation of the Design of the Paper Below.

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The decorated frieze for a border is good for large rooms or rooms which are to be decorated to carry out some idea. The subject of the frieze may be anything you choose, some scene that appeals to you personally. There are Dutch landscapes, hunting scenes, woodland spaces with deer beside still pools, roadside scenes and scores of others. For the nursery this frieze is covered with Mother Goose pictures or pictures of animals, Brownies and other things dear to the

hearts of children. A charming dining room frieze shows mountains in the distance with a clear lake at the foot, and in the foreground, towering trees. The paper used with this is plain. Burlap would be the best thing for a dining room. This material is steadily gaining in popularity for while it costs a bit more than paper it outlasts any paper and may be painted over and thus renovated. There are burlap prints, paper printed to look like burlap. This comes for less money the roll, but it is narrower and you only get about two-thirds as many square yards as you do of the real article.

In novelty papers there are chambray effects which look much like the cloths of that name. They come in chambray colors, light blues and pinks as well as in darker shades. These are good for bed rooms and are very attractive when fin-

ished with crown borders. Oatmeal paper is somewhat like our old friend, the ingrain, but it is sprinkled all over with rough white blotches which look as though someone had strewn rolled oats over it while it was warm and sticky.

For a library or a large living room, leather effects are eminently fitting. They have the solid, substantial look that goes with such rooms. These leather papers come in heavy embossed patterns, one resembling alligator skins. Others are striped in brown, relieved by dull red, while green leathers are lightened by shades of lighter green.

Two-tone effects are good in other papers than leather. "High-light" effects they are called in some cases where the one tone looks like the shadow of the other. Mixtures of tan and green are good, but in choosing a determining color remember that tan is a better color than green this year.

For a hall, metal effects are much chosen. These are embossed papers in colors resembling the metals, silver, gold and brass being popular. One especially beautiful paper looks like a piece of hammered brass.

In choosing the color of your paper much depends upon the size of the room, as well as upon the light it will receive. Strong colors make a room look small, while delicate colors make it look large. So a small room should be papered in a delicate color and a large room in some strong shade.

MODERNIZING A SHIRT WAIST.

BY ELLA E. ROCKWOOD.

THAT details apparently slight can stamp a shirt waist as unmistakably a back number, no one can deny. And there are few women who are not willing to plead guilty to a fondness for those which are strictly up-to-date.

For the past several seasons the principal changes in these popular garments have been confined to the sleeves. In the body itself considerable latitude is permitted, and pleats and tucks, insertions and other details have been left largely to individual choice. Even neck finishings do not belong in any one class as there is no arbitrary rule laid down and we find favor equally divided between collars attached to the garment and those which are separate, linen turn down, after the comfortable mode of the Dutch neck, and those which stand up. Equally wide is the latitude allowed in connection with the tie and all sorts of bows, string ties and jabots are seen, accepted by Dame Fashion.

The one arbitrary feature which, from year to year, indelibly stamps the period of shirt waist construction lies in the sleeve.

If this be al la mode nothing else seems to count. To make last season's waists pass even critical inspection all that is necessary is to remodel that one part. And this is easily done in any instance where there is a plain material, presumably white, and not a pattern weave. In the latter case something may be done but not so easily, since it might be impossible to match the fabric in new material.

When, as with the season of 1909, the popular demand was for tight sleeves it was comparatively easy to cut down those worn in 1908, adding a point or rows of insertion if necessary to increase the length. With 1910, however, the situation is reversed and fewer tight sleeves are going to be worn. The prevailing style calls for slightly more fullness and a rather wide cuff along the line of a modified bishop. How is this going to be managed? Simply by buying enough material to make a new pair of sleeves.

As I have said, this is not always possible, but with the ordinary mull it is the easiest thing imaginable. Take out the old sleeves and with a bit cut from one of them match it at any counter where such goods is for sale. As a precaution a sample may be obtained and laundered before deciding as a closer match may then be secured in quality and degree of sheerness. Get a new pattern and from it cut a pair of sleeves. When these have been once laundered with the waist to which they have been attached the difference between the two parts cannot ordinarily be detected. Result, a new shirtwaist at the bare expense of new sleeves. The trimming, such as lace or insertion, may be transferred from the cast-off pair which, since it matches that on the body of the garment, heightens the delusion that it is entirely new.

In the case of an expensive white linen waist the saving in thus remodeling is worth while. Many an otherwise good garment is laid aside, or else worn with little satisfaction because the sleeves are out of style. This cloth can always be matched no matter what the quality.

When white shirt waists become too far worn to be useful in their original capacity they make serviceable corset covers by cutting out the neck, removing the sleeves and binding with strips cut from the latter on the bias, trimming as desired. If open in the back, a seam stitched flat will not be noticeable and a facing added to the sides of the front when cut down the middle will hold buttons and buttonholes. The lower edge may be cut away at the waist line and gathered into a band. In addition to the band a shaped peplum of the goods will give a finishing touch.

FREE SCHOLARSHIPS FOR EVERYBODY

Rochester, N. Y., March 2, 1910.—The Directors of Franklin Institute, today voted to prepare candidates for the next Railway Mail Clerk Examinations free of charge. A postal, containing the applicant's name, addressed Dep't R 48, is sufficient application.

A Little Thing Changes the Home Feeling.

Coffee blots out the sunshine from many a home by making the mother, or some other member of the household, dyspeptic, nervous and irritable. There are thousands of cases where the proof is absolutely undeniable. Here is one:

A Wis. mother writes:

"I was taught to drink coffee at an early age, and also at an early age became a victim to headaches, and as I grew to womanhood these headaches became a part of me, as I was scarcely ever free from them.

"About five years ago a friend urged me to try Postum. I made the trial and the result was so satisfactory that we have used it ever since.

"My husband and little daughter were subject to bilious attacks, but they have both been entirely free from them since we began using Postum instead of coffee. I no longer have headaches and my health is perfect."

If some of these nervous, tired, irritable women would only leave off coffee absolutely and try Postum they would find a wonderful change in their life. It would then be filled with sunshine and happiness rather than weariness and discontent. And think what an effect it would have on the family, for the mood of the mother is largely responsible for the temper of the children.

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

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

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WISHES THE SCHOOL LAW HAD EXISTED 45 YEARS AGO.

"A father's opinion of the School Law," which appeared in the Michigan Farmer of February 19, deserves a slight discussion. This Michigan father must not confine this matter wholly to himself. He must consider that if he is willing and anxious to keep his child in school and does likewise, this law of compulsion was not made for him. There are others who have children attending our schools who are present just often enough to clear the law, and boys ranging from seven to 15 years spending the balance of their time during the school term, hunting and fishing or skating, and the father cursing the state school law because they are obliged to put in at least a few days in school rooms.

In almost every community you can find parents who are unable to read or write their own name, and in those families you will find girls and boys who are at the age of seven or eight years, capable of teaching the parent. Why? Because the state of Michigan says a certain part of the child's life must be made up in the school room, while the parents, in childhood, took their choice, go to school or not.

My dear "Father in Michigan," the state has not, as you say, stepped in and torn from your breast the whole responsibility of educating your child. It has simply doubled your responsibility and our self-sacrificing spirit should be stronger, to know that we have the grand old state of Michigan behind us in this matter. Also, no law of this nature should lessen our self respect. Do the poor father and mother have to grub and dig any harder now to send their children to school than they did when the writer was a boy, 45 years ago? I was compelled to stay at home while my natural desire was to the contrary. My father like thousands of others, could not see the need of a child's having an education, and what was the result? It was this: At the age of 21 I had not passed the fifth grade and what education I got I got after that was in school, located in the old home of the editor of our Michigan Farmer.

My dear fathers and mothers, do your duty in this matter, which will entitle you to the thanks, and our state will not object. "Do you think they will outclass the old-fashioned product?" Certainly they will.

Should this old earth stand for 50 years it will be almost impossible to find a human being who can not read or write. As to the physical ability of the child, I consider the part taken by our doctors a protection. We have no right or part in that capacity and it would be impossible for us to decide in this case and when we are as far gone as that we need man, or body of men, to make laws and rules for us.

Our friend scorns the doctors as he also does the law, and seems to think that because he is responsible for these children coming into the world, he should have all to say regardless of law and order. And again, my dear friend, if you are where you should be, no man can come between you and your God. And if you prefer to stand for right, study up a bit on that word and you will see that thousands of children are protected only by this law.

B. W. C.

HANDY TWO-LAYER CAKE.

Here is a recipe which may be called "handy cake," because it may be used in so many ways.

Fill a cup one-third full of butter and set it where it will melt. Put two cups of flour, one cup of sugar and two teaspoonfuls of baking powder in a dish and stir well together. When the butter is melted break into it two eggs, or one if eggs are not plentiful, and fill the cup with sweet milk. Use any flavor you choose. This is for plain loaf cake. If you want to have icing of any kind save one of the whites, using one egg and the yolk of the other. If you wish custard or lemon filling save one of the yolks, using more milk to fill the cup. It seems to make no difference with the cake. It is nice with fig, nut or raisin filling. A teaspoonful and a half of cinnamon and half a teaspoonful of cloves added and the layers put together with jelly, is nice. Half a teaspoonful each of cloves, cinnamon and nutmeg, and half a cup of raisins make it into a nice fruit loaf.

M. M. N.

Do You Want a Shetland Pony, Cart, Saddle, Harness? A complete outfit. All Free. See page 337.

Here's Good News on My 1910 Split Hickory Buggies

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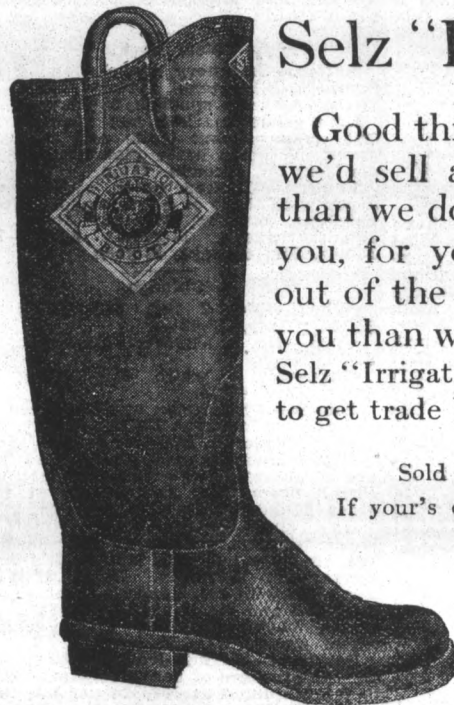
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MARKETS

DETROIT WHOLESALE MARKETS.

March 23, 1910.
Grains and Seeds.

Wheat.—The market is almost entirely dependent upon the weather and prices are changing according as conditions influence the growing crop. During the week prices for cash grain have fallen off while futures are quoted at an advance. The cash market has lost some of its activity and receipts compare favorably with those of a year ago. It seems that farmers are putting their holdings upon the market without reserve. Millers are taking the wheat moderately and stocks are accumulating slowly. The visible supply shows an increase of but a few thousand bushels. Reports of damage to the crop in Michigan are quite serious in some sections. On Tuesday the trade was given a bearish tone by the report from the Missouri authorities showing that the crop of that state was damaged to the extent of 50 per cent, which is much worse than the most radical bull had expressed. One year ago the price for No. 2 red wheat was \$1.23 per bu. Quotations for the past week are:

	No. 2	No. 1	May	July
Thursday	1.18½	1.18½	1.19½	1.09
Friday	1.18½	1.18½	1.19½	1.09
Saturday	1.18	1.18	1.19	1.08½
Monday	1.17½	1.17½	1.18½	1.08½
Tuesday	1.17½	1.17½	1.18½	1.09½
Wednesday	1.18	1.18	1.19	1.10

Corn.—The average price for corn is below that for the previous week. The falling off is due quite largely to a falling off in demand, liberal receipts and influence of the wheat trade. The weather has been favorable for the early development of spring forage which will diminish the demand for stored feeds. On Tuesday there was a stronger feeling in the trade. One year ago the price for No. 3 corn was 66½¢ per bushel. Quotations are as follows:

	No. 3	No. 3
	Yellow	White
Thursday	61½	62
Friday	61	62
Saturday	60½	61½
Monday	60	61
Tuesday	61	62
Wednesday	60½	61½

Oats.—Here, too, there has been a slight decline in values although the margin between the high and low figures is not as broad as in the corn and wheat deals. The local market is very quiet. There is an improved demand for cash oats. One year ago we were paying 55¢ for No. 3 white oats. The visible supply shows a slight decrease for the week. Quotations are as follows:

	Standard	No. 3
		Yellow
Thursday	47	47
Friday	47½	47
Saturday	47½	47
Monday	47½	47
Tuesday	47½	47
Wednesday	47½	47

Beans.—During the week beans have been offered quite freely upon the local market but no buyers appear to be present and as a result nominal quotations were reduced five cents for both cash and April delivery. Quotations for the week are:

	Cash	April
Thursday	\$2.15	\$2.17
Friday	2.15	2.17
Saturday	2.15	2.17
Monday	2.12	2.14
Tuesday	2.10	2.12
Wednesday	2.10	2.12

Cloverseed.—The low price was reached in the cloverseed market last week for the season when cash seed was exchanged at \$6.90 per bushel; since the market has been advancing under a liberal demand and prices are now 60¢ above the low figure yet recorded. Quotations are:

	Prime	Spot	Mar.	Apr.
Thursday	\$6.90	\$6.90	\$6.90	
Friday	7.10	7.10	7.10	
Saturday	7.10	7.10	7.10	
Monday	7.20	7.20	7.20	
Tuesday	7.50	7.60	7.25	
Wednesday	7.85	7.85	7.40	

Rye.—Market inactive and easy. No. 1 is quoted at 80¢ per bu., which is last week's quotation.

