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DETROIT, MICH., SATURDAY, APRIL 17, 1909.

75 CENTS A YEAR
\$1.50 THREE YEAR

FARM NOTES.

Treating Seed Potatoes for Scab.

Last year I read in the Michigan Farmer that you intended to use the gas method in treating your seed potatoes for scab. The past two years I have soaked potatoes in formaldehyde with good results, but as I will plant about 80 but this year I would rather use the dry method. Last spring I cut some before I soaked them and found that they would not heal. The solution seems to burn the flesh of the potato and it does not heal and continues to rot. Is there any danger from getting the gas too strong? Would a cellar under a house be all right? Could you give me the amount of the chemicals to be used per 100 cu. ft? Will the odor last in the cellar so as to be a nuisance for any length of time? What variety of potatoes is best for the early market? I am trying Early Ohio and Early Hamilton this year.

St. Joseph Co. JOSEPH OLNEY.

As was mentioned in this department of The Farmer, the writer tried the gas method of treating seed potatoes for scab last year. This method consists in the use of formaldehyde gas in the same manner that it is used for the disinfection of houses in which patients having contagious diseases have been confined. The gas is generated by combining three parts by weight of potassium permanganate with eight parts of formaldehyde in the following manner: Place the permanganate in the bottom of an earthen crock or jar having a capacity of at least one gallon for each pint of formaldehyde to be used; then pour the formaldehyde into the jar and retire quickly from the cellar, shutting it up as tightly as possible. The formaldehyde will at once be converted into a gas which has been found to be deadly to the spores of the fungi. At several experiment stations where this treatment has been tried it has been found equally as effective as soaking the tubers in a solution of formaldehyde or of corrosive sublimate. In our experiment one pound of the formaldehyde was used for each 1,000 cubic feet of space in the cellar. Whether this was a sufficient amount or not we are not quite certain. The results were fairly satisfactory, the proportion of scabby tubers being comparatively small, but as the seed was not badly infected we did not consider a single trial as sufficient to fully determine the efficacy of this treatment. It is probable that the use of more material would not injure the seed in any way, as no ill effects whatever were noted from this application.

Where the potatoes are stored in a house cellar the gas would doubtless be something of a nuisance. In our case the seed potatoes were stored in a cellar under an outbuilding, where the odor from the escaping gas was not a factor to be considered. With a little care in calking up the door leading into the cellar it would, however, probably be possible to treat them in a house cellar without serious inconvenience, as a thorough airing would soon dissipate the odor. For the ordinary grower, however, it would probably be more satisfactory to treat them in a solution, using one pound of formaldehyde to 30 gals. of water and soaking the tubers from an hour to an hour and a half, depending upon how badly the seed is infected. With barrels arranged so that the liquid can be conveniently drawn off at the bottom, the seed can be treated in this way without a great amount of labor and the writer has never noted any ill effects from such treatment, but has always soaked them before cutting.

Some growers still adhere to the corrosive sublimate treatment, using an ounce of corrosive sublimate dissolved in 4 to 9 gals. of water and soaking the potatoes in this solution for the time above noted for the formaldehyde solu-

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tion. The objection to this method is the poisonous nature of the solution, on which account the writer has discarded it for the formaldehyde treatment above described. While the latter has apparently given us just as good results, some growers contend that the corrosive sublimate has given them better results. Where this method is used the better way of preparing the solution is to first dissolve the corrosive sublimate in a small quantity of warm water in an earthen vessel, diluting it as needed and using only earthen or wooden vessels to contain it on account of its corrosive effect upon metal.

Whether it will pay to treat the seed each year is a question which the grower will settle from experience. Probably it would pay in practically every case, but a fair degree of immunity from scab can be secured by the treatment of seed each

alternate year, provided there is no appearance of scab in the seed used. But when scab is present to any noticeable extent the seed should always be treated, as the expense is small and the benefits generally very noticeable.

The variety of early potatoes which it is most profitable to grow for market purposes will depend largely upon the season and the market. In some seasons the very early varieties will give the best profit, because they can be placed on the market when the demand is at its best, but in other years a medium early variety will give a better profit, for the reason that such varieties are generally better yielders than the extremely early sorts. Personally the writer would prefer to rely upon the medium variety that proves a reliable cropper under his local conditions than upon the earlier sort that is a shy yielder, as many of them are.

Eradicating Buckhorn.

I have a six-acre field, light clay soil, somewhat run, that was planted to beans in 1907, and last spring was sown to oats and seeded to timothy and clover. The seeding came good and looked promising, but later on was nearly used up by the drouth. I got my grass seed at the elevator and find now some plants of buckhorn. I want to get rid of that. I have been thinking of planting the field to beans again and then sowing to rye and seeding it this fall. Or would you advise to fit the ground this spring and seed it to timothy and clover without a cover crop. I forgot to state that fertilizer was sown with the oats. If I had manure to cover the field I would plant it to corn.

Ingham Co.

J. T. HOLLEY.

If it is desired to eradicate the buckhorn and at the same time utilize the field for sheep or hog pasture, or even for pasturing young cattle and get it reseeded to clover, it would be an excellent plan to plow and fit for a good seed-bed and sow Dwarf Essex rape broadcast at the rate of 4 or 5 lbs. per acre and seed to clover as early as the work can be done. If the pasture is intended for young cattle it would be a good plan to sow a few oats and possibly a little millet with the rape. This would accomplish the desired end of getting rid of the buckhorn and getting the field reseeded without the loss of its use for the entire season as would be the case if timothy and clover were sown without a nurse crop as is suggested in the inquiry, and the condition of the soil would also be somewhat improved by the process.

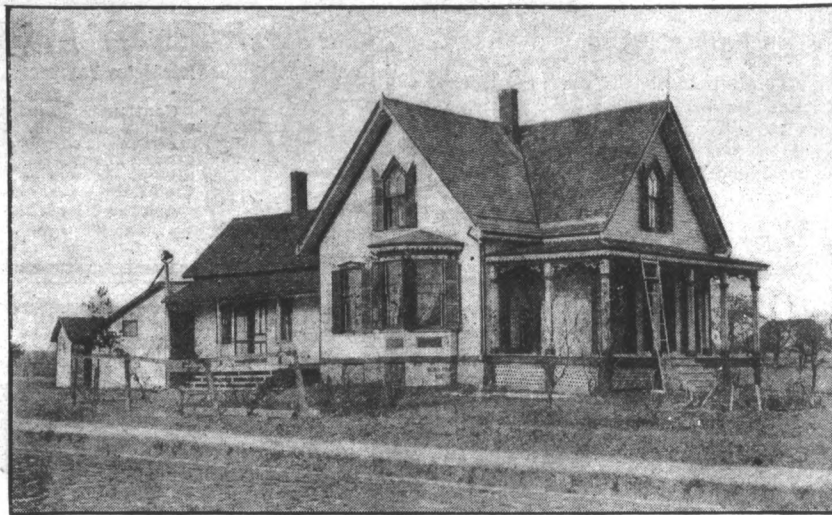
Our own experience with this weed has, however, not been of so serious a nature as to make this course seem necessary. While we would not sow grass seed that contained it, yet we have found that the stock, particularly sheep, will eat it, and that it has not survived thru the crop rotation in the cultivated fields on our farm. On the clay soil described it would be more tenacious, however, and it might pay to exterminate it, even at the cost of plowing up the seeding as suggested.

Fertilizing Potatoes.

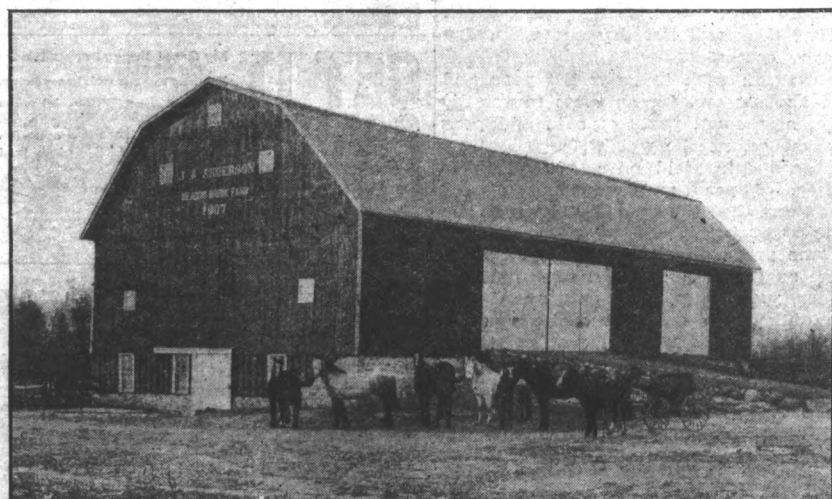
Last year I manured heavily a tract of sandy soil sod, such as it was, for potatoes. Owing to lateness of application of manure and dry season, I don't suppose the crop got much benefit from the manure. I should like to plant it to potatoes again this year. I can fertilize it with commercial fertilizer or I can put about 50 bushels of hen manure broadcast to the acre. It is sandy soil. Under the conditions, what would be the chances for getting a crop, and which method of fertilization would you suggest? Tuscola Co. J. P.

The best results in the fertilization of the soil are secured where commercial fertilizers are used in connection with stable manure. Stable manure is not in itself a well balanced fertilizer, and by adding the mineral elements of fertility in the form of a commercial fertilizer better results are secured, as from the feeding of a balanced ration to live stock in comparison with a ration which is deficient in an essential nutrient. Stable manure contains a relatively large proportion of nitrogen, and can be profitably supplemented with a commercial fertilizer containing relatively large proportions of the mineral elements of plant food. For this reason it would be better, in the writer's opinion, to fertilize this land with commercial fertilizer, since it was covered with stable manure last year, much of the plant nutrients in which did not become available for last year's crop. In this way the fertility of this soil can be fairly well balanced, and the stable manure used on sod ground for corn, where it will give the greatest profit during the first season of any place in which it could be used on the farm.

Of course, if the same field is to be used for successive seasons for the same



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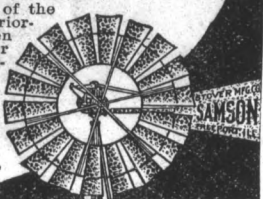
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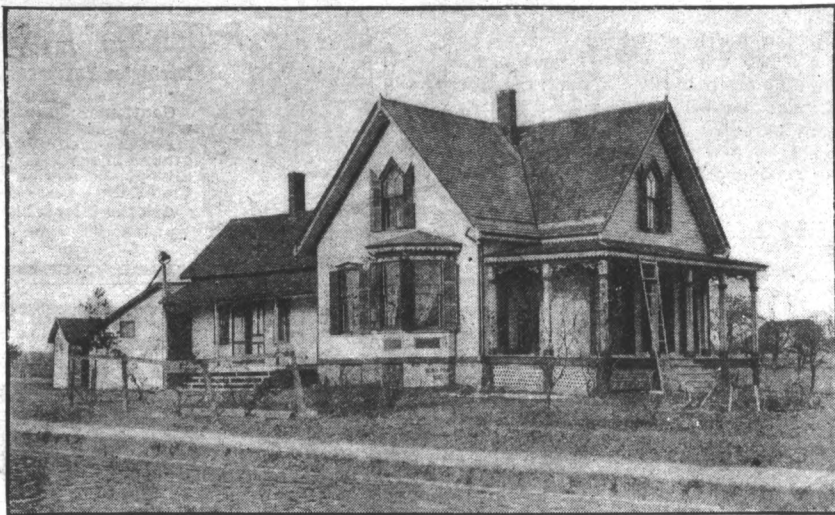
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Of course, if the same field is to be used for successive seasons for the same



The Buildings at "Meadow Brook Farm," Home of J. A. Anderson, Kent Co., Mich.



crop in the rotation, the humus will be rapidly exhausted, and the stable manure will prove beneficial in restoring it and improving the mechanical condition of the soil. But the vegetable matter contained in the sod and the manure plowed down last year was not converted into humus on account of the dry weather, and could not have been exhausted by the crop of last year. Hence the wisdom of applying commercial fertilizer which contains readily available plant food and putting the manure on the corn ground or other grass land to be plowed this spring. Where any kind of stable manure is to be used on potatoes it should be applied during the winter or early spring for best results, which is another good reason for the advice given.