Visible Supply of Grain.

	This week.	Last week
Wheat	26,798,000	26,419,000
Corn	14,456,000	13,882,000
Oats	9,372,000	9,391,000
Rye	703,000	642,000
Barley	2,815,000	2,840,000

Flour, Feed, Provisions, Etc.

Flour.—Flour market is steady with the values given a week ago. Quotations as follows:

Clear	\$5.30
Straight	5.80
Patent Michigan	6.15
Ordinary Patent	5.95

Hay and Straw.—Last week's prices prevail. Quotations are: No. 1 timothy, new, \$18; No. 2 timothy, \$17; clover, mixed, \$17; rye straw, \$8.50; wheat and oat straw, \$7 per ton.

Feed.—Prices are steady on last week's basis. Carlot prices on track: Bran, \$27 per ton; coarse middlings, \$27; fine middlings, \$30; cracked corn, \$27; coarse corn meal, \$27; corn and oat chop, \$25 per ton.

Potatoes.—The stocks of potatoes are ample to meet demands of the trade and prices are unchanged. Michigan grown are selling in car lots at 25¢ per bu.

Provisions.—Family pork, \$29@30; mess pork, \$26.50; medium clear, \$28@29; pure lard, 15½¢; bacon, 19@20¢; shoulders, 15¢; smoked hams, 18@18½¢; picnic hams, 13½¢.

Hides.—No. 1 cured, 10½¢; No. 2 cured, 9½¢; No. 1 green bulls, 7½¢; No. 1 green calf, 14¢; No. 2 green calf, 13¢; No. 1 cured calf, 14½¢; No. 2 cured calf, 13½¢; No. 1 horsehides, \$3.50; No. 2 horsehides, \$2.50; sheepskins, as to wool, 50¢@52.

Dairy and Poultry Products.

Butter.—The butter market has been showing strength for several days past and the trade was not surprised when an advance of one cent was made in creamery goods this week. The market can not be said to be active. Extra creamery is quoted at 32¢ per lb.; do. first, 31¢; dairy, 22¢; packing stock, 20¢.

Eggs.—While the egg trade has been reported easier from time to time during the past week, there has been no change in the local quotations and everything offered has been readily taken by the trade. Fresh receipts, cases included, are quoted at 21¢ per dozen.

Poultry.—The market has shown some strength during the past week and advances are noted, especially in the chicken department where there is an excellent demand and but few supplies to meet the calls. Quotations are as follows: Live: Spring chickens, 17@17½¢; hens, 17½¢; geese, 14@15¢; turkeys, 17@18¢. Dressed: Chickens, 17@18¢; hens, 17@18¢; ducks, 19@20¢; geese, 15¢; turkeys, 20@24¢.

Cheese.—Michigan, late made, 15@15½¢; Michigan, fall made, 16½@17¢; York state, 18½¢; Limburger, Wisconsin, 18¢; New York, 19¢; bricks, 18½@19¢; Swiss, domestic block, 20¢; Swiss loaf, 22@23¢.

Calves.—Higher. Choice to fancy, 13@13½¢; ordinary, 12@13¢ per lb.

Fruits and Vegetables.

Apples.—Market steady and higher. Spy, \$4@4.50; Baldwin, \$3.50@4; steel red, \$5; Greening, \$4@4.50 per bbl.

Cranberries.—Cape Cod berries selling at \$2 per bu.

Onions.—Domestic, 80@85¢ per bu; Spanish, \$1.90 per crate.

Cabbage.—1.75@2 per bbl.

Vegetables.—Beets, 60¢ per bu; brussels sprouts, 25¢ per qt; carrots, 50¢ per bu; cauliflower, \$2.25@2.50 per bu; celery, 45¢ per doz; eggplant, \$2@2.50 doz; green onions, 15¢ per doz; lettuce, hot-house, 1.25 per doz; mint, 25@30¢ per doz; parsley, 25@30¢ per doz; radishes, 25¢ per doz; spinach, 90¢ per bu; turnips, 50¢ per bu; watercress, 40¢ per doz; wax beans, \$4.50 per bu; pieplant, 45¢ per doz.

OTHER MARKETS.

Grand Rapids.

Jobbers are paying the country trade 19¢ for eggs. The Easter demand is very large. Dealers are paying 23¢@24¢ for dairy butter. Creamery is up 1¢ this week, being quoted at 31¢. Dressed hogs are firm, farmers getting 12½@13¢ this week. Live poultry continues firm at the following prices: Turkeys, 18@20¢; chickens, 16@17¢; hens, 15@16¢; ducks, 16@17¢; broilers, 14@2 lbs. each, 30@32¢. The potato market continues very weak, with prices sagging all the time. The wheat market has slipped off 1¢, with other grain steady.

New York.

Butter.—Creamery goods showing more firmness. Western factory firsts, 22@23½¢; creamery specials, 33½¢.

Eggs.—The market has reacted from last week's strong trade and prices are lower. Western firsts quoted at 22@22½¢ per doz; do. seconds, 21½¢.

Poultry.—Dressed, quiet, with prices on a par with those of a week ago. Western chickens, broilers, 16@17¢; fowls, 14@18½¢; turkeys, 18@23¢. Alive.—Firm. Fowls, 20¢; turkeys, 13@18¢.

Chicago.

Wheat.—No. 2 red, \$1.18@1.19; May, \$1.13½; July, \$1.08½.

Corn.—No. 3, 58@59¢; May, 62½¢; July, 64½¢.

Oats.—No. 3 white, 41¼@44½¢; May, 43½¢; July, 42½¢.

Butter.—Creameries are advanced with the general market. Dairies steady. They are: Creameries, 26@32¢; dairies, 22@27¢.

Eggs.—Receipts are liberal and prices are a fraction below those of last week. Prime firsts, 21¢; firsts, 20¢; at mark, cases included, 17½@19¢ per doz.

Hay and Straw.—Choice timothy is lower while other grades and classes of hay are on a par with last week's values. Quotations: Timothy, choice, \$18@18.50; No. 1, \$17@18; No. 2 and No. 1 mixed, \$16@17; No. 3 and No. 2 mixed, \$12@15.50; rye straw, \$8.50@9.50; oat straw, \$7.50@8; wheat straw, \$7@7.50.

Potatoes.—Market declined about 5¢ under the pressure of heavy receipts. Choice to fancy quoted at 30@32¢ per bu; fair to good, 27@28¢.

Beans.—Unchanged. Choice hand-picked, \$2.20 per bu; fair to good, \$2.15; red kidneys, \$2.80@3.10.

Boston.

Wool.—Shearing has already begun in the far west. Agents of the brokers are not doing an extensive amount of buying because growers are holding goods at a high figure believing that the condition of the market warrants their getting a premium over the prices of other years.

The following are the leading domestic quotations for the week: Ohio and Pennsylvania fleeces—No. 1 washed, 40@41¢; delaine washed, 37@38¢; XX, 36@37¢; ¼-blood combing, 35¢; ¾-blood combing, 35¢; ¼-blood combing, 34¢; delaine unwashed, 29¢; fine unwashed, 25@26¢. Michigan, Wisconsin, New York fleeces—Fine unwashed, 24@25¢; delaine unwashed, 28¢; ¼-blood unwashed, 33@34¢. Kentucky, Indiana and Missouri—Three-eighths blood, 35@36¢; ¼-blood, 34@35¢.

Elgin.

Butter.—Market firm at 32¢ per lb., which is 1¢ above the quotation of a week ago. The sales for the week amounted to 434,900 lbs., compared with 432,200 for the previous week.

THE LIVE STOCK MARKETS.

Buffalo.

March 21, 1910.

(Special report by Dunning & Stevens, New York Central Stock Yards, East Buffalo, N. Y.)

Receipts of sale stock here today as follows: Cattle, 180 cars; hogs, 9,600; sheep and lambs, 13,000; calves, 2,200.

All the good prime grades of cattle

today sold strong 15@25¢ per hundred higher than one week ago while the medium and low grades sold from 10@15¢ per hundred lower. In some instances bologna bulls sold a quarter lower. The cause of this decline on the medium and lower grades was that all of the receipts except a few loads were of that class. The good prime cattle were in scant supply today. Cattle weighing below 1,200 lbs., having the quality and fat, sold higher today than the heavier grades.

We quote: Best export steers, \$7.75@8.25; best 1,200 to 1,300-lb. shipping steers, \$7.25@7.75; best 1,100 to 1,200-lb. do., \$7.75@8.50; medium 1,050 to 1,100-lb. butcher steers, \$6@6.50; light butcher steers, \$5.50@6; best fat cows, \$5.50@6; fair to good do., \$4.75@5.25; trimmers, \$3@3.50; best fat heifers, \$6.25@6.75; fair to good do., \$5.50@6; common do., \$4.75@5.50; best feeding steers, 950 to 1,000 lbs., \$5.50@6; 800 to 900-lb. do., \$5@5.50; 700 to 750-lb. do., \$4.50@5; 600 to 650-lb. do., \$4@4.50; little common stockers, \$3.50@4.50; best bulls, \$6@6.50; bologna bulls, \$5@5.25; stock bulls, \$4@4.50; best milkers and springers, \$5.50@6; fair to good do., \$4.50@5; common do., \$2.50@4.

With 32,000 hogs in Chicago today and a fair run here our market was weak and lower than Saturday. Our packers started out this morning bidding \$11.10 for the best hogs but after a hard fight we succeeded in working them up to \$11.20. The market closed easy with a few loads of the late arrivals going over unsold. This is the last week of Lent and we look for for rather a dull and draggy trade until the latter part of the week.

Mixed, medium and heavy, \$11.10@11.20; yorkers, \$11@11.15; pigs, \$10.75@10.80; roughs, \$10.35@10.45; stags, \$8.25@8.50.

The lamb market opened active with most of the best lambs selling at \$10.65. The market closed firm and if receipts are not too heavy we look for steady prices the balance of the week.

We quote: Best lambs, \$10.65@10.70; fair to good, \$10@10.60; culls, \$9.25@10; skin culls, \$7@7.75; yearlings, \$9.50@10; wethers, \$8.75@9; ewes, \$8@8.50; cull sheep, \$4@7; best calves, \$10.75@11; fair to good do., \$9.50@10.50; cull to common, \$7.50@9; heavy, \$4@5.50.

Chicago.

March 21, 1910.

Received today: Cattle, 21,000; Hogs, 35,000; Sheep, 14,000. Same day last year: 15,086; 41,900; 13,744. Received last week: 44,691; 94,597; 48,110. Same week last year: 54,047; 174,990; 64,509.

A new week opened today, with no heavy supplies of live stock, and there was an active general demand for cattle, prices ruling strong and largely 10¢ higher. There was much comment on the fact that last week's cattle receipts were the smallest for any week since the first week of last August. All except prime beefs are the highest in thirty years. Hogs were 10@15¢ lower, an early sale of a load of prime 340-lb. swine at \$11 being the only sale that high. That figure was 5¢ below the best price of the season. Long before the close the bottom had dropped out of the market, and \$10.90 was an outside figure, sales being made all the way down to \$10.40 for common hogs and the best light hogs quotable at \$10.80. Stags have been selling at \$11.25@12, but closed lower with barrows. Pigs were scarce and tending upward, and Armour & Co. paid \$9.50 per 100 lbs. for about 400 Iowa feeder 55-lb. lambs, an advance of 15¢. They shipped these lambs to a near-by feeding point. Lambs were salable at \$7.50@10.30, wethers at \$7.75@8.85, ewes at \$4.50@8.25, bucks and stags at \$5@7.50, yearlings at \$8.50@9.25, clipped lambs at \$8.75@9.60 and feeding lambs at \$8.50@9.50. Within a week sheep and lambs have advanced 50@75¢. Last week's receipts of hogs averaged in weight 219 lbs., a gain of 4 lbs. over the preceding week.

Cattle continued in meager supply for still another week, supplies showing a great further falling off and showing up poorly in volume compared with former years. As shippers secured a liberal share of the offerings, there was lively competition among buyers, and this gave sellers strong control of the market. Quality considered, it was the highest market in over a score of years, with a marked scarcity of choice, weighty beefs. Cattle made advances of 3¢@50¢, with the bulk of the beef steers going at \$6.50@8.10, and the poorer light steers on the feeder order selling at \$5.50@6.50 and choice to fancy beefs at \$8.10@8.65. No good cattle were offered below \$7.40, and plenty of cattle went \$1 higher than a month ago, it being a case of scarcity. Beef of the cheaper grade has kept on advancing, being chiefly wanted, while prime beef has been reduced in price. In the absence of enough steers, buyers have turned to butcher stock very largely, and cows and heifers shared fully in the advance, sales being made at \$4.10@7.50, while canners and cutters sold at \$2.75@4. Bulls were higher and active at \$3.50@6.40, while calves were the highest of the year at \$3.50@10.75. Stockers and feeders made new high records, with scanty offerings, stockers selling at \$4@5.90 and feeders at \$5.85@6.65. Milch cows had a good sale at \$30@65 each.

Hogs were marketed here and elsewhere in extremely small numbers last week, compared with recent years, and a new high record was made, with sharp declines and recoveries, buyers making determined efforts to put values on a lower basis. On some days large numbers of hogs were carried over unsold, but this was not due altogether to the abstinence of the packers in buying, for plenty of owners preferred to hold their hogs to selling on a lower basis. The offerings were largely good in quality, and within a short time the average weight of the receipts has risen to 215 lbs., the heaviest since the middle of last December, when it was 218 lbs. The average has been running much heavier than either one or two years ago, but three years ago it stood at 227 lbs. Everything has sold at

fancy prices, the common and medium grades being taken as substitutes for better lots, which were hard to obtain, and even pigs sold extremely high. The market has had a great advance for fresh pork products, while cured products have experienced an extraordinary boom. Provisions are too high to allow a normal exportation, and England is receiving carcasses of hogs fed on rice from China.

Sheep and lambs experienced a remarkable boom in prices last week, their extreme scarcity enabling sellers to obtain the highest figures ever recorded. It happened frequently that practically all of the supply was disposed of before noon, and shorn flocks were much more numerous than heretofore and showed the largest advances. Country buyers were looking around for feeding sheep and lambs, and paid up to \$7.75 for the former and \$9.35 for shearing lambs, prices exceeding all the past records. Breeding bucks were taken out at \$7.25@7.50, with no large number offered for sale. It is a strange fact that in spite of the unprecedented incentives offered for making stock fat, some sheepmen have persisted in marketing extremely thin lambs that had to be closed out at a big discount. Killers have been doing some close figuring, and dressing sheets are watched more closely than in ordinary times. Fat shorn lambs dress high, and the high-priced carcasses on the hooks are the cheapest, giving better results than fleeced goods not properly finished.

Horses were in excellent general demand last week, with normal supplies and steady prices most of the time, the best inquiry being during the first part of the week, as usual. Small southern chunks had a brisk demand at \$75@150 per head, and there was a large call for farm mares and chunks at \$140@175, and occasionally a sale at a higher figure. Medium to choice drafters were in increased eastern demand, with sales at \$175@250, while small cotton mules were firm at \$100@150, with heavy truck mules selling at \$175@275. Coach horses had a broader outlet at \$150@300, with the bulk of the sales at \$175@225. Feeders were salable at \$170@225, and there was a fair demand for expressors at \$175@215. Buyers are traveling through Iowa and South Dakota breeding districts in search of good horses and a good many shipments have been made to the Pacific coast and the Canadian northwest.

LIVE STOCK NOTES.

Everywhere the consumers of meats are raising strong protests against the recent further advances in prices for beef, mutton, fresh pork, cured hams, bacon, etc., ruling prices being unusually high. A provision salesman for one of the Chicago packing firms said the other day that wholesale prices for fresh pork loins at 16½@17¢ per lb. and butts at 15¼@15½¢ were the highest prices he had ever known. He added: "The market has simply been following the pace set in live hog trade and as long as hogs continue to sell close up to \$11 there is no hope of working the product lower. Supplies are running very light and surplus stocks are being cut into quite materially. Tenderloins are practically at a prohibitive price of 30¢ and very few lots can be had even at this figure."

The big demand for beef is running on the cheaper cuts, and this has led to a recent lowering of prices by wholesalers on the No. 1 ribs of beef, while No. 1 loins have shared in the decline, with advances in No. 2 and No. 3 ribs. Chucks and plates have been advanced on all grades.

Miles Henline, a pioneer feeder and stock shipper of Illinois, was on the Chicago market recently with a load of hogs of his own feeding which sold at \$10.75 per 100 lbs. Mr. Henline said that he shipped a load of hogs to the old Myrick yards in Chicago in 1865 which sold for \$12.90. They were raised and fed by his father.

"There is unanimous testimony of the scarcity of hogs in all sections," says the Cincinnati Price Current, "and an intimation of lack of plentifulness of cattle for marketing in the near future."

E. L. Flanders, of Illinois, one of the successful breeders and feeders of hogs in that region, marketed a car load of 248-lb. hogs at Chicago recently at \$10.75 per 100 lbs., shortly before the quick jump to \$11. He said hogs were never scarcer in that section than at the present time.

Nebraska importers of Percherons, Shires and Belgians report an active demand for stallions. A firm located at Lincoln in that state sold 25 stallions during February and imported over 100 head from August to October inclusive.

The Pacific coast is forced to come eastward for fat sheep, and wethers fed in Montana have been shipped freely of late to Seattle. Everywhere slaughterers have to do some lively hustling to secure enough mutton for their customers. Chicago and Missouri river markets have depended largely on Colorado lambs recently, and after these are all in, supplies promise to be lighter than ever. Sheep usually winter poorly, owing to the unusually severe weather and heavy snow storms, and all the indications are that grass sheep will be late in reaching market. Texas and Arizona usually market their flocks quite freely in April and May, but they will hardly be fat enough to ship before summer this year. Recent market quotations for both sheep and lambs have been the highest ever known.

Grass promises to go to waste in parts of Colorado for lack of cattle, prices being so high that land owners hesitate about stocking up. A year ago two-year-olds were selling for \$20, while now \$30 is demanded by owners.

Colorado-Mexican lambs have been prime favorites in the Chicago market recently, selling at the top figures daily. Shorn lambs have also been extremely good sellers whenever they were well finished. Yearlings have been especially scarce and extraordinarily high.

Across the Canadian border there is a lack of sheep, and fat live wethers have been shipped recently from Montana to British Columbia.

THIS IS THE LAST EDITION.

In the first edition the Detroit Live Stock markets are reports of last week; all other markets are right up to date. Thursday's Detroit Live Stock markets are given in the last edition. The first edition is mailed Thursday, the last edition Friday morning. The first edition is mailed to those who care more to get the paper early than they do for Thursday's Detroit Live Stock market report. You may have any edition desired. Subscribers may change from one edition to another by dropping us a card to that effect.

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

March 24, 1910.

Cattle.

Receipts, 1,208. Good grades 15@25c higher; common grades 10c higher.

We quote: Extra dry-fed steers and heifers, \$6.50@7.85; steers and heifers, 1,000 to 1,200, \$6@6.50; steers and heifers, 800 to 1,000, \$5.25@5.85; steers and heifers that are fat, 500 to 700, \$4.75@5.25; choice fat cows, \$4.75@5.50; good fat cows, \$4.50@4.75; common cows, \$3.50@4; canners, \$2.75@3.25; choice heavy bulls, \$5@5.85; fair to good bolognas, bulls, \$4.50@4.75; stock bulls, \$3.50@3.75; milkers, large, young, medium age, \$4@4.50; common milkers, \$2@3.50.

Roe Com. Co. sold Hammond, S. & Co. 1 canner weighing 840 at \$3, 1 cow weighing 780 at \$3, 2 do av 1,075 at \$4.50, 3 do av \$73 at \$3, 1 do weighing 1,180 at \$5, 2 do av 1,050 at \$4; to Mich. B. Co. 1 bull weighing 1,300 at \$5.15, 18 steers av 961 at \$6, 13 do av 800 at \$6; to Newton B. Co. 9 cows av 825 at \$4.25, 5 steers av 940 at \$6.65; to Watts 8 steers av 647 at \$5.50; to Sullivan P. Co. 1 bull weighing 1,780 at \$5.50; to Newton B. Co. 5 steers av 850 at \$6.40, 2 bulls av 1,550 at \$5.50; to Mich. B. Co. 21 steers av 762 at \$5.50, 2 do av 510 at \$5; to Rattkowsky 1 cow weighing 850 at \$3.50; to Hammond, S. & Co. 17 steers av 850 at \$5.75, 2 do av 660 at \$5.75, 12 butchers av 994 at \$4.50, 2 cows av 850 at \$3.50; to Breitenback Bros. 10 butchers av 645 at \$5.25; to Hammond, S. & Co. 4 steers av 1,350 at \$7.85.

Bishop, B. & H. sold Newton B. Co. 3 cows av 1,033 at \$4.50, 9 steers av 926 at \$6; to Zoehner Bros. 1 bull weighing 1,300 at \$5.85; to Bresnahan 4 butchers av 470 at \$4.50, 1 bull weighing 480 at \$4.25; to Sullivan P. Co. 9 butchers av 697 at \$5.10, 3 steers av 1,040 at \$7.25, 5 do av 930 at \$6.25, 3 do av 933 at \$6.25, 7 do av 1,143 at \$7.25, 6 butchers av 600 at \$4.60; to Hammond, S. & Co. 2 do av 725 at \$5.50, 1 cow weighing 1,080 at \$4.75; to Sullivan P. Co. 3 do av 773 at \$3.25, 6 butchers av 771 at \$4.50, 13 do av 708 at \$5.30, 3 bulls av 1,283 at \$5.25, 2 do av 1,475 at \$5.25, 1 do weighing 800 at \$4.75, 2 cows av 920 at \$5, 4 steers av 1,162 at \$7, 1 heifer weighing 1,100 at \$6; to Newton B. Co. 23 steers av 790 at \$6.25; to Sullivan P. Co. 2 do av 1,050 at \$7.50.

Spicer & R. sold Newton B. Co. 4 steers av 1,075 at \$6.50, 21 do av 1,151 at \$7; to Heinrich 4 do av 815 at \$6, 2 do av 600 at \$5; to Rehfuß 11 do av 1,002 at \$6.60, 3 bulls av 1,473 at \$5.50; to Rattkowsky 1 cow weighing 850 at \$3.50, 4 do av 995 at \$4.25; to Goose 8 steers av 400 at \$4.50; to Sullivan P. Co. 1 bull weighing 1,320 at \$5.25, 2 do av 800 at \$4.50, 1 cow weighing 800 at \$4.50, 2 do av 870 at \$3, 2 bulls av 1,450 at \$5.25, 3 do av 777 at \$4.75; to Watts 2 cows av 990 at \$4, 1 do weighing 1,170 at \$4, 3 butchers av 570 at \$5; to Bresnahan 13 heifers av 600 at \$4.90; to Newton B. Co. 1 cow weighing 990 at \$5.25, 11 butchers av 765 at \$4.50.