While it is probable that a better crop of potatoes can be grown upon this land the present year than was secured last season, yet it is a practice of questionable wisdom to grow the same crop for two years in succession in the crop rotation. As a means of guarding against the results secured in this instance, it is a good plan to plow the potato ground as early in the spring as possible and work it over frequently to conserve the soil moisture for the use of the crop, rather than take the chance which may mean failure in the crop by delaying the plowing until the ground may be dried out and a summer drouth beginning.

Land Not Producing Well.

I have a field that was planted to corn last year which I intend to sow to barley. About an acre of it was covered with water all the spring until planting time when I put in a tile drain. This ground produced scarcely any corn and seemed to be sour. Please advise me the best means of getting it into condition for a crop of barley. The soil is black and rich and has formerly produced the best of any part of the field.

INGHAM CO. SUBSCRIBER.

It often takes some time for a tile drain to get into good working order on a heavy clay soil, especially where the same is underlaid with a hard-pan formation. In some cases it has been found to take two or three years for the soil to get in condition so that the water percolates thru it freely to the tile, so that the first year's results on this kind of land are not always satisfactory. Generally the condition of such land will improve after it has been drained, but of course there is a chance that this soil is sour and needs liming. The application of lime would tend to break up the hard soil and would hasten the time when perfect drainage would be secured by this means. It would also neutralize the acidity of the soil if it is found to be sour. The application of lime to the soil has been so freely discussed in recent issues of The Farmer that it is unnecessary to comment upon it at length at this time. Probably the application of say 1,000 lbs. per acre of lime upon this small area would prove a profitable investment for the reasons above given. The soil may be tested for acidity if desired, by the use of litmus paper, but on account of the physical betterment of the soil which would be secured thru its application, it would probably be a profitable investment to apply it to this small area whether there is an acid reaction or not.

Rape for Early Pasture.

I would like a little advice thru the columns of the Michigan Farmer in regard to rape. I have a quantity of seed two or three years old. Would it be safe to sow this for a crop or would you advise fresh seed. Also, what time should it be sown for early pasture? I have always sown in May. Would it be safe to sow in April?

MECOSTA CO.

F. B. COOK.

If the rape seed has been stored in a dry place it is probable that it will grow all right. We have frequently kept it over one season without any apparent deterioration. However, with seed of uncertain age it would pay to test it for germination so as to be certain that it will grow under average conditions. This will require little time or trouble and is much better than planting seed that one has any doubt about. A good way to test small seeds of this kind is to take a small box such as a cigar box and put several sheets of well moistened paper in the bottom, then sprinkle on a little seed and put more moistened paper on top of the seed, shut the box and keep it at the ordinary temperature of the living room for a few days. In four or five days the seed should be sufficiently germinated so that you can tell whether it will produce plants of good vitality or not.

Rape may be safely sown in April for early pasture. The writer has often sowed it in oats in April with good results. We shall sow a liberal acreage in April this year for early pasture, sowing a few oats at the same time. This will

add a little variety to the pasture and will make a little better early feed. Another field will be sown to rape alone early in May so as to make a succession of forage for the sheep, but as this field is adjacent to another pasture which will give the needed variety to the forage, the rape will soon be sown alone. Both fields will be seeded to clover and neither will be so severely pastured as to injure the prospects for a good clover seeding. Where properly handled we have had very good success in seeding with rape to be used as a forage crop. A light application of commercial fertilizer helps to get the small plants of both rape and clover started in a vigorous manner and is generally a profitable investment. For this purpose we shall use a complete fertilizer, applying it at the rate of 200 to 300 lbs. per acre, putting it on broadcast and working it into the soil before the seed is sown.

Spreading Straw and Chaff on Crops.

I would like to ask if straw could be spread on the oat ground immediately after the oats are sown, with good results; also would it do to spread clover chaff on the wheat in the spring when the ground is settled and the wheat has started to grow?

EATON CO.

A. C. SACKETT.

The writer has never seen an experiment of this kind tried but is of the opinion that it would be impracticable to spread straw thinly enough so that the oats could come up thru it without any damage to the prospective crop. Of course, if the straw were in the form of coarse manure, it could be spread with a manure spreader as thinly as might be desired, but in spreading it by hand it would take a great deal of time to get it sufficiently thin and even so that there would be no bunches of straw thru which the oats could not grow. The same might be said with equal force in regard to the clover chaff, nor does it appear that any particular advantage would be gained by the disposition of the straw and chaff in this way. They had better be used as absorbents in the stable or yard and drawn to the field with the manure made next winter.

SUCCESS WITH RAPE SOWN IN WHEAT AND RYE.

I noticed Mr. Sager's inquiry in The Farmer about sowing rape in wheat and rye.

For the past two years we have sown rape on all of our wheat, rye and oat ground and have had fairly good results. Last year we sowed thirteen acres of wheat and ten acres of rye to rape and clover, and altho it was very dry we got a good catch of clover and quite a good stand of rape. Of course, if the wheat or rye is very thick on the ground the rape will not make much growth until the grain is cut. Two years ago we sowed ten acres of wheat to rape and clover. The wheat was winter-killed in spots and on these spots the rape grew to a good size before the wheat was ripe enough to cut. This ten acres threshed out 172 bushels of wheat and the rape made a splendid fall pasture for sheep. We did not think the sheep injured the clover.

GD. TRAVERSE CO.

G. L. CHAMPNEY.

QUESTIONS ABOUT PEAS AND OATS.

What soils are best adapted to the raising of oats and peas for grain? Can they be profitably grown upon a gravelly soil? How much of each should be sown per acre and when? What would be a fair yield per acre of oats and peas on a gravelly soil in good state of cultivation? Can they be successfully harvested with a grain binder?

LIVINGSTON CO.

SUBSCRIBER.

Peas and oats will do fairly well on any good soil but the best soil is a rich clay loam. If sown on gravelly soil, the peas ought to be sown a pretty good depth so that they will not dry out when dry weather comes.

When you wish to grow the peas and oats, harvest and thresh them to get the grain, sow equal parts of oats and peas by measure, not by weight.

A good fair yield on good soil is 50 bushels of peas and oats an acre. I would say that the crop would vary from 25 to 50 bushels.

Some years on rich soil this crop will lodge so that it is difficult to cut with a binder, just the same as oats some years are difficult to cut, but ordinarily they can be cut with a binder just as well as oats alone.

COLON C. LILLIE.

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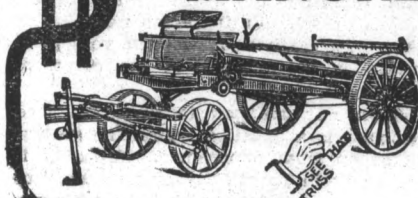
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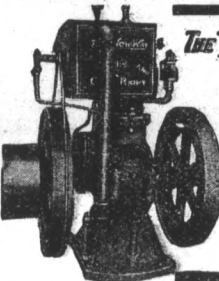
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GOOD RESULTS WITH LATE SOWN ALFALFA.

The inquiry of A. C. Freeman in regard to fall seeding of alfalfa and your reply was very interesting to me because I have tried that very thing on a small scale, seeding after early potatoes. In 1907 I planted a quarter of an acre to early potatoes, dug them as early as they were fit to market. I got 25 bushels, and sold what we did not need at home for \$1 per bushel. I then spread six loads of manure on the plot, plowed and thoroly harrowed the ground and sowed to alfalfa. In 1908 I cut three crops of alfalfa hay, after which I turned a sow and eleven shoats into it and kept them there about six weeks. The shoats grew like weeds and the sow did remarkably well.

In 1908 I sowed eight acres to oats and peas. This was corn stubble that had been well manured for corn. I cut the oats and peas for hay, plowed the ground and prepared a good seed bed and sowed 15 lbs. of alfalfa seed per acre. Today it is all alive and I am looking for hay this season. I have some seed left and I intend sowing about three acres with either oats or barley, cutting same for hay. I expect the nurse crop will keep back the weeds, and by cutting it green for hay will not damage the alfalfa much.

I sow the best seed I can get. What I have cost me \$12 per bushel. My first experience was with cheap seed, and I got so many new kinds of weeds that I would not again sow anything but the best and cleanest seed.

Keep the alfalfa question going. I am only in the infant class, but I am willing to exchange ideas.

Oakland Co.

C. R. COOK.

REQUISITES FOR SUCCESS WITH ALFALFA.

I have been a constant reader of the articles written by Mr. C. C. Lillie since he began writing for the Michigan Farmer, and have always maintained that he was a man of very good judgment and a practical writer, but in his last article upon the subject of alfalfa, written under "Lillie Farmstead Notes" on page 351, he will make a grievous mistake if he tries any such plan as he has explained being advocated by Dr. Beal, of M. A. C.

There will be no question as to the report he will be able to give the readers of the Michigan Farmer regarding such a method of seeding alfalfa.

In the first place, he speaks of using five pounds of alfalfa seed, one peck orchard grass, one peck meadow fescue, one peck tall meadow oats grass, and two and one-half pounds timothy seed per acre.

I never have known of a person using less than twenty pounds prime alfalfa seed per acre who could report anything short of failure regarding a perfect stand of alfalfa. Alfalfa, being such a frail plant to get a start, it does not need the above named seeds to help crowd it out.

Ex-Governor W. D. Hoard, of Wisconsin, sows three pecks barley per acre, twenty to twenty-five pounds prime alfalfa seed per acre, together with a liberal amount of commercial fertilizer. He is growing alfalfa year after year with success. Several of our neighbors in this vicinity have been successful in securing very good stands of alfalfa of from three to fourteen acres by this method.

Another very successful method practiced here is to very thoroly prepare a fine seed-bed. Apply from 200 to 300 lbs. complete commercial fertilizer and from 20 to 25 lbs. prime seed. The commercial fertilizer is very essential as it places available plant food within easy reach of the tender plants.

Now, Mr. Lillie, as you propose experimenting on your own farm for the benefit of yourself and the readers of the Michigan Farmer with this subject of securing a perfect stand of alfalfa, would it not be far more beneficial to yourself and others to divide the intended four acres into at least four divisions, allotting one portion to Dr. Beal's method, one to Ex-Governor Hoard's, i. e., seeding with three pecks of barley, fertilizer and alfalfa seed; one portion to the method last named, i. e., seeding alone with fertilizer, and the fourth portion to be seeded with oats and peas, the same to be cut and cured for hay, after which a fine seed-bed should be prepared by plowing, harrowing, etc., and about 25 lbs. prime seed sown with at least 200 lbs. of fertilizer per acre, seeding to take place between July 15th and August 15th, whenever the weather conditions are most favorable to

quick germination and rapid growth. This latter method has been the one which has given me the most satisfactory results.

I hope Mr. Lillie can see his way clear to conduct his experiment in this way.
Lenawee Co. J. A. LAWSON.

TILE DRAINAGE.

The drainage question is one of great importance in Sanilac county, especially to those who have to pay an enormous tax for this purpose. In the township of Marlette, our drainage tax alone for this year amounted to over \$11,000, and will be fully as much next year. No one will question but that this is a good investment, as well as a public benefit. But this excessive outlay of money will be practically a total loss to the tax payers unless they work out the real object of the public drains, by draining their own farms.

This part of the drainage question has been seriously overlooked by the average farmer. I have made the statement a good many times that I believed there was more loss of crops every year by an excess of water than from all other causes combined. Not that we have had too much rain, but that the land was not properly drained in order to carry off the surplus water. It certainly seems like utter folly to fertilize, plow, and prepare a piece of land, and put in a crop, when we do not know but that it will be partially drowned out. I have seen field after field this last year, where the crop was partly drowned out, and there is no doubt in my mind but that, if this land had been properly drained, the difference in the crops produced would more than have paid our excessive ditch tax. If we have to wait for the surface water to evaporate, before we can get on the land to work it, we certainly cannot prepare the right kind of a seed bed, and if we cannot get a suitable seed bed then our crop will surely be a failure. Heat, air and moisture are essential to the proper germination of seed, and if our seed bed is not right, we cannot combine these three essentials and the result will be a failure.

Tile draining is much superior to open drains, but in case we are not able to put in tile the open drain is the next best thing. In fact, it is indispensable in a great many cases. It is surprising to see what a man can accomplish along this line in a day with a plow and scraper. There are several farms in this locality that are using the open drain and they seem to be very satisfactory. Doesn't it seem strange that a man should plow thru mud year after year, and get nothing for his labor, when by doing one or two good days' work with his team, he could drain the land permanently, and fit it for a crop? Nevertheless, it is a fact. Take it on the whole, the tile drain is altogether the best. Land that is tile drained is much more valuable than undrained land, because it becomes more porous, will hold more moisture, and will resist a much greater drought; also because it can be tilled at a season of the year far in advance of the other. If we farmers would put in from fifty to one hundred rods of tile drain each year it would not take long to make quite a showing, and I can assure you that the result will be surprising. As a rule, people are looking for a place to invest their money that will pay them the largest dividends; some choose one thing, and some another, while a large majority even put their money in the bank and receive only the low rate of 4 per cent. I can safely say that if this same money was invested in tile drainage upon their farms, that it would pay them five times the interest which they receive at the banks. I question if there is any other place that we can invest our money which will bring us as large a dividend as in this one particular way.

Sanilac Co.

W. A. ELLIS.

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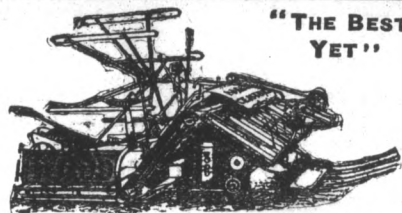
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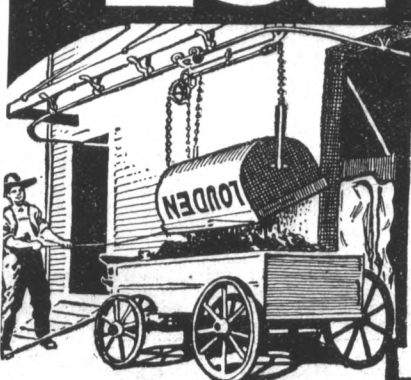
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I used one of your New Century Binders this year. I cut one hundred and twenty acres and never skipped a bundle, and I can safely say it is the best binder built to-day.
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LIVE STOCK

FEEDERS' PROBLEMS.

Turning the Stock to Pasture.

As the pasturing season approaches a word of advice and caution regarding this important change in the diet of the animals will not be amiss. In a drive thru the country early this week the writer noticed several flocks of sheep that had already been turned on the pasture fields, altho the new grass has not yet started and little forage was available except the frostbitten grass that remained from last year. The only apparent object in this seems to have been the saving of a little hay at the close of the stabling season, but from observation as well as experience we believe that the apparent saving will result in an actual loss. With hay as cheap as at present there would seem little excuse for turning the stock out until the pastures are in good condition, and to do so is bad for both the stock and the pastures. A great many farmers turn the stock out as soon as there is a bite of grass, leaving them out in all kinds of weather and without supplementing the grass with any other feed. This is a very violent change, and in every case will result in a loss of condition. But if the stock is kept at the barn on good dry feed until the grass gets some little start and contains a liberal amount of nutriment as well as succulence, and the change is then made gradually by turning out a short time at first then bringing the stock to the barn and giving a feed of good hay in the morning, as well as a slightly reduced grain ration until the stock becomes accustomed to the change, much better results will be secured, and the additional yield of forage which will be secured from the pastures by practicing this plan will more than repay the cost of the few loads of hay which will be necessary to carry them on dry feed until such time as the pastures have made a good growth. This is a point which is as essential as the welfare of the stock. Grass cannot make a vigorous and healthy root development without it is allowed to make a similar leaf development, and if kept closely cropped from the time it starts in the spring the yield of forage will be scanty thruout the season and the pastures will begin to fail at the time when they should be in their prime. Some farmers appear to think that it is wasteful to let the pastures get a good start, especially for sheep, but if they would try it out for one season they would generally hold a different opinion. By providing two pasture fields and turning the stock from one to the other as the grass is pastured down, thus letting it get a fresh start it will be found that a much better yield will be secured and the stock will be summered more economically and in much better condition. Too early or too close grazing of the pastures is not profitable from any standpoint.

A Ration for Breeding Ewes.

I would like some advice on what to feed breeding ewes directly before and after lambing. Up to the present time my forty-five coarse-wooled ewes have had corn, with clover hay and cornstalks for roughage.

Genesee Co.

J. D. SCOTT.

The proper feeding of breeding ewes for a good lamb crop is not a question involving only a few weeks before and after the lambing season, but it is a question which the flock owner should consider the year around, as the feed and care received by the breeding ewes thruout the year has a more or less direct influence upon the final success with the lamb crop. The writer has been feeding a grain ration composed of about 5 parts corn, 2 parts bran and 1 part old process oil meal by weight, together with clover hay, to the breeding ewes just before and after the lambing period. This makes a fairly well balanced grain ration and with the addition of a few roots and what clover hay the ewes will eat, will prove a very satisfactory feed. The bran was added to this ration about three or four weeks before the lambing season arrived; previous to that the grain feed had been corn and oats with about the same proportion of oil meal as is now fed, while cornstalks were fed once each day with clover hay. About 1/2 lb. per day of grain was fed during the early part of the winter with a slight increase before the lambs were dropped, increasing the ration to 1 lb. as soon as the lambs were two or three weeks old, which has since been increased to 1 1/4

lbs. per day and will be further increased up to the time the sheep go to pasture, when it will be gradually diminished but not entirely omitted except during the season when the pasture is at its best. A little grain fed to the ewes will show in the size and condition of the lambs, especially when first turned to pasture and again when the pasture begins to fail, before the lambs are weaned. An additional advantage lies in the fact that the lambs will become accustomed to eating the grain with their dams and can be kept growing right along after being weaned by feeding a small grain ration on the pasture.

After the lambs are weaned the ewes should run on a scant pasture for a few weeks, after which we have found it profitable to have a field of rape or some other good succulent pasture to turn them into so as to get them in good condition before the breeding season arrives. They will then go into winter quarters in fine condition and with good care will be in the best shape to grow a good crop of lambs the following season. It is a mistake made by too many breeders in thinking that the ewes should be kept in rather low condition to produce the most thrifty lambs. As a matter of fact, the ewes cannot be in too good condition, provided their flesh is put on in the pasture lot upon nutritious, succulent forage, rather than by the use of a carbonaceous grain ration.

A Ration for Horses.

Have to buy all grain for my work horses. Would equal parts by weight of bran, corn meal and oil meal be all right, or would you suggest something better? How many pounds would you feed to 1,300-lb. horses with hay?

Ottawa Co.

D. H. P.

I would hardly want to have one-third of the grain ration for horses composed of oil meal. Wheat bran and corn meal, mixed equal parts by weight, makes a very good ration in itself, but I think an addition of a pound of oil meal a day would be a splendid thing. Oil meal is very rich in protein and when horses are working very hard protein is what they need. Oil meal is readily digestible and is palatable and helps make a splendid ration, but I don't think I would want to feed much over a pound a day of this when you feed bran also. Of course, it depends something upon the kind of hay you are feeding. If you are feeding clear timothy hay, perhaps you would not get any too much protein, depending something on the amount of grain you fed.

Now, with regard to the amount of grain that you should feed a horse weighing 1,300 lbs. The ration for a horse ought to vary with the amount of labor that he does. A horse standing in the barn wants only a maintenance ration. When he is put to light work he needs to have the ration increased and the protein in the ration increased correspondingly. When he is put at heavy work the ration should be largely increased and a larger per cent of protein added to it. Consequently, no one can advise just how much grain a horse ought to be fed without knowing the conditions under which he is fed. A horse at light work ought to have 1 1/2 lbs. of protein, at medium work, 2 lbs. per day, and at heavy work, 2 1/2 lbs. of protein per day per 1,000 lbs. live weight. Hence if your horse weighs 1,300 lbs. he ought to have about one-third more. When a horse is at heavy work his ration ought to be in the proportion of 1 lb. of protein to 6 lbs. of carbohydrates, while, when he is doing light work, it can be in the proportion of one to seven. It is a safe rule to feed, when the horse is doing heavy work, all the ration that he will eat up clean every day. One must be governed by the condition of the horse and the amount of work he is doing; but when he works hard he must be fed liberally, just as a cow must be fed liberally when she is yielding a large flow of milk.

We received the paper and premium this morning and am very much pleased with them.—R. Ousnamer, Leonard, Mich.

The latest reports from the cattle-feeding districts of Illinois, Iowa, Missouri, Kansas and Nebraska are to the effect that there is bound to be a great shortage of cattle for the western markets from each of these important cattle feeding states during the next three months. It should not be forgotten, however, that there is a great falling off in the demand for beef, many men being out of work all over the country, east and west. Kansas and Nebraska are still supplying the Chicago market with a large share of the best long-fed heavy beefs, but stockmen generally agree that on the whole the largest profits are made from short-fed handy little fat yearlings. Many stockmen are replacing their heavy cattle with well-bred feeding cattle weighing around 900 to 1,100 pounds, and it is believed that these will make good selling cattle for the summer months.

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It is this Ruberoid gum which makes Ruberoid so good a fire resistant. You can throw burning coals on a roof of Ruberoid without danger of setting fire either to the roofing, or to the timbers underneath.

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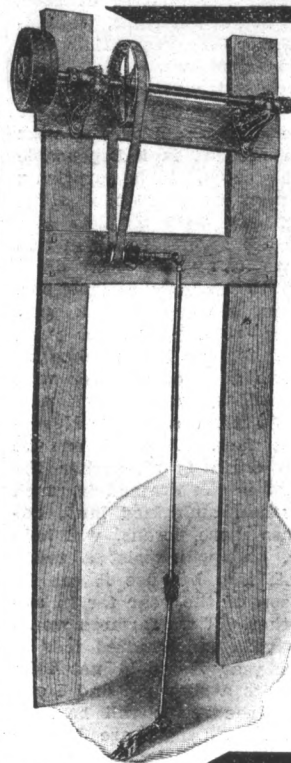
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The saving in cost of dipping in Century official fluid is tremendous. Remember, it is highly concentrated. Don't pay freight on gas house tar, water and other useless ingredients. ASK FOR No. 133D and enclose \$50.00 for a 50-gallon barrel, \$6.25 for a 5-gallon can, or \$1.50 for a single gallon.