Haley & M. sold Fronn 4 cows av 930 at \$3.50; to Applebaum 1 do weighing 580 at \$4, 2 steers av 800 at \$5.75; to Hammond, S. & Co. 1 do weighing 970 at \$6.25; to Goose 8 heifers av 421 at \$4.55; to Hammond, S. & Co. 1 cow weighing 740 at \$3, 17 butchers av 820 at \$6.10, 3 do av 713 at \$5.25, 1 bull weighing 1,070 at \$5.50, 1 do weighing 950 at \$5.25; to Applebaum 1 steer weighing 690 at \$5; to Breitenback Bros. 11 butchers av 654 at \$5.15; to Schlicher 13 do av 750 at \$5.10, 2 cows av 1,010 at \$3.80, 1 do weighing 770 at \$3; to Bresnahan 2 heifers av 450 at \$4.25, 4 do av 442 at \$4.35, 3 cows av 800 at \$3; to ammond, S. & Co. 2 bulls av 1,200 at \$5, 2 cows av 840 at \$3, 1 do weighing 980 at \$5, 1 do weighing 970 at \$3.50, 3 steers av 938 at \$6; to Rehfuß 1 bull weighing 1,360 at \$5.25; to Thompson 3 butchers av 760 at \$4.85; to Goose 3 do av 330 at \$4.50.

Sharp sold Bresnahan 3 cows av 816 at \$3.25.

Eddy sold Sullivan P. Co. 2 bulls av 2,110 at \$5.75, 4 steers av 1,043 at \$6.75, 10 do av 967 at \$5.85.

Wilson sold same 1 bull weighing 1,790 at \$5.50, 5 cows av 1,110 at \$5, 2 do av 980 at \$3.50, 4 butchers av 712 at \$4.75, 8 steers av 794 at \$5.50.

Stephens sold same 2 cows av 1,015 at \$4.50, 2 do av 1,145 at \$5.50.

Eddy sold Kamman 3 cows av 783 at \$5, 9 steers av 800 at \$5.50, 15 do av 857 at \$5.70, 5 butchers av 900 at \$5.

Veal Calves.

Receipts, 835. Market active and 50c@ \$1 higher than last week. Best, \$9.75@10.50; others, \$5@9; milch cows and springers dull.

Spicer & R. sold Burnstone 5 av 125 at \$9; to Newton B. Co. 4 av 130 at \$9.75; to Mich. B. Co. 17 av 125 at \$10, 6 av 150 at \$9.35, 1 weighing 110 at \$7.50; to Burnstone 8 av 140 at \$9; to McGuire 10 av 130 at \$10.

Eddy sold Nagle P. Co. 4 av 130 at \$7, 9 av 135 at \$9.

Weeks sold Lingeman 12 calves av 110 at \$9.50.

Roe Com. Co. sold Thompson 3 av 130 at \$9.50; to Hammond, S. & Co. 24 av 125 at \$9.50; to Sullivan P. Co. 3 av 225 at \$7, 7 av 125 at \$10, 10 av 120 at \$9.50; to Hammond, S. & Co. 16 av 135 at \$10.10; to Fitzpatrick Bros. 9 av 150 at \$10.25.

Haley & M. sold Thompson 5 av 140 at \$10; to Sullivan P. Co. 1 weighing 130 at \$10; to Thompson 17 av 150 at \$8.50, 2

av 335 at \$5.50; to Burnstone 12 av 135 at \$10.

Bishop, B. & H. sold Parker, W. & Co. 8 av 125 at \$10, 1 weighing 150 at \$6, 12 av 120 at \$10, 28 av 130 at \$10; to Mich. B. Co. 10 av 148 at \$10, 4 av 125 at \$10; to Parker, W. & Co. 21 av 135 at \$10.25, 12 av 130 at \$10.50; to Thompson Bros. 23 av 125 at \$9.25; to Newton B. Co. 6 av 155 at \$10.50, 10 av 139 at \$10.50, 2 av 140 at \$7, 2 av 125 at \$10, 12 av 132 at \$9.50; to Hammond, S. & Co. 7 av 150 at \$10.50, 8 av 145 at \$10.25, 31 av 135 at \$10.50, 4 av 130 at \$10.50, 3 av 125 at \$10.50; to Nagle P. Co. 25 av 110 at \$8.50; to Mich. B. Co. 37 av 125 at \$10.25, 12 av 130 at \$10.25.

Sheep and Lambs.

Receipts, 3,577. Market 25c higher than last week.

Best lambs, \$10.25; fair to good lambs, \$9.50@10; light to common lambs, \$8.50@9.25; spring lambs, \$14; fair to good sheep \$7@8; culls and common, \$4.50@5.50; clip lambs, \$9@9.50.

Bishop, B. & H. sold Thompson Bros. 5 sheep av 110 at \$7, 49 lambs av 57 at \$8.75, 2 sheep av \$5 at \$7; to Nagle P. Co. 43 clip lambs av 83 at \$8.75, 57 clip sheep av 90 at \$6.25, 359 lambs av 75 at \$9.75; to Parker, W. & Co. 44 do av 65 at \$9.50, 5 sheep av 110 at \$7; to Sullivan P. Co. 8 spring lambs av 55 at \$14.10; to Nagle P. Co. 75 lambs av 77 at \$10.20, 70 do av 92 at \$10.20, 36 sheep av 120 at \$6.75, 16 sheep av 90 at \$5, 21 clip lambs av 80 at \$9, 50 do av 85 at \$9, 14 do av 70 at \$9, 27 do av 80 at \$9; to Mich. B. Co. 59 lambs av 67 at \$9.90; to Breitenback Bros. 13 do av 65 at \$9.50, 16 do av 80 at \$9.50, 25 do av 85 at \$9.50.

Haley & M. sold Sullivan P. Co. 2 lambs av 60 at \$9.50, 1 sheep weighing 170 at \$6.50; to Thompson 14 do av 90 at \$7.75.

Patterson sold Hammond, S. & Co. 6 sheep and lambs av 100 at \$8.

Roe Com. Co. sold Fitzpatrick Bros. 96 lambs av 70 at \$10, 28 sheep av 85 at \$7. Sharp & W. sold Mich. B. Co. 30 lambs av 75 at \$10.10.

Spicer & R. sold Mich. B. Co. 15 lambs av 52 at \$8.70, 3 sheep av 140 at \$6.50; to Breitenback Bros. 13 lambs av 65 at \$9.75, 1 sheep weighing 130 at \$7.50.

Vaughan Bros sold Newton B. Co. 29 clip lambs av 65 at \$8.25.

Eddy sold Nagle P. Co. 13 lambs av 75 at \$9.25, 104 clip lambs av 67 at \$9.25.

Patterson sold same 238 lambs av 83 at \$10.25.

Sharp & W. sold Eschrich 31 sheep av 70 at \$5.

Hogs.

Receipts, 3,635. Market 10c higher than last Thursday.

Range of prices: Light to good butchers, \$10.85; pigs, \$10.25@10.50; light yorkers, \$10.70@10.75; stags, 1/2 off.

Spicer & R. sold Hammond, S. & Co. 111 av 195 at \$10.80, 16 av 190 at \$10.75, 88 av 180 at \$10.70, 63 av 150 at \$10.60, 87 av 180 at \$10.75.

Roe Com. Co. sold Parker, W. & Co. 35 av 190 at \$10.75, 18 av 150 at \$10.65.

Bishop, B. & H. sold same 703 av 180 at \$10.75, 30 av 160 at \$10.60, 192 av 160 at \$10.65, 440 av 175 at \$10.70, 162 av 190 at \$10.80, 91 av 210 at \$10.85.

Roe Com. Co. sold Sullivan P. Co. 177 av 190 at \$10.80.

Spicer & R. sold same 21 av 200 at \$10.80, 161 av 195 at \$10.75.

Haley & M. sold same 58 av 175 at \$10.75, 110 av 160 at \$10.65.

Closed 5c higher than last week.

ADDITIONAL VETERINARY.

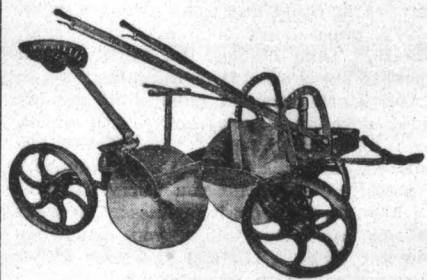
Rickets.—I have a couple of pigs that appear to be weak in the hind legs and are hardly able to walk. The feet turn up and the legs are very much like a hoop. These hogs are very fat and are some troubled with piles. G. E. S., Albion, Mich.—The bones of your hogs are weak and I am not sure but that your best plan is to market the pigs, for pork is high and in order to treat the hogs right you should reduce them in flesh, giving them less corn, more oats and oil meal, also some vegetables adding air-slaked lime to each meal. They have been fed too much corn and not enough vegetables and bone-making food.

Weak Young Pigs.—Can you tell me what ails my young pigs that came weak and all died within 12 hours after birth? I am quite sure the sow went 17 weeks but the young pigs had very little hair on them. The sow had the run of barnyard and a good place to sleep. Her pigs appeared weak and disinclined to suck. Had I better breed her again? G. R., Pontiac, Mich.—Your sow may have met with an accident, causing her to abort, or the young pigs may not have been nourished properly prior to birth, or they may have chilled soon after they were born. I know of no reason why you should not breed her again.

Indigestion.—I have a mare that our local Vet. tells me has indigestion. He floated her back teeth and I gave her a teaspoonful of copperas at a dose in feed once a day, but she failed to pick up. C. E. W., Osego, Mich.—There is not much wrong with your mare; she needs more grain and give her a tablespoonful of the following tonic powder at a dose in feed three times a day: Gentian, ginger, quassia, nux vomica, baking soda and charcoal. Mix these drugs thoroughly then use them. Remember, equal parts by weight.

Strangles.—(Distemper)—Dislocation of Stifle.—I have a four-year-old colt that was taken with a swelling under the throat, and also a two-year-old that had a swelling between the lower jaw bone which broke. I forgot to say that the stifle of my four-year-old slips out of place occasionally. C. W. H., Addison, Mich.—Your colts are suffering from strangles and if they continue eating and breathing fairly free, they will not require much treatment. Poulticing the throat with bran or flaxseed meal hastens the formation of pus and when the abscess softens and the hair plucks off easily, open it and allow the pus to escape, then inject with one part carbolic acid and thirty parts water. For the stifle ailment blister with cerate of cantharides.

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Michigan Farms—Fruit, Grain and Stock Farms in Barry, Eaton and Kent Co's. Big bargains; low taxes, good schools, churches and roads, splendid water and climate. Write for list No. 8. BUCKLES & MATTHEWS, Hastings, Mich.

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278 acres in Mecosta Co., right at station on G. R. & I. R. R. About 220 acres free from stumps, 20 acres timber, good buildings, good soil, raise anything that can be grown in Mich. or, is a good stock farm. Time can be had on or of purchase price. Write for full description. J. A. COLLINS, Howard City, Mich.

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in Osceola county near Tustin, Michigan. These are cut over hardwood lands, without pine stumps. The soil is gravelly or rich clay. Well settled country with schools and good roads. Write for literature. H. W. MARSH, Manistee, Mich.

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HOME AND YOUTH

TOO LATE.

BY MRS. M. B. RANDOLPH.

Harold, the false and the fair,
Leaned on his shield;
Cuckoos sang in the gold-blue air;
Throats and lark were flying afield.
Over his head the clear spring light;
Like stars at his feet the daisies pale;
Coily they smiled at his armor bright
Glancing upward at his mail.

Easter tide: the music of bells,
Chorals and anthems on the air;
Joy they brought on their silver swells,
Joy to all save the false and the fair.
Under his heel a flower he bruised;
Under his helmet a dark frown lay.
As he leaned on his shield and sullen
mused
On his coming bridal day.

Thoughts of his sweetheart vexed his
breast;
"Meek," he muttered, "meek as a nun;
Convent aisles for her are best
And the gospel of St. John.
In Odin are life and light," he said;
"A myth—the risen Lord;
Priests for women and prayers for the
dead,
But men for the sea and the sword.