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Write for Prices and Terms.

THE BUFFALO FERTILIZER CO., Sta. A, BUFFALO, N. Y.

SHEEP AND TICKS.

A sheep shearer was at dinner with us yesterday. During the meal he put his fingers under his collar at the back of his neck and jumping up started for the kitchen, where I saw him drop something on the top of the range, then he returned to his unfinished dinner with a smile of satisfaction that most people wear when they have been successful. "Ticks," I remarked, and he nodded, then said there were a few, but at the last place where he had sheared there were a hundred thousand. I think he must have exaggerated a bit, for that is a large number to find lodgement on half a hundred sheep. There were probably a large number, too, to cause him to make such a remark. Unless "familiarity breeds contempt" just imagine what an uncomfortable time those sheep have been having for months past. One tick seemed to be that much too many for the man, yet he was bigger than the sheep. Suppose the flock owner had to let fifty of the ticks crawl over his body and bite at will for an hour. I think he would be the maddest kind of a man by that time, yet he lets the poor helpless brutes suffer all their lives. If the flock owner could be made to realize not only the discomfort to the sheep, but the actual money loss the presence of the ticks are to him, he would make haste to get rid of them. The ticks are veritable vampires, blood-suckers that prey upon the sheep night and day. The blood that the ticks draw from the sheep has to be replaced by extra feed or the sheep is weakened. This, in the case of breeding ewes, is a serious matter. When they need all their vital powers to produce strong, healthy lambs they are called upon to feed a lot of bloodthirsty vermin. Mr. Leo C. Reynolds, in The Farmer of April 3rd, writes on the "Low Vitality in Lambs." Where the ewes are drained of vital fluid all the year it is not surprising that they fail to produce strong and vigorous progeny. Breeding stock especially, ought never to be called upon to support such a drain on the vital powers, no stock ought to for that matter, when by dipping, the nuisance can be gotten rid of. It would be good dollars in the pocket of every flock owner if he dipped his sheep twice a year. They should be dipped in the spring after shearing, so that the young lambs will not be overrun, and again in the fall so that they can go into winter quarters free from the pest, and in condition to turn all feed to the best account.

Eaton Co. APOLLOS LONG.

ENSILAGE FOR BREEDING EWES.

In The Farmer of February 20, you ask for the experience of those who have practiced feeding ensilage to breeding ewes. For ten years previous to 1908 I used ensilage freely in the ration for breeding ewes and fattening lambs in Michigan and would not do without it in that country.

F. W. K., of Kent county, should build a silo for five hundred sheep and he will be delighted to see them lick the managers clean.

Arizona. C. M. PHILLIPS.

FEEDING THE VEAL CALF.

I have been reading your various articles about feeding the veal calf with much interest, but have not as yet read any that describe feeding them as we do. There was one writer who said he only let the calf have one teat at first, then two, etc., as the calf did not need so much at first. Now, our idea has always been that the calf needed as much milk as it would take, but that it would not take as much at first as it would later. Our plan has been to keep the calf in a small pen both night and day, and turn it to the cow morning and evening, let it have what it wanted and then strip the cow dry, thereby getting the richest milk. We have by this method, sold veals at seven weeks' old that weighed 225 lbs. By this method the cow seldom worries about her calf when it is sold.

Mecosta Co. H. L. S.

Following the removal of the federal quarantine against interstate movement of live stock from Michigan and Maryland, the Illinois quarantine against Michigan live stock shipments was lifted early last week, after a period of four months during which Chicago received no sheep from the quarantined Michigan region, following the outbreaks of the foot and mouth disease. There was great rejoicing among sheepmen. From now on Michigan sheep and lambs may be expected to be marketed freely at Chicago, as formerly, instead of being shipped freely to Buffalo.



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To win lasting success you must deserve it. From a very small beginning 22 years ago we have grown to be the leading live stock commission firm of the country.

Our business has steadily increased. The reason is simple.

Year after year our old customers consign to us, and through their recommendations new ones are constantly "trying" us.

And if we can get a feeder or shipper to "try" us it usually means a new customer. These new customers in turn recommend others, and so our business grows.

Live Stock

Selling Fat Stock

You have fed, watched and worked with your stock for months, but when it reaches market it's our turn.

We handle your consignment just as we would if it belonged to ourselves. We work hard to get the last cent of price, and the best fill.

We must please you, or we can't expect your future business. If you are a small feeder, that makes no difference. Over half our business comes from small feeders, who ship only one or two cars a year.

We wouldn't be so foolish as to neglect the small customers from whom we get the bulk of our business. Besides, the small shipper often grows into a big one.

Buying Feeding Stock

Do you want cattle or sheep to feed or graze? Let us buy them for you, and save money, time and bother.

Our buyers who fill your orders for stockers and feeders give their time and attention to that branch, and are experts. These skilled buyers become your employees—your special agents—from the time your order is received until it is filled.

You do not need to come to market, as we not only buy the stock for you to best advantage possible, but look after the loading, shipping, etc. So you save railroad fare and hotel bills, as well as loss of time.

Our order-buying departments at the various markets are organized entirely distinct from the selling side of our business, insuring most careful attention to your interests.

Don't fail to write us if you want stockers or feeders.

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ways to in-
crease business
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more pounds per trip—remember

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It puts good dollars
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A little on each wag-
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HEAVE, COUGH AND DIS-
TEMPER CURE. A Veterinary
Remedy for Wind, Throat and
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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.

Lame Cow.—I have a valuable cow
seven years old that went suddenly lame
in one hind foot. W. C. L., Pinconning,
Mich.—First of all you should make a
close examination of her and ascertain
if she has any tender spots; you will
perhaps find the soreness in foot or hip,
most likely in food and if so foment it
with salt and water, 1/4 lb. salt to 8 qts.
warm water. If you find a wound apply
equal parts calomel, oxide of zinc and
borac acid; cover foot with oakum and
a bandage to keep it clean.

Thrush.—What treatment do you rec-
ommend for thrush in horses? J. C.,
Belleville, Mich.—Thrush is usually the
result of too much wet and filth, there-
fore your first step should be to remove
the cause which perhaps brot it on. Cal-
omel has given me the best results of any
drug. However, peroxide hydrogen, car-
bolic acid, creosote, iodoform, boric acid
and the coal-tar disinfectants are all use-
ful in the treatment of thrush. Keep the
foot clean and dry.

Bruised Hock.—My horse got kicked
last fall, injuring his hock joint; it has
caused considerable lameness but lately
he is less lame than any time since he
got hurt, but the joint is quite swollen
and I should like to reduce it, if it can
be done. J. E. J., Walkerville, Mich.—
The fact that your horse is growing less
lame leads me to conclude that you should
be contented and apply a small quantity
of iodine ointment daily, and nothing
else. His hock will always remain a
little enlarged.

Blind Quarter.—I would like a little in-
formation regarding a cow that came
fresh two weeks ago. She is only three
years old, but it is impossible to get milk
out of one quarter. I find a small hole in
teat, but the quarter of bag is small and
feels as tho it contained no milk. She
is an extra fine heifer giving five gallons
of milk a day from the three teats. Any
advice you may see fit to give will be ap-
preciated. J. M. C., McFarland, Cal.—I
regret to say that it is very doubtful
whether you can restore the quarter or
not. By gentle hand rubbing twice daily
and the use of a long milking tube, not
less than four inches you may be able to
draw milk of an inferior quality from this
blocked quarter, also rub the quarter with
iodine ointment three times a week.

Bog Spavin.—Wire Cut.—I have a horse
which I recently purchased that has a
bunch on inside upper part of hock joint;
former owner tells me that it was the
result of a sprain; have applied liniment
without results. I also have a four-year-

old mare that kicked over a smooth wire
fence, making a wound on fore part of
hock joint. I blistered this bunch once
which appeared to reduce the swelling
somewhat. M. C., Lakeview, Mich.—You
can safely apply any of the blisters that
are regularly advertised in this paper,
for they will answer in the treatment of
both cases; however, I am a believer in
the application of light blisters, therefore
I would suggest that you do not apply
too much at a time.

Serous Abscess in Throat.—One of my
sheep has a soft flabby swelling in throat,
but it is not painful and does not seem
to affect the appetite or general health
any. What shall I do for this bunch?
R. A. B., Coleman, Mich.—Apply tr. iodine
to bunch once a day and if these applica-
tions do not absorb it open sack and
allow the effusion to escape. Give 10
drops syrup iodide iron at a dose twice
daily until swelling reduces.

Strangles (distemper).—My 6-year-old
horse took distemper two weeks ago; did
not swell much on outside, but seemingly
broke in throat. When she drinks water
runs out of nose; she breathes with some
difficulty. I am afraid after she recovers
her wind may be affected. W. M., Glad-
win, Mich.—Apply equal parts tincture
iodine, spirits of camphor to throat once
a day. Put 1/2 oz. creosote in 1/2 gallon
boiling water and direct the steam into
nose for a few minutes twice a day.
Also give 1/4 oz. tincture gentian, 1/4 oz
tincture cinchona at a dose four times a
day. Feed him some vegetables and keep
the nostrils washed out with warm water.

Rickets.—Will you kindly tell me what
is the matter with my pigs? They eat
well, are in good condition, fat enough
to kill, but appear to be weak in back and
hind legs and for the past six weeks have
been unable to get up behind, but are
able to sit up in front. What had I bet-
ter do for them? F. D., Coldwater, Mich.
—Your hogs have been fed an unbalanced
ration, too much corn and not enough
of bone and muscle-making food. If they
were mine I should slaughter them, for
their flesh is all right for food. Had you
fed them some middlings, peas, beans,
vegetables and skimmed-milk with their
corn, also allowed them to exercise more
they would not have shown this weak
and rickety condition.

Chronic Leucorrhoea.—I have a mare
that has had a vaginal discharge for a
long time and would like to know what
to do for it? I bred her last spring but
she failed to get with foal and appeared
to be in heat most of the season. She is
growing thin and weak and if she can be
helped I want her treated. N. W., Bay
City, Mich.—Your mare suffers from an
inflammation of the mucus membrane of
uterus and perhaps of the vagina also.
It may be the result of a part of the
placenta not coming away when she
foaled. It is well to keep in mind that
an animal suffering from leucorrhoea
should be fed plenty of nutritious laxa-
tive food that is easily digested. Give
1/2 oz. powdered sulfate iron at a dose in
feed three times a day, also give 1 dr.
iodide potassium daily for 20 days. If
the discharge is offensive put 1 oz. car-
bolic acid in 3 pints of rain water and
in mixing this lotion you may add 1 oz.
of glycerine with the acid and wash out
uterus daily. Alum and sulfate zinc are
also useful remedies, 1 oz. to 3 pints of
water is the right proportion to use them.