"A daughter of the sea-kings bold
My merry bride must be;
She—poor lamb of the Christian fold—
Too tame of heart, is she.
Sweet to her, prayer bells a-swing;
Sweet to me, the hammers of Thor;
I've sworn by the gods on Odin's ring,
And I'll scour the seas for war."

Easter tide—a year and a day;
Sweet is springtime's breath;
Fair Ethel takes the altar's way,
The pallid bride of death;
Harold, home from the stormy main,
Leans on his shield to weep:
"The cuckoo's song is a haunting pain,
O fairest of all that I have slain
Awake! My troth I'll keep.
Alas! too late! Too late I learn
Thou homing dove make glad return
A vagrant love may come in vain."

WHEN EASTER CAME TO BLANCHE.

BY FRANK H. SWEET.

Blanche Leonard had at least an idea why her father was so silent and sad, and why he apparently cared no more about her than for the cook or the housemaid. To be sure, he had given her one little kiss on coming home from Europe six months before, where he had lived nearly all her short life, but he had not seemed the least glad to see her.

"Uncle Doctor," as she called her father's brother, the tall, genial man who had been her best friend from babyhood, would have kissed her a dozen times and almost tossed her over his head in excess of joy. Blanche thought she knew what love was, after her long experience of it from Uncle Doctor and her nurse, Ann Maria Johnson.

This morning, when she made her great discovery, she was out by the roadside, laboriously patting together small snowballs in her little mittened hands, when Joe Barker went by with his chum.

Now Blanche was not yet a pretty girl. Just at present she was very thin; her light hair was drawn so tightly back that her eager, gray-blue eyes seemed to be staring from their sockets, and her little straight nose was covered with big brown freckles.

"Turkey's egg! turkey's egg!" they called until they were out of sight. "She's got a nose all speckled, like a speckled turkey's egg." Then Blanche thought she knew just why her father did not like her, and she turned about and went slowly into the house.

Not long after Ann Maria found her standing on a chair before a mirror, scrubbing her nose with a queer little ball of cloth so rigorously that the tears were running down her cheeks. She was suffering, but not for that did she flinch.

"Why, bless the child!" cried Ann Maria. "Whatever is she doin' now?" "I'm getting the freckles off," said Blanche, continuing to scrub.

"What under the canopy are you rubbin' your face with?" Ann Maria uncereemoniously lifted the child from her perch and unclasped the small fingers from the little wad of cloth. "A piece of a cleanin' rag as I'm a livin' woman! And soap and sand! Blanche, how did you ever come by these?"

"Jane was scouring tins in the kitchen," said Blanche, holding her hand over her nose, "and I thought if they took black off, they'd take off freckles. So I asked her to give me some, and she did."

Blanche was never afraid of Ann Maria. It was perfectly easy to explain to anybody who might be expected to take you up and cuddle you at any minute; and this Ann Maria proceeded at once to do, after she had possessed herself of a box of cold cream with which to annoint the much-abused nose.

"The skin's every mite off," she soliloquized, with deep pity and some impatience. "Blanche, what made you do it?" "I told you I wanted to get the freckles off," replied Blanche. "Do you think I've done it any?"

"Of course you haven't, you little innocent. Freckles are like the color of your eyes; they go right through. But I didn't know you was so vain, Blanche. What did possess you?"

Then Blanche thought it would be well to confide all her troubles, and see if Ann Maria could find a solution for them. "My papa don't like me," she said, soberly. "And I guess I'm homely. And freckles are worse than anything."

Ann Maria stopped annointing the injured nose and gave the child a quick, keen glance. "Well, I never!" she exclaimed, under her breath. "Blanche," she said aloud, "don't you worry. It isn't freckles, and it isn't homeliness. It's what nobody can help, unless you can when you get to be a big girl and your father sees you're worth something."

Blanche had turned in the nurse's lap and was looking her in the face with serious gray eyes. "Why don't he like me?" she asked. "Uncle Doctor does."

It seemed to Ann Maria that the time had come for telling this little bewildered soul the truth, and, whether wisely or not, she made up her mind to do it.

"When you was a little mite of a baby," she began, rocking to and fro and speaking softly, "your mother died. It most broke your father's heart, and he went away to Europe and stayed there till we all thought he never was coming home. But at last he came—I guess your Uncle Doctor wrote him he'd ought to—and then it seemed as if he'd never forgot what he'd lost, and as if he never meant to like anybody else."

Blanche was very quiet; she had almost stopped breathing to listen. "What kind of a lady was my mother?" she asked, in a soft little whisper.

"She wasn't like anybody else that I ever saw. I guess you'll look like her when you grow up. She was always laughing, and she could sing like a bird."

"Did he like to hear her sing?" "Like it? I guess he did. But she couldn't do anything he didn't like. He was all wrapped up in her. Now go to sleep, and don't think any more about such things."

That night Ann Maria stopped Uncle Doctor in the passage, as he came in from a cold drive in the country, and told him all about the new process for removing freckles. The doctor listened quietly, but when he had reached his room and was dressing for dinner he vented his somewhat violent emotions on his boots and hair-brush in a way that would have astonished his patients. "It's a shame!" he ejaculated, parting his hair savagely and scowling at himself in the glass. "A burning shame! That little starved thing! I wish she was my daughter!" Then he tied his cravat in a belligerent sort of knot and went down to dinner, meaning to keep up his ill-temper if he possibly could.

When he entered, the colonel was standing by the fire. He was a handsome man, with the bearing of a soldier. The two were much alike, but Harold Leonard was commanding where the doctor seemed gentle; and Harold was reserved to people in general, while his brother had a wealth of affection ready to bestow wherever it was needed.

"Rather cold tonight," said the colonel, as they went to the table. The doctor tried to say "Yes" very curtly. He was still determined to be absolutely severe and just, but somehow his resolution ebbed away with his soup.

When they had finished dinner and were alone, enjoying their coffee, he lashed himself to the point of speaking.

"Look here, Hal," he said, bluntly. "You ought not to treat Blanche in this way, you know."

The father gave him a quick look. "In what way?" he asked.

"You simply ignore her. You scarcely give her a word from morning till night."

"Well?"

"You are merely civil to her. If she comes into the room, you treat her with the cool civility you would show a guest, instead of acting as if she were a warm-hearted little girl, and your daughter."

The colonel did not look up, and the hand shook with which he held his spoon. "You know why, Will," he said at length, in a low voice. "You know so well that it seems to me rather cruel in you to probe me so. Six years ago I lost—her. It may be cowardly, but I don't dare to care much for anything again. Suppose I greatly loved this child, and then lost her? I mean to spare myself that pain."

The doctor went around the table and put his hand on his brother's shoulder. "Hal," he said, his voice broken, "you know I can't talk, but you will find her again."

"So they tell me, the good books and the good people," answered the colonel, in a dull voice, still without raising his eyes. "But I can't feel it. Everything is dark."

"But the resurrection, Hal."

"Yes, I know; but I tell you I can't feel it. No miracle has ever happened to me. Perhaps I could believe if there had."

The doctor went back to his place. Presently he began again, somewhat timidly: "But the child, Hal. It is terrible to see her follow you about hoping for a word or a look. She's absolutely in love with you."

The father sighed heavily. "Why do you try to waken me when I have got myself comfortably deadened to life? I mean to superintend Blanche's education, and see that she has every possible advantage; but if you expect me to tie my heartstrings to her—I can't, I won't."

Blanche, silent in her little bed upstairs, had her own thoughts about these things and, undisturbed by the fact of her skinless nose, she was making new plans. She had drawn her own conclusions from Ann Maria's story. Her mother sang like a bird, and her father had liked it.

Blanche had a clear little voice and she wondered if he could possibly be pleased if she practiced very hard and learned some particularly sweet songs. An Easter hymn! For that would be most beautiful of all, and Easter was near.

Then she began in her trembling little soprano, "Christ the Lord is risen today."

Ann Maria came bustling in, exclaiming: "Bless the child! What's she up to now? Singing in her sleep?"

But Blanche looked up at her with clear eyes and asked: "Is Easter next Sunday, Ann Maria?"

"Yes, it's next Sunday, and your birthday comes the same day this year. Now you lie still and think about it, and by and by you'll drop right off."

Next morning the child began her practicing very early. She went into the dining-room, where no one was likely to be at that hour, and conscientiously sang the scale until her eager face was flushed and her voice grew tired. Then she began to sing her beautiful Easter hymn, very slowly and carefully. The library door opened just as Ann Maria was going through the hall. "Ann Maria," came the colonel's voice, more harsh than Blanche had ever heard it, "will you stop that child's singing or take her where I can't hear it."

When Ann Maria entered the dining-room Blanche was not there. She had fled through another door, up the stairs past her own little room, and into the attic. There, beside a trunk which held some headless dolls and worn-out treasures that were still beloved, she sat silent, her little fingers clasped upon her aching throat.

Blanche practiced no more, but she went about the house very soberly, so that Uncle Doctor was puzzled and told her he should have to play with Belinda, her last doll, instead of her, and that if she did not brace up he should really be compelled to sell her to the Shakers. She smiled a pitiful little smile, and said only: "I guess I've got a cold—or as'my," for the cook had asthma, and was made very doleful thereby.

It was the day before Easter, and the doctor and his brother happened to leave the house together.

Just as they were closing the hall door, Blanche appeared behind them, mittened and furred, and carrying a little pail.

"Whither away, Red Riding-hood?" called the doctor, gaily. "To see your grandmother and the wolf?"

"Ann Maria sent me down to Mrs. Hopkins to take this broth," said Blanche, trudging out over the steps. "It's hot, and I'm to be careful not to spill it."

"Give it to me," said the doctor, "and you take my hand. There! I'll carry it while our ways lie together."

The three set out, somewhat slowly, that Blanche's short steps might make the pace. The colonel did not talk, but the doctor made up for it. He teased Blanche, he made fun of her; before she knew it he had wakened her to a mood of childish glee, and she forgot that her father walked silent on the other side. When they came to Bentley's pond the colonel also waked up.

"See, Will!" he exclaimed, "there they are at it, just as we were thirty years ago. Oh, the reckless scamps!"

The ice had broken up, after a sudden thaw, and the pond was full of great cakes. On these, slipping about and guid-

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ing their melting rafts, were Joe Barker and his ever-devoted chum. Sometimes they were on the same piece; sometimes the sprang from cake to cake, and sometimes each would try to make his craft bump the other. Often a piece of ice would tip treacherously and threaten to be submerged, and the boys delicately balanced themselves on the opposite edge, or leaped daringly to another piece.

"It's really dangerous," said the doctor, while they were watching these antics with breathless interest.

"Dangerous! of course it is. So it is to find the north pole, or the source of the Nile, but it's real adventure, nevertheless. Those boys have given me more pleasure than I've had in years. I feel as if I were one of them. If we stay here much longer I shall be navigating the open seas myself."

The colonel's eyes were bright, his face smiling. Blanche stole a glance at him, and for a moment it seemed to her that she hated Joe Barker, who could make him laugh and break up that deep wrinkle between his brows.

"Here, Pussy, take your pail," said Uncle Doctor; "you turn down this cross-road, don't you? It's only a step from here, you know, and be sure you say your name's Red Riding-hood."

Blanche made haste to do her errand, and she was so absorbed in thought that when deaf Mrs. Hopkins asked, "Whose little gal are you?" she only said, "Pretty well, thank you, ma'am."

When the pail had been scrupulously washed and returned to her, and she had taken a slip of a Lady Washington geranium, she hurried away on her homeward road.

But she did not pass the pond. She sat down by the shore on a fallen log, and waited, her mittened hands folded tightly before her and her delicate lips set. Joe Barker and his chum had gone home and the pond looked very lonesome with its lines of black water between the drifting cakes of ice.

The west flamed with a glowing sunset, and still no one came. She began to grow a little nervous with the cold and inaction, and wondered whether she had been wise in her plan. But just as resolution was failing her, the colonel and Uncle Doctor appeared around the bend of the road, walking fast and swinging their arms with vigor.

Then Blanche threw all her doubts to the winds and rose from her seat. She set her tin pail carefully down beside the log, and took a timid, desperate step on the crackling ice near the shore.

She leaped from one cake to another in feeble imitation of Joe and his chum, and when the two men reached her starting point she was far out toward the center of the pond.

"Who's that?" said the doctor, easily, as he was swinging past. "Heaven help us, it's Blanche!"

But the colonel had stayed not even for a word. In the moment of noting the little figure, he was running from one ice-cake to another, in swift pursuit.

"Blanche," he called, "stand still just where you are."

It was more difficult than Blanche imagined, and she was now balancing uncertainly on a shifting cake. She turned, at her father's call, and he could see that her face was strained and anxious.

"Stand still!" he cried again. But one uncertain movement inclined the cake too far, and Blanche had gone under.

No one could ever tell exactly what happened after that. The doctor, who had wrenched a pole from the frozen ground and taken his way across the surging ice-drift, protested that he never knew, and the colonel, who saw a little red hood come up between two ice-cakes only to go under again, was sure he could not tell. But certain it is that he was presently in the water, angrily and ineffectually trying to push aside the horrible drift-ice, as if it were some huge monster bent on devouring his treasure.

There was again a gleam of red, and he clutched the child in a desperate grasp, clambered, he knew not how, upon an uncertain foothold, stumbled back to land, and ran with his dripping burden, his brother following.

"Give her to me," cried the doctor at the door. "Don't stand there, Ann Maria! Hot water, blankets, brandy! Run!"

Ann Maria ran, but to what purpose? The little dripping figure was rubbed dry and warm, but it still lay motionless. The doctor worked desperately. He breathed into the mouth, he compressed the inert lungs. All to no purpose for half an hour. The spirit to all appearances had fled.

"Let her rest in peace," cried the col-

onel, hoarsely. He was kneeling by the bed, in his wet garments, but nobody noticed him. "She is dead. I won't have her disturbed," he said.

The doctor made no answer. His hand was on the child's heart, and his mouth close to hers.

"More blankets, Ann Maria," he said with a sob in his voice. "She is alive."

Blanche came back, and when she opened her pained, wondering eyes, they first fell upon her father. The tears were running unheeded down his cheeks. "My little girl," he said, over and over, "my own little girl."

"I didn't think I should fall in," she whispered, weakly. "I only meant to make you laugh. You know you laughed at Joe Barker."

Then, perhaps everybody would have cried together but that Ann Maria, the practical, came to the rescue.

"Here, colonel, you had better go and change your wet clothes," she said, peremptorily. "You'll catch cold yourself and give her a cold, too. She'll go to sleep if we let her alone."

Outside the chamber, Colonel Leonard laid a detaining hand upon his brother's shoulder. "Will," he said, his face working, "it was a miracle. She was dead, and her spirit came back. That other spirit, Will, somewhere, I can believe, is awake. I will believe, God help me."

That night, when Blanche slept, her father sat beside her, sometimes dozing, but oftener looking at her face with a hungry gaze and murmuring his joy. When she opened her eyes they brightened wondrously as they met and realized the unrestrained tenderness of his.

"Is it Easter?" asked Blanche. "Am I sick?"

"It is Easter, and you're not sick—only tired. You shall go to church with me, and see the lilies and hear the music, and it shall be the happiest Easter in all your life."

"But I've got some music for you, papa," said Blanche, her eyes growing big with impatience and joy. "Just you hear!" And lying back in his arms, with her head nestled where it was dearly welcome, she sang, in her clear, thin voice, "Christ the Lord is risen today."

ANIMALS AT PLAY.

BY WM. F. PURDUE.

Persons living in the country are familiar with the play-loving tendencies of domestic animals, especially the young. The calves and colts, lambs and pigs, will run and frolic, playing hide-and-seek and other sports with the greatest pleasure, sometimes almost like a group of children at their pastimes. So we need not be surprised to learn that animals other than our domestic friends also practice and enjoy playful frolics.

The otter enjoys a sliding play, similar to tobogganing, using a snow bank for his toboggan in winter and a mud bank in summer. When the latter is used, the sport is about as follows: First, choosing a steep, sloping river bank where the soil is of clay and the water at the bottom fairly deep, they set to work and carefully remove all the sticks and loose stones that may be in their way. Then the fun begins. Climbing the bank where it is not too steep, the first otter goes to the head of the slide, lies down flat on his stomach, gives a kick with his hind legs and down he goes, head foremost, into the water. Then, as rapidly as possible, the others follow the leader. The bank becomes smooth, even slippery, in a very short time, and the faster they can travel the more they seem to enjoy it. They keep it up until quite tired out, but they come back the next day.

A German naturalist records a similar game played by chamois in the Alps. They select a steep, snow-covered slope. The leader throws himself into a sort of crouching position and, working his legs as though he were swimming, slides down a distance of 100 yards or more. The others look on and finally follow, one by one. As each arrives at the bottom he springs to his feet and climbs up again. These animals might take these long slides because it presented the easiest means of reaching a certain point, but they have been seen to do it over and over on the same slide, which surely proves that they are only enjoying a play.

Monkeys and lemurs seem to be other playful animals. Humboldt records having seen a tame capuchin monkey riding a pig. The monkey would lie in wait until he could catch a pig, spring upon its back and ride off, evincing symptoms of keen enjoyment and clinging so tightly that the poor pig, do what he might, could not free himself of his passenger.

A naturalist describes the play of rab-

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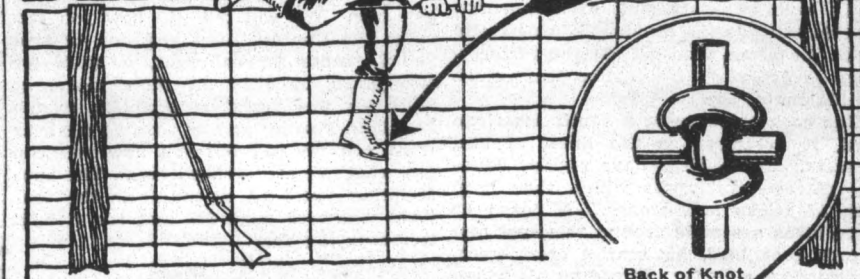
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bits as follows: Two of them run quickly toward each other and, when on the point of contact, each leaps into the air, but one higher than the other. They come down with their tails toward each other, but instantly both turn and run and leap again. This they will do a number of times, always leaping up at the exact moment when they would otherwise come into collision, and one always taking the higher leap. Another form of this game is started by one rabbit running up, to another that is lying crouched and jumping over him. He then crouches himself, and, after a time, the other, willing to return a politeness, runs up to and jumps over him.

Dancing is the principal play of many birds. The most remarkable dancer is the spur-winged plover of South America, which goes through a square dance, as the natives describe it. The birds live in pairs, and three birds are required to perform the dance. First, the male bird of one pair will leave his nest and fly to that of another pair, where he is received with every expression of delight. Then the three form a procession, with the visitor in front, and march away, keeping step to a curious tune. The leader gives forth loud single notes at intervals, while the pair behind make a continuous sound like the roll of a drum, perfect time being kept. When the march ceases the leader raises his wings while the other two, standing abreast, stoop forward and downward until the tips of their beaks touch the ground in a profound bow and their voices slowly sink to a murmur. In this attitude the birds remain perfectly quiet for some time. Then the performance is over and the visitor will return to his mate.

The cock o' the rock, a South American bird, is described as the finest of bird dancers. These birds have regular dancing places—level spots which they keep free of sticks and stones. A dozen or more birds assemble around this spot and then a cock bird, his scarlet crest erect, steps into the center. Spreading his wings and tail, he begins the dance, at first with slow and stately steps; then gradually more and more rapidly until he is spinning like a mad thing. At last, tired out, he sinks down, hops out of the ring and another takes his place.

The albatross is a good dancer. After facing each other the birds begin by bowing, then they rub their bills together, meanwhile emitting a whistling sound. Next follows a vigorous shaking of the head and a wild snapping of the bill. All manner of curious antics are then gone through; the wings are lifted one by one and tossed into the air with a groaning scream. Finally the birds walk around each other for a quarter of an hour or even longer.

Cranes are stately dancers. Two birds will begin the dance by uttering a quick succession of loud, rolling cries. Then one bird will wheel about, make a low bow and take a sudden leap into the air. Then there will be another pirouette and a still graver obeisance. The other bird will go through a similar performance, each trying to outdo the other in a series of spasmodic jumps and ludicrously solemn bows.

Some of the quail tribe are great dancers, and the robin is a fairly good performer, not to mention many others which go through peculiar motions, some pretty

and stately and others ludicrous and eccentric, all apparently for exercise or relaxation.

EGGS IN ANCIENT TIMES.

BY FRANCIS GALBREATH INGERSOLL.

Fifteen hundred years before the christian era, eggs were objects of honor among the Pagans. In their worship of the god Bacchus, a consecrated egg was the emblem used in one of their mysterious rites.

An egg was an emblem of the order of Druids, and used in their ceremonies. The egg has a prominent place in Hindoo myths, and is represented as of a golden color. Among the Japanese it is of solid brass.

For centuries, and even at the present date, eggs, dyed and ornamented, are used by the Chinese as religious symbols at certain of their sacred festivals. The Egyptians used consecrated eggs in their most ancient rites.

In Germany, it was once the custom to present a picture, or print, showing three hens holding a basket containing three eggs. Over the center egg was a lamb with a chalice representing Faith, the other two eggs bearing emblems representing Charity and Hope.

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A SUPPOSITION.

BY GEORGE FREDERICK WILSON.

When Mrs. Cyrus Reitter first met her husband he was fresh from the farm and struggling for a foothold in the city. After he had amassed a fortune she made him build a high board fence around the little back garden in which he was so fond of putting in the early morning hours. This was because she had social ambitions and pretended to abhor all that pertained to toil, the soil and the plebeian.

Cyrus turned the first spadeful of earth in his little garden at five o'clock of an April morning, and the same hour found him there in overalls throughout the spring, summer and autumn months. He planted the seed and he forbade the cook and his aides to pull any of the products thereof, jealously reserving to himself the task of gathering the fruits of his labor. It was a source of annoyance to Mrs. Reitter to see her husband go stamping into the kitchen with a handful of vegetables and enthuse over their good qualities with the cook or one of his aides. Also, it visibly annoyed Mrs. Reitter when she would come upon her husband busily paring some of his beloved vegetables or shelling peas. She remonstrated with him again and again but to no effect.

Aside from the garden, Cyrus' chief interest in life was the G. O. T. railroad,



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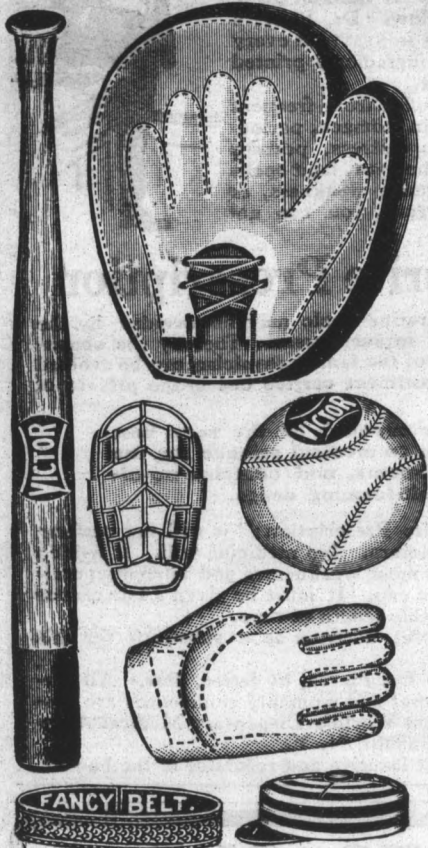
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which he had nourished from a small offshoot of a big branch into a system bigger than its former parent. Therefore, when greedy eyes were turned in the direction of the railroad he loved so well, and greedy hands reached out to take it from him, Cyrus put up a long and bitter fight and won. He succeeded in bringing to his standard a half dozen faithful allies and the seven, controlling a great majority of the stock, put the enemy to flight. The enemy retreated at a safe distance and held their ground in the endeavor to win a few of the seven over to their side. But Cyrus, realizing his loss if they should succeed, did everything that man could do to hold the six with him—and succeeded.

Returning home early one afternoon after a hard struggle to keep his panic-stricken allies with him in the fight, the system having made a move which the G. O. T. feared would swamp them if they fought longer, Cyrus turned to his garden for relaxation. He was pleased to discover enough young peas on the vines to promise a fair "mess." Going into the kitchen he got a pan and returned to the garden.

The pan was well filled when he had plucked all the promising pods. He returned to the house, removed coat and hat, drew a chair out on the kitchen porch and settled down to a few minutes of real plebeian enjoyment in shelling the peas.