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"KRESO"
KILLS
ALL KINDS OF
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KRESO-DIP CURES
MANGE & SCAB,
CUTS, WOUNDS, SORES,
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is of value to the purchaser only when it stands
for fixed values. "In some articles the quality can
not be determined by any examination the purchaser can
make and in such cases the Trade Mark is invaluable. It enables
you to get goods of known value, goods that have proved to be satisfactory
through the years they have been in use. In the purchase of
LIGHTNING RODS
more than in other things the responsibility and reliability of the firm you deal with is of the utmost
importance for you cannot tell by examining the rod whether you will be protected by it or not, for not only is
the material to be considered, but the construction, and what is most important, the way it is put up. "You can tell
soft copper from hard copper and you can tell from the appearance of the rod whether it is correctly made mechanically, but
do you know whether it is scientifically correct. Are the strands so placed that one will act against the other and when you take
the rod, as a whole, as it is so made that you only get the surface of the cable as your conductor or do you utilize the entire conducting sur-
face of each wire, if the rods are correctly made it will have several times the capacity of one incorrectly made. By buying the
DODD & STRUTHERS LIGHTNING ROD
you get the benefit of our experience in making the rods and an experienced man to erect the rods. Last
year some damage was done to buildings with rods on, because important things were not as they
should have been and it is for your sake that we urge you to see that the Dodd and Struthers
Trade Mark is on the spool. It stands for Honest Dealing, scientific construction
and proper erection. "Insist on getting the D & S rods and you will be pro-
tected and pleased when the job is finished. "Our business is established,
our rods have proved their quality, no other rod is as extensively
used, no other rod has given such universal satisfaction.

DODD & STRUTHERS
DES MOINES
IOWA

WRITE TO DODD & STRUTHERS, DES MOINES, IOWA, FOR THEIR FREE BOOK ABOUT LIGHTNING

Cramps and Indigestion.—Horse seems to be troubled with a kidney ailment; after drinking much cold water or working hard a day or two he is very apt to have colicky pains. W. H. A., Wayne, Mich.—He should not be allowed to drink water after eating grain; better water him before he is fed. Give ½ oz. ground ginger, ½ oz. bicarbonate soda and 1 oz. powdered charcoal at a dose in feed three times a day.

Acidity of Stomach in Sheep.—My sheep are inclined to eat the wool off other sheep of flock. None of them have died on account of doing so but I have thought they might. N. E. H., Scotts, Mich.—If you will give the sheep equal parts ginger, gentian, baking soda, charcoal and salt they will stop eating wool. One-half a teaspoonful is the right dose for sheep and it should be mixed with feed and fed twice daily.

Navicular Disease.—I have a 6-year-old mare that has been lame for the past 15 months. She has been treated by two different Vets. One treated for splint, the other coffin joint lameness; neither of them succeeded in effecting a cure. What had I better do for her?—J. E. W., Kent City, Mich.—Your mare suffers from either coffin joint lameness or low down ringbone and it is doubtful if she gets well. Apply repeated blisters and give her rest.

Bruised Udder.—Heifer came fresh last September; lately she has been giving bloody milk from one teat; the first milk taken from quarter is quite white but the strippings are mixed with blood. I got some medicine and liniment from our Vet. which he thought would help her, but I fail to notice any improvement. She appears to be losing flesh. C. A. W., Fennville, Mich.—I am inclined to believe that you reopen the small blood vessel that broke in udder when you finish milking her; therefore, I would suggest that you use a milking tube; if you have none send 35c and The Lawrence Publishing Co., Detroit, Mich., will deliver you a nice one measuring 3½ inches long.

Kicker—Nervousness.—Four-year-old mare was broke to drive and has worked for nearly a year. I bred her last spring and since then she manifests a disposition to kick when in harness or every time I meet a horse on the road or one passes her. She has badly disfigured most of my vehicles. I find it possible to control her in shafts with a good kicking strap, but know of no way to control her in double harness. She never causes any trouble when worked on the farm in wagon, plow or otherwise. She is due to foal in about two months. H. M. B., Chico, Cal.—Being pregnant may have changed her disposition somewhat and, on account of her being so near foaling time, an injury might cause abortion; therefore you had better get along with her as quietly as possible. If head is checked high she cannot kick so readily. When such animals do kick severe punishment sometimes induces them to quit the habit; however, kindness and firmness is what most of them need.

Melanosis.—I recently purchased a mare that has what is called melanosis. I noticed a few small bunches around anus but that nothing more about it until lately, when I looked her over more closely and find many small bunches on lower side of tail. She is white color. Would you consider this mare sound? L. J. D., Pentwater, Mich.—Melanotic deposits are quite common in old white horses and are always considered an unsoundness, but if there are only a few on a horse and in a part of body where they do no harm and grow slowly it should not greatly depreciate their value. The cause of this ailment is unknown. The bunches should be cut out if they are doing any harm, if not leave them alone.

Mare Injured While Foaling.—What is the actual or possible cause of my brood mare's death? She was due to foal the 21st ult. and showed pain for one hour that evening between 8 and 9 o'clock, then stood up until 4 a. m. next morning when straining commenced and with the assistance of two men we took colt away from her. It was dead and colt came right. J. H. B., Hersey, Mich.—You failed to say when mare died. However, I imagine she died the result of injury either before or after foaling.

Hernia.—I have a yearling colt that has a small rupture situated a little back of navel which came on when he was four months old. This bunch has not increased in size since it came but I should like to know how to remove it? E. E. C., Paw Paw, Mich.—This small hernia may never do any harm, grow any larger, but a surgical operation is the only remedy.

Fetlock Joint Weakness.—I have a horse that is in good health every way but seems to have a weakness in ankle joint. When going up hill he shows it most; the joint knuckles over when he travels on rough roads or goes up hill. G. S. B., Boyne Falls, Mich.—This trouble is a weakness or luxation of fetlock joint, both ligaments and tendons are weak. A high heeled shoe will give some relief, also light blisters of cerate of cantharides or any one of the blisters that are advertised regularly in this paper will strengthen the ligaments of joint. I have obtained the best results from light blisters.

With the exception of the Kansas and Nebraska cattle marketed at Chicago, the average quality of the greater part of the cattle received from week to week is nothing to boast of, many of the steers weighing less than 1,200 pounds and being no more than mere "feeders." Great numbers of short-fed steers sell below \$6 per 100 pounds, and in many instances it would pay feeders to hold their cattle at least a month longer. Fat little yearlings are making the most money for stock feeders as a rule. It is generally conceded that the marketings of good cattle for the next three months will not be excessive, and there appears to be no good reason for such great haste in sending in half-fat cattle.

WILL YOUR HARVEST BRING FULL VALUE?

IT all depends on you — whether you make full value a possibility.

To prepare your soil—to plant good seed and plant it at the right time—to care for your fields while the grain is growing, all this is vital to farming success. **You know** it is vital and you use all your intelligence, all your ingenuity, all your energy to do things as they should be done.

How about the harvest?

That's when the reward comes. That's when you transform your season's thought and labor and watchfulness into gold.

Your harvest will bring you full value if you are prepared to harvest at the right time—just when the grain is ripe—and prepared with a machine that will get all the grain, whether standing, down or tangled, without delays, without breakdowns. A dependable machine in dependable condition is an absolute necessity.

In all walks of life we are guided best if guided by **known** truths.

It took years of expense, years of vexations and worries, for the farmers of the world to learn that they could always depend on the

**Champion McCormick Osborne
Deering Milwaukee Plano**

HARVESTING MACHINES

- depend on them for an easy harvest
- for a quick harvest
- for a harvest with least labor
- least expense
- a full value harvest.

Need we suggest that you let this known truth guide you? **You** don't want to experiment. You want a machine you **know** will give you a full-value harvest—this year and next year and through years to come. These six dependable harvesting machines are manufactured under conditions that insure superior quality in every machine. This accounts in a large measure for their world-wide popularity.

Buying a machine is not as simple a matter as it may seem—a number of things must be taken into consideration. You should know something about the mechanical principles—how the machine works. You should know something about the materials entering into the construction—something about the degree of skill in the workmanship—something about the responsibility of the company behind the machine.

The Champion, Deering, McCormick, Milwaukee, Osborne and Plano machines are equipped with every known improvement and mechanical principle that would in any way tend to insure better work in the field. The workmanship and materials are the best that can be secured.

This means that if you buy one of these machines you will secure one that is made to work successfully.

In building these machines, inventors and designers work together for the development and improvement of every principle and detail in construction, and hence it is possible for this company to offer you machines that represent the highest attainment in both design and construction.

In other words, when a Champion, Deering, McCormick, Milwaukee, Osborne or Plano machine is in operation on your farm, you can feel assured that it is going to do the work as it should be done. The designers work year after year in the field studying conditions, and the improvements that are being made from time to time place these machines in a class by themselves.

After working a whole year to grow a crop, you cannot afford to place your harvest in jeopardy—you cannot afford to put yourself in danger of unnecessary delays in the harvest field. In other words, you should have a machine that can be repaired quickly if anything should go wrong.

If you have one of these binders, there will be no occasion for worry, because every dealer handling one of these lines carries a full stock of repair parts. Under ordinary conditions, the machine will not break or get out of order—for each machine is tested and retested under far more trying conditions than will ever be encountered in the harvest field.

In the manufacture of these machines, the principle of construction is right—the materials are right—the workmanship is right—but, of course, all these things could not be done without an adequate organization—facilities to secure the proper raw materials and to employ skilled workmen and equip the manufacturing plants with the most modern facilities for turning out the machines. It is the thorough work in the selection of the raw materials and designing machines and the careful construction that lessens your responsibility when you go into the harvest field. Therefore, it behooves you not to make a mistake when you buy your binder.

Now, while you have the time, get ready for a full-value harvest. Call on the dealer. Ask him for catalogue of whatever of these six tested and proven dependable harvesting machines you want.

If you do not know a dealer near you, write to our Chicago office, or any of our branch offices, and a dealer's name and address will be sent you promptly.

Second in importance only to a perfect machine is perfect binder twine. No better twine can be made than Champion, McCormick, Deering, Osborne, Milwaukee, Plano and International in sisal, standard, manila and pure manila brands. These twines—and repairs that fit for all machines of the International line—sold by dealers everywhere.

INTERNATIONAL HARVESTER COMPANY OF AMERICA, CHICAGO, U. S. A.

(Incorporated)

WHITMAN'S

NEW MODEL STEEL BEAUTY HAY PRESS

NEVER FAILS



With or without self-feed positive pull back without spring. A complete line of power balers, hay, paper, wool, shavings, cotton hull and compress presses.

Our success with this machine has been simply marvelous. Thorough tests convince us that it is absolutely correct in principle. It is built entirely of steel. Has low bridge for horses to walk over, and no pull of team in crossing. Has large feed opening and long bale chamber. Warranted in every particular. We also make a full line of balers. For full information address the manufacturers.

THE WHITMAN AGRICULTURAL COMPANY, 6905 S. Broadway, St. Louis, Mo.

Three Daily Papers

For those who would like to have three daily papers a week, we have arranged with the New York Thrice-a-Week World so that we can offer it with the Michigan Farmer a year for only \$1.40; that is, both papers a year each for that price. Send orders to us or thru our agents.

THE MICHIGAN FARMER,
Detroit, Mich.



Are you one of the many who can hatch chicks but cannot raise them? More chicks die from Bowel Complaint and Cholera than from all other diseases combined, and yet these diseases can be prevented and cured by proper use of

GERMOZONE

the biggest seller in poultry medicine ever placed on the market.

Germozone is a tonic; a bowel regulator; the best cure for Bowel Complaint, Roup, Cholera and other poultry diseases. Most of these troubles originate from colds or some internal disorder, which, if taken in time can be quickly cured, but if neglected will frequently result in loss of the entire flock.

Germozone goes to the seat of the trouble and, unless the disease is in its last stages, usually effects a speedy cure and with absolutely no injurious after effects. Germozone is not the product of a minute but the result of years of labor in preparing a medicine for a specific purpose. Its great reputation—its general use among poultry-raisers the world over—proves its value. Buy it on our Guaranty. (Either tablet or liquid.)

Price 50 cents



GEO. H. LEE CO.,
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ONLY A FEW DAYS MORE

Buy a Queen
IN THE NEXT 10 DAYS



and take advantage of our special April discount prices on our entire line of Queen Incubators and Brooders. Reductions are from one-fourth to one-third off regular prices. These machines all have our latest improvements, and are sold with the Queen 5 year guaranty, 90 day free trial, and we pay the freight.

Building thousands of incubators and brooders in advance as we do, it is impossible to estimate exactly the number of machines of each style that will be demanded by Queen users. We have more machines of some sizes than of others, but we have included all at these clearing prices. They must be sold now. We do not carry over any machines.

Queens are the incubators of heavy hatches—the machines that are the quickest money-makers. Write us today asking for our large Queen book and Special April Sale Prices. We can guarantee to send you the incubator you want if you don't delay.

Address: Wickstrum, P. O. Box 22,
QUEEN INCUBATOR COMPANY,
Lincoln, Nebraska.

Greider's Book
On Poultry

Concise, practical. How to make money with poultry; information as to building, treatment of diseases, etc. Fifteen attractive chromos; sixty prominent varieties. 10c postpaid. Fine, pure-bred stock and eggs at low prices. GREIDER'S GERMOZONE—a sure preventive and an excellent disinfectant. B. H. GREIDER, Rheims, Pa.



125 Egg Incubator and Brooder Both For \$10
If ordered together we send both for \$10 and pay freight. Well made, hot water, copper tanks, double walls, double glass doors. Free catalog describes them. Wisconsin Incubator Co., Box 89, Racine, Wis.

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This handy tool to your neighbors? Wire fence stretcher, cutter and splicer; press; lifting jack; post puller, etc.—useful in a hundred ways the entire year. Not an experiment—a finely finished tool.
Leader Combination Tool
Sells on sight to every man. Thousands in daily use. Write today for special offer to agents.
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It Never Slips!
One Man Operates It.

Stretches all kinds of wire to the last post. The harder you pull the tighter it grips. Smooth jaws, cannot cut or injure the wire. On and off like a pair of tongs. By express prepaid, \$1.00.

NEVER SLIP STAPLE PULLER
Ours is the BEST
STAPLE PULLER on earth. Drive hook under staple, lift lightly and out it comes. By mail, 25c. Both tools by expr. prepaid, \$1.25.
Never Slip Wire Stretcher Co., West Farmington, Ohio

POULTRY AND BEES

THE GUINEA FOWL.

Its Care and Breeding.

People who mistrust the wandering habits of the guinea frequently obtain eggs and let the domestic hen raise a brood, thus insuring a home-loving habit in the young. But we have found older birds readily accustoming themselves to a change of habitation, altho, like the turkey, the guinea is best moved in the fall or winter.

If only a pair or trio are kept they may occupy the house provided for the regular poultry, and they will share the general quarters with little disturbance. Where several are kept an ordinary colony house may be put at their disposal. They will like it if the perches are placed extra high, and, if a convenient tree or outside perch is near they will avail themselves of the shelter provided only during extreme weather. Owing to their talent for sentinel duty, their quarters may profitably be placed near those of the other poultry. Their pugnacious disposition, also, makes them good protectors, as they will attack and drive off marauders which the other fowls flee from. It must be confessed that if kept in large numbers this fighting quality becomes troublesome, as they then become self assertive and require the other feathered brothers to clear the walk. Still, a half dozen may be kept with the other flocks with little inconvenience.

The sexes are hard to distinguish, and, while the male's wattles are slightly larger than those of his mate, he is most easily recognized by his general appearance, his important air, and his shriller voice. In the wild state the guinea fowl is strictly monogamous, but has degenerated thru civilization so that two females to one male is the custom, and even three are sometimes owned.

The guinea hen starts to lay the last of all her tribe. On the Michigan farm the laying hen we have with us always—or ought to, with modern feeding methods. During the latter part of March the ducks and geese claim our special attention; then, as the snow goes off last season's dried grasses and leaves are in evidence, and the turkey eggs must be watched for and protected. Then, after the strenuous hatching season for all the rest is over, come the guineas. Some day, late in spring, the first beautiful brown speckled egg appears, frequently in the nest provided for the other poultry. It is somewhat smaller than a common hen's egg, more convex at the large end and more pointed at the other. It resembles a miniature turkey egg in shape and color and in its being flecked with small brown spots.

The eggs have a peculiarly rich flavor, in some parts of Europe commanding high prices from epicures. In our own country they are highly prized by southern cooks, who claim the whites whip stiffer than hens' eggs and so make finer cake.

Securing Eggs and Incubating.
The number of eggs laid by the guinea hen has been somewhat increased by domestication until now 50 or 60 may be expected of her, about 30 in each of two lots. Frequently she will lay the first 30 in the nests provided, and then, as the old instincts become stronger, she will make a rude nest at some distance from the buildings and lay 25 or 30 more eggs before sitting. Part of these should be removed, for, altho sitting near midsummer, she will be unable to incubate so many, tho she may cover them, for the nest is apt to be deep and literally filled, like a pail, with eggs.

Fifteen is sufficient, and to remove the others without scaring her from the nest entirely requires care. The nest should not be approached until the guinea hen leaves it; then, with a long-handled spoon part of the eggs may be removed, disturbing the surroundings as little as possible. So acute are they that if a human hand touches the nest they are said to abandon it. They are also supposed to be able to count up to five, and at least that many eggs should always be left in the nest. The extra eggs may be hatched and the young reared by chicken hens, but nothing quite equals the natural mother.

Four weeks are required for incubation, and usually every egg is fertile. The young keets, when they appear, are tiny, beautiful creatures, resembling quail. They are incredibly active, quite wild, and soon after leaving the shell

will dart into the grasses and hide at the least alarm. They are much too active to stay very long in the nest, and the first hatched will be out and foraging about for themselves before the later hatched are out of the shell. In fact, herein lies the one objection to the mother guinea. She may follow her oldest offspring from the nest, leaving her work unfinished. Yet she sometimes returns, after introducing her enterprising young to their surroundings, frequently returning to her nest at night and then finishing the hatching of her hardy family.

Rearing the Young Naturally and "by Hand."

If hatched by the guinea mother the young keets require no feeding. She is a good forager and her mate a first-class helper. He comes to her assistance as soon as the young are out of the shell. In fact, he has loyally stood by all thru the tedious four weeks, and without his shrill note of warning the nest would have been hard to find. Now the two go to work industriously for the brood, ranging with them far and wide. A dozen or fifteen midgets dart here and there until someone appears, when they seem to make themselves earth, into which they, apparently, vanish. So skillfully are they hidden that the writer has more than once given up a whole brood as lost, only to have the mother exhibit them at her pleasure, some time later.

Guinea fowls prefer to rear their young, as they make their nest, at some distance from the farm buildings. At the back of the fields or on the edge of the woodlot they contentedly forage, occasionally bringing their family for a glimpse at civilization, then retreating to the more distant fields.

When the young have reached the broiler age, reared and plumped by the insects and seeds they have rid the farm of, they are usually brot to the farmyard and introduced to the feeding place. Frequently they are then ready for market.

If reared by chicken hens, or brot up "by hand," the young keets are treated much like young chickens. But it should be remembered that they grow very fast and are more active than young chickens. They therefore require more concentrated food and a greater proportion of protein in the ration. This may be furnished by chopped cooked meat, sour milk curd, or the insects they obtain if allowed plenty of range. They should have a variety of grains, such as furnished by good commercial chick feed. Later, wheat, buckwheat, corn and oats may be fed, as to the general poultry flock.

Saginaw Co. E. H. McDONAGH.

SOME PROFITABLE LAYERS.

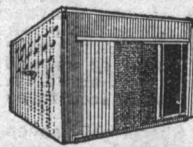
I have a mixed flock of 17 layers—four old hens and 13 pullets. The first of the pullets were hatched June 8, 1908, and they commenced laying the last of October. I paid no attention to the number of eggs until the opening of the present year. Between Jan. 1 and March 8, (66 days), the flock produced 525 eggs. With eggs worth what they have been the past winter I think poultry pays. I feed mostly corn and wheat screenings, with scraps from the table.

Bay Co. MRS. E. W. VAN DYNE.

Quality Counts.

Quality of goods and workmanship is a great factor in satisfaction with any kind of goods, but in no line is this more true than with lightning rods. Experience and statistics prove conclusively that good lightning rods, properly installed, afford absolute protection against loss or serious damage to buildings by lightning. But if either material or workmanship is poor or installation faulty this may not be the case. It is very difficult if not impossible, to determine from the appearance of the completed job whether either the material used or the workmanship of the installation is of a character to give that protection which alone makes the investment either a profitable or satisfactory one. This security can only be enjoyed by purchasing of a reliable firm that has demonstrated the high character and reliability of its goods by years of success not only in selling lightning rods but in protecting the buildings upon which they have placed them, from loss or damage by lightning. Dodd & Struthers, of Des Moines, Iowa, whose advertisement will be found in another column of this paper, is a firm of this character. Their goods are made of the best materials and are scientifically installed, and they are a perfectly responsible firm that has made good in a field where fraud and deception have been too commonly practiced. The farmer who patronizes this firm will be sure of a "square deal," and every prospective purchaser of lightning rods would do well to write them for literature and prices instead of closing a contract with some irresponsible agent who offers "something just as good for half the price." The best is none too good in any line, but this is particularly true with lightning rods.

Protect Your Chicks



They have the snug, warm, dry quarters in this Sanitary Brood Coop that keeps off the dreaded roup and makes them

Safe from Rats, Mink, Weasel, Lice and Mites

All galvanized iron and steel. No other brooder anything like it. Exclusive pattern made and sold only by us. Adds 100 per cent to profits, keeps down cost and expense of poultry raising. Shipped knock-down. Easy stored.

Write for free booklet today fully describing this coop; also our Metal Feed Coops, Combination Trap, Laying and Sitting Nests, Non-Freezing Drinking Fountain, Egg Carrier and Medicated Charcoal. Des Moines Incubator Co., 255 Third St., Des Moines, Ia.

\$7.55 Buys the Best 140-Egg Incubator over Made
Freight Prepaid
Double cases all over; best copper tank; nursery self-regulating. Best 140-chick hot-water Brooder, \$4.50. Ordered together \$11.50. Satisfaction guaranteed. No machines at any price are better. Write for book today or send price and save waiting. Belle City Incubator Co., Box 14, Racine, Wis.

Bee Hives, Sections, Foundation, Smokers, Etc. We keep everything the bees need, and all Root's goods. Send for our 1909 catalog. Cash paid for beeswax. Prompt attention given to your order. M. H. Hunt & Son, Condit St., Lansing, Mich.

RED BABIES—Rhode Island Red baby chicks only 15c each, \$15 per 100 and up. Prize winners Cincinnati, Chicago, Indianapolis, Kansas City, Milwaukee, Detroit, Toledo. Eggs \$2 to \$20 per 15. Owner CHICAGO KING, world's greatest Red male. High grade eggs and chicks to a few parties on a share basis. Half price. EDWIN R. CORNISH, Edwardsburg, Mich.