He did not hear the footsteps coming around the house and looked up only as he caught a startled exclamation from his wife. He gazed into her suddenly flushed face and her snapping angry eyes. Then he realized that the two ladies with her were the wives of two of his associates. He smiled embarrassedly and bowed. Mrs. Reitter hurried them on to the flower gardens at the rear, which had been their object in coming around the house. As Mrs. Reitter had always been at great pains to inform these two ladies, who came of distinguished families, how she loathed all the simpler duties of life, the situation was for her an exceedingly embarrassing one.

Returning to the house, the ladies shortly bid Mrs. Reitter a good afternoon and departed in the one motor car which had brought both.

"Wasn't it the funniest thing ever?" one exclaimed, sinking comfortably back into the luxurious cushions with a peculiar laugh.

"Very. And unusual, too, considering how careful she has always been to insist upon her hatred for the common things. Did you notice how red her face became and how angry and startled her eyes were?"

"It was very noticeable. Mr. Reitter also seemed somewhat taken back, though he rose to the occasion with a laugh and a bow."

"I wonder if anything can be wrong with them?" the other cried, some of the color receding from her face.

"Why, what do you mean?" her companion inquired, startled.

"Listen. You remember her remark about the maids? Of how she had let three go out for the afternoon? Could it have been a subterfuge to cover the absence of so many servants from the house? It is unusual, you know, and the place seemed so empty with a lack of servants."

"Yes, yes, go on."

"Then we come upon Mr. Reitter doing a kitchen girl's work. I do believe something is wrong. You know what a bitter fight he is making and how much depends upon his few friends staying by him. Can he have been losing all along, and using the wealth of your husband and mine, and his four other partners, to return him his losses and power? John has been so anxious all along over this fight. He's so afraid the system will 'eat them up,' as he puts it. Only Mr. Reitter's continual pleas and promises have kept him in the fight. Can it be true, I wonder?"

"We must tell our husbands this very afternoon."

"Indeed, we must."

Cyrus went late to the office on the following morning and found awaiting him his six associates. Something in their manner of greeting and the hard set of their features warned him that something had gone wrong. He anticipated another struggle in clearing away fears which some rumor, unknown to him, had nevertheless reached their ears and sent them scurrying to him.

He greeted them pleasantly, called the chief clerk and instructed against interruption, then snapped the spring lock of the door.

"Well, boys, your manner is hardly cor-

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dial this morning. What's wrong now? Heard some more disagreeable news from the enemy's camp?"

"Not at all," one of the group replied. "We've heard disagreeable news from our own camp."

Cyrus started, then hastily composed himself, mentally condemning himself in having shown even a slight lack of self-control.

"Well, well, not so bad as that, I hope."

"Oh, come, come, Cyrus," the same gentleman, evidently the chosen spokesman, snapped irritably. "We know the truth. Drop this small talk and tell us why you did it."

"Did what, gentlemen?" Cyrus questioned, his eyes glittering dangerously.

"Used us as a catspaw to retrieve your losses," the spokesman shouted.

"Gentlemen, this insult is as unwarranted as it is unexpected," Cyrus replied, ominously calm. "Furthermore, I don't understand a word of it."

"I will explain, Cyrus," the spokesman, too, was now calm. "You have been retrenching in your household affairs. Mrs. Reitter remarked yesterday afternoon that three of your servants were off for the afternoon. We have nothing to do with affairs of the house and to us an announcement of this sort conveys nothing unusual. But our wives tell us that a wholesale half-holiday of this sort is a very unusual one with any housekeeper. It is our belief, without intent of insult to Mrs. Reitter—our wives would do the same under the circumstances—it is our belief that these three servants were discharged, and not merely dismissed for an afternoon. You were discovered seated on a back porch doing the work of a scullery-maid, and the embarrassment of both yourself and Mrs. Reitter was very noticeable, very noticeable indeed."

"And indeed it was, gentlemen," Cyrus retorted, his eyes a glassy green. "And indeed it was. My wife has always lectured me against indulging my plebeian tastes, where discovery is possible. I came from a farm and I haven't outgrown some of the simpler pleasures of those old days. As for the servants, I know nothing whatever about the half-holiday of these three, as this is out of my jurisdiction. However, as we have so many it does not seem so strange that three of them should have an afternoon upon the same day. There may have been an especial reason for it—a wedding or an afternoon party or something. I trust I have explained the situation?"

"Yes, to your own satisfaction."

"Gentlemen, this is adding injury to insult," Cyrus blazed. "I don't know your purpose in coming here to insult me this morning, but if you have done I will ask you to excuse me from further discussion. I don't censure you. We are having a hard fight and nerves can not be trusted, but now that I have cleared your doubts as to my solvency I must ask that you leave me to the immense amount of work I have before me. If anything of an alarming nature turns up from the opposition, be assured I shall instantly notify you. And now may I say good-morning, boys?"

"Indeed, you may. As for notifying us, as you say, it will not be necessary. We'll be the first to hear of it. Believing, as we still do, that you were using us merely as a catspaw to further your own interests to our final harm, we went over to the opposition this morning."

"You—you," gasped Cyrus, white to the very lips. "Tell me, tell me—you haven't deserted me like this?"

"Deserted, no. We've merely taken the precaution to protect ourselves. The G. O. T. is no longer in your control. Good morning."

And, like a boy who has had his hard-won marbles stolen from him by a bigger boy, Cyrus rested his head upon his arm—and cried.

A TALE OF A PIG.

BY ISAAC NOTES.

The story that Rome was saved by the cackling of geese may or may not be true, but it is well authenticated history that the state of Texas was saved from becoming a vassal of France by a pig.

The year 1842 was a gloomy one for Texas, then a young republic scarce six years old. It had declared its independence of Mexico, and Santa Anna, the "Napoleon of the West," had been forced to acknowledge it by treaty after the battle of San Jacinto, but this treaty was never recognized by the Mexican Congress and President, which still tried to hold Texas as one of the Mexican states. In order to do this invading armies were

sent at intervals to harass the young republic and to capture its chief cities, appearing suddenly before them at a time when the citizens least expected an enemy, thus forcing them to keep a volunteer army in the field, with no means to pay that army, as the treasury was empty. Smarting from the effects of these frequent visits of the Mexican army, a general invasion of Mexico was talked of, and a small but resolute volunteer band of Texans was at this very time in Mexico, only to be defeated later, many of them cut to pieces and the others captured and marched in chains to the City of Mexico. There was no money to pay the running expenses of the government, much less to place an army in the field large enough to defeat the Mexicans. The people themselves were poor, and depended solely upon the products of their farms for sustenance, and the Mexican invasions often made it necessary for the farmers to rush to arms, leaving the cultivation or gathering of their crops to the women and children.

Texas at this time was trying to gain admission into the American Union; also to negotiate a loan with some foreign nation. Most of the nations of Europe had acknowledged the independence of Texas, but none were anxious to loan money to the struggling young republic, which was poor in everything save countless acres. Finally, however, France was seriously considering the matter of making Texas a loan, taking as security a lien upon the public domain, an extent of country one-fifth larger than the whole area of France, which treaty would have made Texas virtually a dependent of that country. Envoys had been sent across the Atlantic to close the treaty and secure the much needed funds, and everything was progressing satisfactorily until an apparently insignificant incident occurred at Austin, the capital of Texas, which put an end to all negotiations relative to the loan, and resulted in the return home of the French minister.

Monsieur M. de Saligny, the French charge d'affaires, who had been fostering the negotiations for the loan, kept a pair of fine horses, which the hostler fed on Indian corn. Living not far from Saligny was a man named Bullock, a hot-headed hotel keeper. This man Bullock was the owner of some half-grown hogs which went pretty much wherever they pleased, there being no fences to put a limit to their encroachments. These hogs became regular visitors at Saligny's stables, ostensibly to pick up grains of corn which fell from the feed boxes, but, hog-like, they were not content with this small portion, so they scrambled into the feed boxes and proceeded to help themselves. So exasperating did this become to the hostler that he finally ran one of the pigs thru with a pitchfork and tossed its dead body over the fence. This infuriated the owner of the pig, and he proceeded to thrash the hostler, upon which Saligny swore out a warrant for Bullock and had him arrested and fined. This so incensed Bullock that a short time later, when Saligny called to see the United States minister, who lived at Bullock's hotel, the landlord, ignoring the Frenchman's high official position, ordered him off the premises. The envoy applied to the government to redress his wrongs, and, failing to obtain satisfaction, demanded his passports and returned to France, where his unfavorable report put an end to pending negotiations concerning the loan.

Thus the amicable relations existing between two sister republics were disturbed, and an international treaty frustrated by so insignificant a creature as a pig. But what M. de Saligny doubtless intended should be an injury proved a fortunate deliverance for Texas. They were poor, but still freemen, and about two years later the young republic became one of the states of the American union.

UNFORESEEN.

BY EUGENE C. DOLSON.

Some of my life-deeds I have valued naught,
Whose worth the years attest in many ways;
A few which once it pleased me to have wrought,
I have regretted most in after days.

THE SONG SPARROW.

BY MAY ELIZABETH WHITE.

There's a sweet voiced little Quaker,
Mid the wayside brush,
Lifting praises to his Maker,
In the morning hush.

Attitude of adoration,
Singing out his days;
Would to God that all our nation
Gave as grateful praise!

Words of Praise

For the several ingredients of which Dr. Pierce's medicines are composed, as given by leaders in all the several schools of medicine, should have far more weight than any amount of non-professional testimonials. A Booklet made up of these sent free. Address as below. Dr. Pierce's Favorite Prescription has THE BADGE OF HONESTY on every bottle-wrapper, in a full list of all its ingredients printed in plain English and sworn to as correct.

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POTTS DISEASE when treated in time at this institution, will result in no deformity; paralysis will always be prevented; the health and strength of the patient is at once improved; the growth not interfered with. Plaster paris is never used.

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It tells of an experience of over 30 years in the treatment of Deformities and Paralysis and how these conditions can be corrected without surgical operations, plaster paris applications or painful treatment of any kind. Ask for it.

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FARMERS' CLUBS

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

BOYS' AND GIRLS' AGRICULTURAL CLUBS.

A recent press bulletin from the Division of Publication of the United States Department of Agriculture, says: "Within recent years a new method of agricultural education has been devised in the form of boys' and girls' clubs. Such clubs have various objects, but usually they provide for prize contests among the members. Corn growing contests are probably the most common among the boys, although many other crops have been tried, while the girls compete in bread making or sewing, or even test their skill against that of the boys in gardening.

"The U. S. Department of Agriculture has information of 295 counties in 23 states in which such clubs are organized, with a total membership of about 144,000. New York has about 75,000 members; Nebraska, 25,000, and other states smaller numbers. One county in Pennsylvania has 2,000 members. In most cases these clubs are organized under the auspices of some state authority, such as the commissioner of agriculture, the superintendent of public instruction, the agricultural college, or a society, like the State Corn Growers' Association, of Delaware. But in many cases the county superintendent takes the initiative, while in many other cases the rural teachers arrange contests among their own pupils.

"The U. S. Department of Agriculture also gives assistance through the office of Experiment stations, by furnishing advice and suggestions. Through the Department's Farmers' Bulletins the most practical instruction in the growing of corn and other crops may be had by the boys, while the girls may obtain bulletins on bread making or gardening.

"A new Farmers' Bulletin on Boys' and Girls' Agricultural Clubs tells how to organize the clubs, how to conduct the contests, and what publications will be useful to the boys and girls. This bulletin may be obtained free upon application to a member of congress, or to the Secretary of Agriculture, Washington, D. C."

There could be no better foundation upon which to build a boys' and girls' club of this kind, than the local farmers' club in any community. In at least one local club of the state something has been attempted in the way of a junior club which has taken up experimental work of this kind and thus been the means of interesting the boys and girls not only in the farmers' club as an organization, but in agriculture as a business. It would undoubtedly be a step in the right direction if every farmers' club in the state would organize such an auxiliary organization for the boys and girls of the neighborhood, and these publications of the Department of Agriculture would be a valuable aid in the conduct of the work of such an auxiliary organization. A request addressed to either the congressman of the district in which the club is located, or the Secretary of Agriculture, at Washington, will bring this literature. Every club which desires to do anything along this line should take initiatory steps for the organization of junior clubs and send at once for the literature mentioned.