"MONEY IN EGGS"
S. C. BROWN Leghorns—My method and farm range has developed layers with vigor. My eggs produce layers. One-third fancier's price and better layers. \$1 per 30, \$2 per 60, \$3 per 100, \$5 per 200, \$7 per 300. J. E. McARTHUR, R. 3, Enfield, Ill.

STOCK and EGGS in Mich. best White, Silver, Golden and Buff Wyandottes, Rhode Island Reds, Barred Rocks, Pat. Cochins, Light Brahmas, White & Black Langshans. All varieties of Leghorns & Hamburgs. Pekin, Rouen, Cayuga, and Muscovy Blue Swedish White & Gray Call Ducks, Toulouse, Embden, African, Bronze & White China Geese. E. J. Haskins, Pittsford, Mich.

"RINGLETS" BARRED ROCKS, Direct New York winners, three matings. Eggs, 15 for \$1.00. J. W. SALLARD, Romeo, Mich.

R. I. REDS EGGS—15 for \$1.00; 25 for \$1.50; 50 for \$2.50; 100 for \$4.00. Winter layers. Mrs. Edith Park, Coopersville, Mich., R. 5.

BEST STRAIN R. C. R. I. Reds, Eggs each, A pens, 10 cents; B pens, 8 cents; C pens, 5 cents. Gray African Geese world's best eggs, 40 cents each. W. T. FRENCH, Ludington, Mich.

White Wyandotte Eggs from prize winning & A. 1 laying stock \$1.50 per 15 or \$2.50 per 30 eggs. A. Franklin Smith, Ann Arbor, Mich.

EGGS—Light Bred, White Wyandotte and B. P. Rocks \$1 a setting, \$1.50 for two settings. E. D. BISHOP, Route 38, Lake Odessa, Mich.

Barred Plymouth Rocks—Eggs for hatchling, \$1.25 for \$1.50; 50 for \$2.50; \$4 per hundred. Satisfaction guaranteed. Colon C. Lillie, Coopersville, Mich.

EGGS—M. B. TURKEY, PEKIN DUCK, BARRED ROCK, HUPP FARM, Birmingham, Mich.

MINORCA cockerels at \$1 and \$2 each. Am book- ing orders for P. C. pigs, sired by boars of extra breeding and great quality. R. W. Mills, Saline, Mich.

White Wyandottes—Eggs for hatchling. Price, 15 for \$1; 25 for \$1.50; 50 for \$2.50; \$4 per hundred. Satisfaction guaranteed. Colon C. Lillie, Coopersville, Mich.

S. C. W. Leghorns, Eggs 15 for \$1; 50 for \$2.50; 100 for \$4. Month old. April hatched chicks \$18 per 100; May hatched chicks \$15 per 100. GILMAN A. GREEN, Clarkston, Mich.

SINGLE and R. C. Black Minorca Eggs—\$2 & \$1.50 per 15, (Northrup stock). Fine large birds, scoring from 94½ to 95½. D. C. Huggett, Grand Ledge, Mich.

SILVER LACED GOLDEN and White Wyandottes and Barred Plymouth Rocks. Eggs \$1.50 per 15, \$2.50 for 30. C. W. BROWNING, Portland, Mich.

R. C. and S. C. RHODE ISLAND RED and Columbian Wyandotte Eggs, \$1 per 15. **BUELL BROS.**, Ann Arbor Michigan.

White Wyandottes, free range stock eggs \$2 per 45, satisfactory hatch guaranteed or eggs duplicated at half price. Jos. Neuman, R. 4, Dor, Mich.

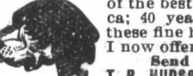
S. C. BROWN LEGHORNS. Our Egg Circle ready, it's free. Big Birds—Greatest Layers. 15 cockerels yet for sale. FRED MOTT, Lansing, Mich.

SINGLE COMB WHITE LEGHORNS—Eggs for hatchling. Price, 15 for \$1; 25 for \$1.50; 50 for \$2.50; \$4 per hundred. Satisfaction guaranteed. Colon C. Lillie, Coopersville, Mich.

Imported Japanese Pekins—the hardest and best layers of the duck family. Buff Turkeys, Embden and African Geese, bred from Chicago winners. Write your wants. ZACH KINNE, 3 Oaks, Mich.

DOGS.

FOX AND WOLF HOUNDS



of the best English strains in America; 40 years experience in breeding these fine hounds for my own sport. I now offer them for sale.

Send stamp for Catalogue. T. B. HUDSPETH, Sibby, Jackson Co., Mo.

COLLIES for Service—Two Registered sable and white prize winners and stock workers. No puppies at present. W. J. ROSS, Rochester, Mich.

FOR SALE SCOTCH COLLIE PUPS. Females spayed and kept till well. A. C. FREEMAN, Ypsilanti, Mich., R.F.D. 2.

LICE ON THE SITTING HEN.

Lice running around over the body of a hen causes intense itching and, in trying to get away from these pests, the hen forgets all about her desire to sit and deserts the nest. If strongly inclined to sit she may desert one nest and move to another, trying to escape her enemies. If a hen shows any sign of uneasiness be careful to inspect her body for lice and also the cracks and crevices about the nest for mites.

If either is found, thoroly dust her. Once more sponge off the eggs with a damp cloth and move to a clean place. Burn everything about the old nest and either disinfect or burn it.

Wage constant warfare against lice and mites during the period of incubation and the results will be a clean lot of chicks. It has been said that three lice will break up a sitting hen or kill a brood of chicks. This probably is not always true, but it is certain that a hen that starts to incubate with three lice on her body will undoubtedly have enough by the end of the hatch, unless properly cared for, to infest all the chicks and render the whole brood either very unsatisfactory or worthless. An ounce of lice powder at the beginning of the hatch is worth a good many pounds after the chicks are a few days old.

Illinois.

N. M. R.

TIMELY QUESTIONS ANSWERED.

Fastening Full Sheets of Foundation.

Early in the year Mr. Huffman, of Jackson Co., wrote an article about home-made bee hives. I have been making some according to his directions. Now I would like to know of him whether he puts foundation starters in the brood frames or not, and how he fastens same. Also would like to know when is the best time to examine for queen bee and how you would go at it to find the queen.

Osceola Co. SUBSCRIBER.
I, myself, use full sheets of foundation everywhere, in both brood frames and sections, and I honestly believe it would pay to do so even tho the foundation cost \$1 per lb.

There are several ways of fastening foundation in brood frames which do not contain a groove and wedge. I used to use a wax tube, which can be purchased from any bee supply house for 15c or 20c and which, if used just right, will, by allowing a fine stream of melted wax to flow along just where the foundation joins the wood frame, cement it quite firmly. But somehow I tired of this after the tube had become plugged with cold wax several times. Then I tried using a preparation similar to grafting wax, composed of rosin, beeswax, and lard in the right proportions to make it just right to handle. I would have a dish of this hot and, with a small brush, after being sure that the top of the brood frame was perfectly dry, simply paint a narrow streak, about 3/8-inch wide, down the center of top bar where I was to fasten the foundation. Then, after laying the foundation down flat on the inside of the top bar I would pass a hot, heavy knife blade along, pressing down quite hard and smoothing the foundation down, melting it just enough to cause it to unite with the coating of rosin wax previously put on. This is as good a way as any I have ever used but sometimes, if in a hurry, I simply grab that old broken case knife having a square end, stick it into the flame of a lighted lamp, lay the foundation down flat against the top of the brood frame and pass the hot knife along the edge, slightly melting it and causing it to enter the grain of the wood. Then, after heating the knife quite hot again, I take a piece of beeswax or old light-colored comb and press it against the hot knife, holding the point downward and passing it along, where the foundation joins the top bar, thus allowing the wax, as it melts, to drip off the knife and solder the joint. Lastly, I go over it once more with the knife, pressing down real hard this time.

Determining Whether Queen Is Present.

Now about examining for queen. It gets to be second nature, to a man work-with bees for years, to tell when a colony is queenless without having to look for the queen. Any good farmer could pass along a row of horses or cattle and tell the sick from the well ones at a glance, and that is the way with a row of colonies in the apiary. One in good practice has simply to have a glance, when the bees are flying good, to tell which colony is in perfect condition and which is not. When you look at a hive entrance, at a time when the bees are carrying in pollen, and see very few bees entering the hive with pollen on their

legs, or if they have only small particles while those entering some other hive are simply loaded down with it, you may be sure that that colony hasn't a good queen, if it has any at all. If the queen is active the bees will always be seen carrying in pollen, if it is to be had, for they need it to feed the young brood. The old bees, you know, are not fond of it at all. Then, somehow, when the colony loses its queen it also loses its energy, and you will really see workers which, instead of passing quickly in and out of the hive, lazily alight on the board in front, go towards each other and act as tho they were shaking hands and talking it over to see whether they had better go to work or not.

However, from now on there should be no difficulty in locating the queen and in making sure she is there. Until real warm weather appears she may usually be found on the center combs, but after the weather gets hot she is apt to be there only during morning and evening. During the heat of the day she may be found on the outside combs.

If there is uncapped worker brood in the hive, or freshly laid eggs, that is good evidence that a queen is not far off, but sometimes, as I did in two colonies last season, you may find eggs and some brood, (the brood is apt to be drone brood in worker cells), and yet there is no queen in the hive. This state of affairs is caused by a colony becoming hopelessly queenless and still having laying workers, and is a very hard problem to contend with. A queen, upon being introduced to such a colony, is, nine times out of ten, killed on sight. About the only way to do is to divide the colony and unite the parts with several good strong colonies. I never knew of a queen placing more than one egg in a cell, but I have found cells, when laying workers were present, which contained as high as ten eggs. If there was any way of catching these fertile workers and killing them we might successfully introduce a queen but, altho you may find one in the act of depositing eggs and kill that, there are usually several others in the colony and it would be next to impossible to find and kill them all. The eggs laid by fertile workers will most of them hatch but will only produce drones, thus, as no young workers are furnished, the old ones gradually die off and our colony is gone.

Trouble with Foundation in Hot Weather.

Now just a little more about the use of foundation. During extremely hot weather I have had considerable trouble when I tried hiving large swarms of bees on full sheets of foundation. The bees would slightly gnaw the foundation near the top of the wood frame and the heat would render the wax so soft that the foundation would break down out of the frame. Sometimes the bees would get so disgusted at it that they would swarm out and start for the woods again. The foundation, upon opening the hive, would be found in a crumpled mess on the bottom-board. In such times as these it is better to use starters about one inch wide, placing four frames of same in center of the hive when the swarm is first put in, and then, the next evening, after the bees have cooled down, quietly spread the frames containing starters and place between them frames containing full sheets. However, of late years I most always manage to have at least two ready-built brood combs that I can place in the center of the hive and, with these to support the main part of the cluster, I can fill in the rest with full sheets of foundation and have very little trouble.

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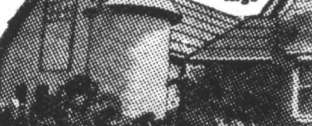
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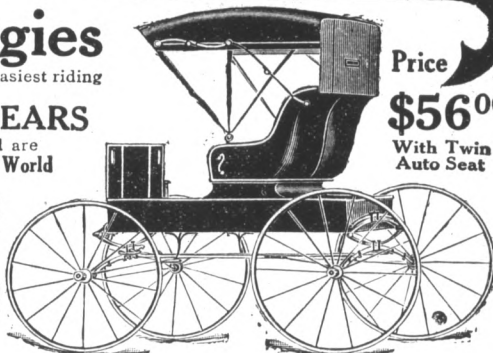
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 The Lawrence Pub. Co.,
 Detroit, Mich.