TUSCOLA COUNTY ASSOCIATION.

The second annual meeting of the Tuscola County Association of Farmers' Clubs was held in Hotel Montague, Caro, March 3, 1910. The Association comprises the Hickory, Indianfields and Ellington-Almer Clubs with a membership of about 200 in all.

The meeting was called to order by Pres. Chas. Smith at 11 o'clock a. m. After a few words of welcome the program was formally opened with a musical selection. A paper, "The fat of the land," gave Miss Martha Purdy an opportunity to show how well posted she was in the beauties of farm life and advantages to be gained by a proper caring of nature's bounties. Recitation, "Plum Creek Function," by Margaret R. Wright. Vocal solo, Miss Mattie Cool. "Parcels Post and Postal Savings Bank," by C. L. Wright. Discussion led by ex-Postmaster Fred Slocum. Hickory Club Quartette, in full dress and color, was so pleasing that a second selection was called for. Willie Park, so bewitching in his first recitation, was called upon to appear again. A vocal duet by Mr. and Mrs. John Montel closed the first half of the program. When dinner was announced. Ushered to their places in the banquet hall of the hotel to the strains of most delightful music, 125 members of the clubs partook of the splendid dinner provided by Messrs. Montague and son. It was a pleasant feature of the meeting to have the banquet served

by the hotel, thereby relieving the ladies of the entire care.

At the conclusion of the dinner the program was again continued, preceded by a short business session when officers for the coming year were elected. Chas. W. Smith, president; W. F. Dowling, vice-president, and Mrs. C. L. Wright, secretary and treasurer; while W. F. Dowling, C. L. Wright and Robert Park were appointed a committee to draft constitution and by-laws to govern the Association. It was voted to hold a union picnic in August. Instead of the several club picnics. The question box was then disposed of and Nelson Hatch spoke on the "Cause and remedy for the present high prices." His points were able discussed by E. L. Ransford. "My Old Kentucky Babe," by the Indianfields quartette in costume, interspersed with the antics of "Wet Nurse Smith," who could not go "Hamburg Steak," was vociferously encouraged. After a whistling duet by Margaret and Hubert Wright, the program was concluded by a union chorus of all the clubs.

Resolutions endorsing parcels post and a system of postal savings banks were adopted and a copy ordered mailed to both the United States senators and the congressman from the 8th district.—Mrs. C. L. Wright, Secy.

CLUB DISCUSSIONS.

Hold Local Option Meeting.—The Washington Center Club held its March meeting on the 10th, with Mr. and Mrs. George Hill at "Elmcroft," with over 60 in attendance. This was local option meeting and after the usual routine of business the following topics were taken up and well discussed: "Has local option been a benefit to Gratiot county?" "What has been the effect of local option on business, morals and the general welfare of our county?" "Have we, as good citizens, done our whole duty in helping to enforce the local option laws?" These were very interesting topics, and were well discussed. "Local option and politics" was also touched upon. This club believes local option has been of great value to Gratiot county, that business and morals have greatly improved in the last two years. Its effect is beneficial also in politics; none but temperance men need apply for office. A humorous reading by Mrs. Brattin, solo by Mrs. Wm. Long, with a duet by the little Misses Grinbaugh, were much enjoyed. Our famous quartette fairly excelled themselves at this meeting, and Master Fred and Miss Hazel Hill gave charming recitations. "Late and early sheep shearing" was then discussed, with the majority in favor of early shearing. Many questions from the question box were answered, and the club adjourned to meet April 14, with Mr. and Mrs. John Zigler.—Mrs. A. J. Campbell, Cor. Sec.

GRANGE

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

THE APRIL PROGRAMS.

State Lecturer's Suggestions for First Meeting.

"I guess the pussy-willows now
Are creeping out on every bough
Along the brook; and robins look
For early worms behind the plow."
—VanDyke.

Select reading, "A Little Child Shall Lead Them."
Farm arithmetic problems.
In the Home—I. Common molds.
Humorous recitation.
Why is it worth while: 1. To test seed-corn? 2. To treat potatoes for scab? 3. To spray for fruit?
Instrumental music.
Roll call, responded to by each member giving suggestion on vegetable or flower garden making.
Music and recitation in charge of the chaplain.

MICHIGAN FLORA.

(Paper presented at a meeting of Ingham Co. Pomona Grange by Mrs. Blanche Whitlock).

The study of the flora of Michigan is probably by no means finished—not much more than fairly begun. In his book, published in 1904, Dr. Beal, of M. A. C., said: "By far the greater areas have not yet been seen by any systematic botanist, and very few regions have been visited by one who is an expert in some one or more of the more difficult families." It will never be exactly known what species grew in large areas, since tens of thousands of acres of the virgin wilderness have been burned over and plowed under.

But it is probably a true statement that no territory of corresponding size on this continent has possessed so great an amount of valuable timber as has Michigan. Not less than 20,000,000 acres, or one-half the area of the state was originally covered with pine. Michigan, with much less territory than Great Britain, has nine times the variety of trees common to the soil, Great Britain having only 10 species while Michigan has about 90, as follows: Six maples, basswood, white-wood, honey locust, Kentucky coffee tree, three cherries, pepperidge, five ashes, safras, three elms, hackberry, mulberry, buttonwood, black walnut, butternut, eight hickories, 13 oaks, chestnut, beech, four tree birches, larch, arbor vitae, red cedar, three willows of tree size, five

poplars, three pines, three spruce, hemlock and balsam fir.

The whole plant life of Michigan contains 1,634 varieties, including 165 trees and shrubs, and at least 40 of these trees and shrubs can be cultivated for ornament. It is true that where we would find 60 species in Michigan on corresponding territory we would find over 6,000 in the tropics of South America, yet the beauty of the tropical forest can seldom compare with the magnificence of a Michigan white pine forest. It is a mixture of evergreens, deciduous trees and shrubs, mingled with autumnal tints with here and there a stream, hill, valley, or beautiful lake, making a charming whole that can hardly be surpassed.

The great lakes exert a strong influence on the flora of Michigan by equalizing the temperature. The western side of the state is warmer than a corresponding latitude on the eastern side, owing to the southwesterly winds across Lake Michigan and therefore we find in the central and western part of the lower peninsula trees such as tulip trees, the coffee tree, honey locust, dogwood, mulberry, etc., which really belong to Ohio and central Illinois. For the same reason the peach and other fruit districts in portions of the state compare favorably with districts in Delaware and Maryland that are farther south and near the ocean.

Many river valleys of the lower peninsula, with their sandy and stony drift, support a heavy growth of oak often interspersed with black walnut, hickory and white ash, the margins of the rivers and near-by swamps being well supplied with black ash, soft maple, chestnut, oak, elm, hackberry, sycamore and butternut. Willows, dogwoods, viburnums and button bush are well-known shrubs of the swamp unless it may be the viburnum. The different varieties of sweet viburnum have for their common name, sheep berry, wormy berry, cranberry tree, etc., and are small trees along the borders of swamps.

Drier ground grows in abundance the hazel, hawthorn, wild cherry and plum, Juneberry and witch hazel. Tamarack, a valuable timber, is frequently found in the swamps of the southern part of the state, while arbor vitae, often called white cedar, takes its place farther north. This wood was used by the Indians to strengthen their canoes and for making baskets. Its fluids are of medicinal value, and its fresh young branches are used in broom making.

As we move away from the streams on to the uplands, the gravels and sands give way to clay loam and black soil and we find the prevailing timber to be beech, maple, and oak in about equal proportions. We usually find the beech and maple growing together, forming magnificent forests of great size. The beech and sugar maple are the most common trees of Michigan and are found all over the southern peninsula on the timbered land. As we go northward much of the maple is of the curly, or birdseye kind, so much used in furniture and parts of railway coaches.

White oak is valuable, also white ash, which is found in various parts and stands without a rival for the making of farm implements, floors, cabinet ware, and for the finishing of churches and dwellings. It is famous for its elasticity, strength and beauty. It grows rapidly and oftentimes to a large tree.

Black walnut is an indication of good soil, but it is rapidly becoming scarce. Rock or white elm are large, perfect, tall, straight and valuable trees, found in large quantities in the central part of the southern peninsula. The lumber from these trees is used in making farm implements, railway cars, etc. The black ash of bottom lands is used for rails, hoops, baskets and cabinet ware.

The Kentucky coffee tree is not common to this latitude. It is a tree with few limbs and wavy bark. It has a brown curved pod two inches broad and from six to ten inches long, containing hard gray seeds half an inch in diameter. In the south the seeds were once used as a substitute for coffee. The pepperidge tree, when grown with top well exposed, has numerous small branches growing at nearly right angles from a short main axis.

(Concluded next week).

COMING EVENTS.

District Lecturers' Conferences.

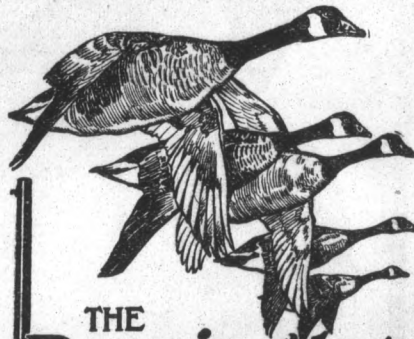
Mar. 28, Lansing, Hotel Wentworth, 11 a. m.
Mar. 29, Gd. Rapids, Hotel Cody, 10 a. m.
Mar. 30, Big Rapids, Pres. church parlor, 10:30 a. m.
Mar. 31, Cadillac, Court House, 10 a. m.

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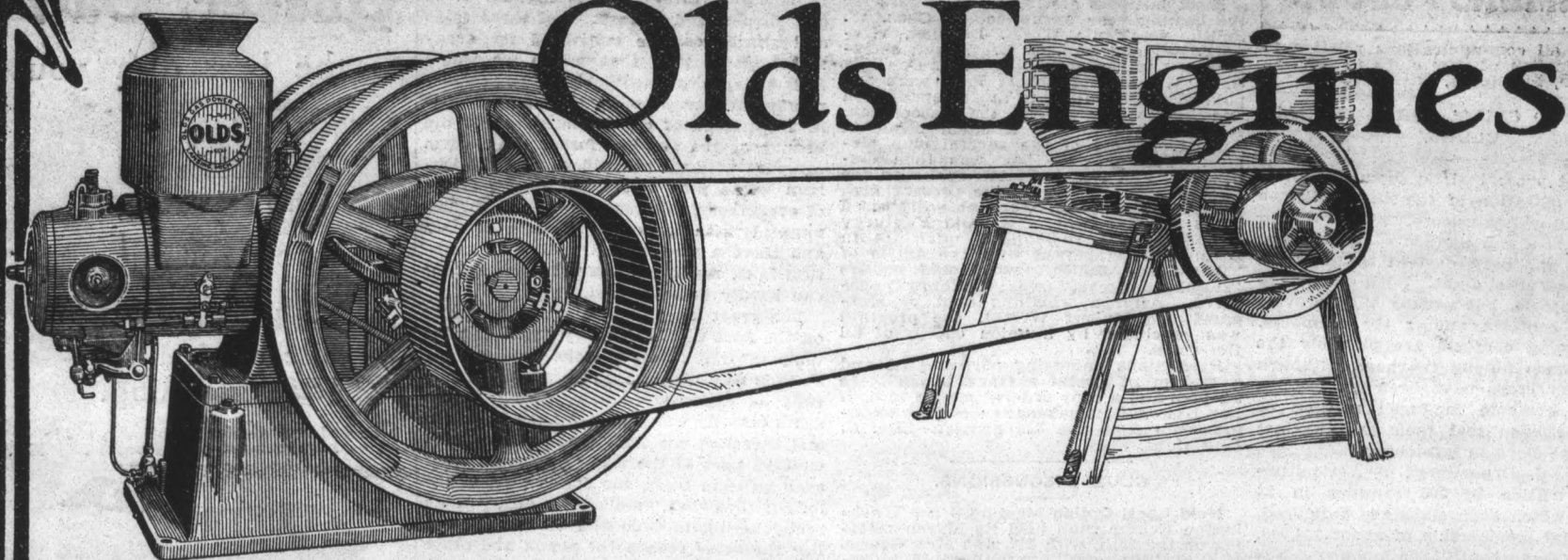
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