DETROIT, APRIL 17, 1909.

CURRENT COMMENT.

The farmers in centuries gone by suffered not a little from the invasions of hostile armies that trampled down their growing crops and confiscated their stores. The early pioneers of our own country suffered similar losses from the raids of hostile Indians, and even the older generation of southern planters have a vivid remembrance of similar losses and privations which they suffered when our country was in the throes of civil war. The farmers of today are fortunate in that they are not thus handicapped, nor yet likely to be. But they are nevertheless suffering from an invasion of a grave character, which many of them fail to recognize, to say nothing of appreciating the serious consequences to themselves or taking steps to check the progress of the invaders.

In a recently published statement Dr. Beal, of M. A. C., who is one of the leading authorities of America on botany, says that there are now 216 varieties of weeds in the state, as compared with 35 varieties in its earlier days, all of which are indigenous. Dr. Beal predicts that unless something is done soon to prevent this general invasion of noxious weeds, the number of varieties with which the farmers of the state will have to contend will double in ten years. Surely this is an invasion of which general cognizance should be taken by the farmers of Michigan. The most common route for the invaders to enter is with the seeds purchased for sowing upon the farm, particularly grass seeds. If every farmer would exercise greater care with regard to the purity of the seeds which he purchases one of the most common avenues for the spread of noxious weeds would be at least partially closed. If he is in doubt as to the quality of the seed offered, the purchaser should send a sample of the seed to Dr. Beal for examination as to its freedom from undesirable weed seeds. In addition to this Michigan should have some kind of a seed inspection law to protect our market from the seeds that cannot with safety be sold in other states and countries having such a law.

Another common means of spreading noxious weeds is the comparative indifference with which many farmers allow them to seed on their farms, to be scat-

tered by the winds and carried from their farms in the grain and forage sold. The average peaceful citizen of any community dislikes to gain a reputation for meanness by making a public issue of such matters, but the sooner the public spirited citizens of any community take upon themselves to do all in their power to prevent the wholesale spread of noxious weeds from this cause the better it will be for the next generation of farmers. More attention should also be given to the roadsides and the railroad rights of way. Weeds are often allowed to seed indiscriminately in these places when a word from an interested citizen would prevent it. It is the duty of the highway commissioner in each township to see that the weeds are cut within specified times along the highways under his jurisdiction, and the law applied with equal force to the railroads. The weeds are often neglected in both places when a pleasant suggestion on the part of the adjacent property owners would bring immediate results in having them cut.

The weed nuisance is even more pronounced in cities and villages than in the country. Noxious weeds are commonly allowed to seed on vacant lots and are spread in various ways to the adjacent country. Generally there are ordinances in existence providing that they be cut, but they are more often laxly enforced than otherwise. If there is no other way to have this nuisance checked the state should provide a means of inspection and supervision that would insure an abatement of the nuisance. This modern invasion is one which merits far more attention than it is receiving at the hands of the farmers of Michigan. The weed nuisance is serious enough now, but unless steps are taken to check it it will surely prove a far more serious handicap to the farmers of the next generation.

Just a few years ago, when the price of labor advanced in common with all other commodities, there was no little complaint among farmers that it was impossible to pay the advanced wages which were demanded and make a living profit from the farm. But with the increased ability of all classes of wage earners to buy their products, the farmers of the country found that prices of farm commodities advanced proportionately with wages and, with a more general use of modern labor-saving machinery, this great class of producers have been able to make a larger net profit from the conduct of their farms than ever before in the history of the country. Since the time referred to it has not been the price of farm labor that has been complained of so much as the supply. But as all things adjust themselves to conditions which long obtain, the farm labor problem has in a great measure solved itself and there are few farmers who would care to see a return of cheap and plentiful farm labor with the attending condition of low prices for farm products and a general stagnation of business which characterized the period when the farm labor problem was a common subject of conversation and complaint.

That the scrub animal is gradually giving place to one of better breeding on the farms of the country is a matter for sincere congratulation. That the keeping of better stock is also having a wholesome influence in the better feed and care given ordinary farm stock is a natural result, and apparently one which obtains in this case. The April number of the U. S. Crop Reporter gives a summary of an investigation of the condition of farm animals in the country on April 1, and the losses suffered on account of disease and exposure. These figures show that the losses from disease and exposure during the past year were in nearly every case below the ten year average while in the case of every kind of live stock the condition on April 1 was noticeably above the figures for the ten year average. This is good evidence that the farmers of the country are feeding their animals better during a season of high priced feeds than they have fed them for a period of ten years in which the average price of grain has been far below the present price, and during which period present prices for grain feeds have never been maintained for so long a time, if, indeed, they have ever been equalled on the average.

These figures mean something to the live stock industry of the country. They mean that the average farmer is learning that one animal well fed and cared for will return a larger profit than two animals that are fed upon a maintenance

ration alone or that are given poor care even though fairly well fed. They also mean that the average farmer has learned something of the economy of good stock, for it is only under favorable conditions that the superiority of well bred stock is prominently demonstrated. The pure-bred scrub is little better than the ordinary scrub, if as good, because the "rustling" characteristic has not been bred into him thru the application of the law of the survival of the fittest for generations. But the well fed animal of good breeding is so much superior to even the pampered scrub as to make a comparison between them an object lesson of value in any community.

With wheat frequently making a new high mark at the leading markets, due to a very apparent shortage in the available supply, those who have a harvest of this staple cereal in prospect are to be congratulated. The national crop report which appears in another column indicates that the condition of the wheat crop of the country was more than nine points below the average condition on the same date last year and nearly 4½ points below the ten year average. Observation extended over a considerable portion of the lower counties of the state would seem to indicate that the present condition of this grain in Michigan is rather higher than is indicated in the national report, in which the figures for Michigan are given as 75, compared with 82.2 for the country. Of course, the production of spring wheat may be materially augmented by prevailing market conditions, yet it is a difficult matter for farmers in the spring wheat section to increase their acreage materially at this season of the year. But it is practically certain that the grain will bring a good price, not alone because the harvest season will find the market more than ordinarily bare, but as well because of the high price of other foods which might be in a measure substituted for wheat, particularly in the foreign countries where the shortage is felt most keenly.

Potato prices have reached an extremely satisfactory point for those who yet have the tubers to sell. This market has verified the forecasts made in the occasional comments which have been devoted to it in these columns. The extreme high range of prices will doubtless stimulating the planting of large areas of potatoes this year; but as beans are also selling high, this great Michigan staple should not be neglected during the coming year; and the generally high price of all grains will make it necessary for the provident farmer to grow a liberal acreage to maintain his live stock for the coming year, so the profitable balance between the staple crops will naturally be pretty well maintained so as to insure an even and profitable market for the product of Michigan farms for the ensuing year.

HAPPENINGS OF THE WEEK.

Foreign.

Marion Crawford, the novelist, died at Sorrento, Italy, April 9, from fevers, attended with bronchial and pleuritic complications.

The guayule rubber industry of Mexico has come under the control of the rubber trust by the purchase of 4,000,000 acres of land devoted to the raising of the rubber plant.

Santos Dumont, of France, conducted a successful experiment with a new monoplane last week by covering a distance of a mile and a half at a height of from 90 to 100 feet.

Considerable damage is said to have been done by an earthquake shock which lasted about a minute at Sundsvall, Sweden, last Saturday morning.

President Roosevelt left Suez on the steamer Admiral last Saturday. The boat will stop at Aden and Mogadiscio before reaching the end of the water journey at Mombasa, the terminus of the Uganda railway. The distance from Suez to Mombasa is 4,108 miles.

A newly invented wireless telephone was tried out in France last week. It was possible to converse with the greatest clearness over a distance of thirty miles.

Ex-President Castro, of Venezuela, who recently sailed from France to the Danish West Indies where he purposed to remain till he got in touch with affairs in his native land, has failed in his program as the Danish government gave orders not to allow him to land on the islands. He was therefore put aboard another vessel and shipped back to France.

The American cruiser North Carolina, which was to go to the Caribbean waters to look after the American interests on and around Venezuela, is returning to Havana with friends of Ex-President Castro on board.

The depression in the Atlantic shipping trade has prevented either the Cunard or the German steamship lines from paying dividends during the past year.

A school has been established in Germany for the training of men for handling dirigible air ships. The course will cover

a period of three years and the school opens this coming October.

The Pope continues firmly in his former attitude towards France, not recognizing the separation of the church from the state which was consummated thru legislation some two years ago.

National.

Unofficial reports are current that Crazy Snake, the Indian chief who has been giving trouble in Oklahoma, is dead. The 80th anniversary of General Wm. Booth, of the Salvation Army, was celebrated in America and England last Monday.

The New York Assembly is considering a new insurance bill which modifies the recent stringent legislation that was passed in that state, the concessions being favorable to the domestic companies only.

Last week the house of representatives passed the Payne Tariff Bill by a vote of 217 to 161. On Monday the measure was presented to the senate for the consideration of that body. The senate committee on tariff changed the bill so as to place the burden of indirect taxation upon luxuries and reduced the duties on necessities.

The largest ice jam in the history of any man living along the Niagara River, has been witnessed there during the past two weeks. Both above and below the cataract the ice is piled many feet higher than it has ever been known before. Many of the bridges across the river, and the electric lines along the Gorge Route have suffered damage to the extent of over a million dollars.

The operators of the anthracite coal mines are preparing to make a cut of one-tenth in the wages of the workmen.

Nearly two hundred printers, representing the local union of the north central states, are in session this week at their semi-annual meeting.

Arrangements have been made for a twenty-four hour race between the scout cruisers Chester, Salem and Birmingham. The race will begin at Newport, R. I.

Fresh outrages have begun in the tobacco districts along the border of Tennessee and Kentucky. Gov. Patterson, of Tennessee, has been called upon for state troops to protect the growers in several of these districts.

Fruit growers around Roanoke, Virginia, state that their crops were ruined by the recent cold weather prevailing in that section.

CROP AND MARKET NOTES.

Eaton Co., April 10.—Election day, and the day following were warm and spring-like, and one could almost see things grow, then came a thunder-storm, and next day a high wind, and a drop in temperature. The 9th it snowed all day, but melted as fast as it came, until towards night, then it turned colder, and by dark there was three inches of snow and we had a cold night. It is warmer this morning, but has a wintry look. Some plowing has already been done, but not much, and this spell will delay work. There was an unusually long run of sap this year, and a large amount of fine sugar and syrup was made. We need rain badly, as the soil is too dry for grasses and grain to start off vigorously. The wool market has opened, and buyers are going out among the farmers trying to buy. Some had to sell for 15c last year, and think they can even up on the matter a little now, so they are holding for better prices. Buyers are offering from 23@27c. Wheat is back to \$1.20@1.25; beans, \$2.15@2.20; hay, \$7.50@9; potatoes, 70c; hogs, \$5.75@6.50; calves, 6@7c; butter, 20c; eggs, 17@19c.

Lapeer Co., April 12.—Ground is being worked this week for oats and barley, none sown yet. Spring is somewhat backward. Surface of land was frozen nearly all last week. More potatoes will be planted this season than ever before. All live stock wintered well. Some are shearing sheep now. Milch cows are in good demand, selling at from \$30@75 at auction sales. Horses are very scarce and high in price; teams have been sold for \$500. Good time to sow clover seed, price, \$4.50@5 for red; other produce in good demand at following prices: Wheat, \$1.30; oats, 51c; rye, 77c; barley, \$1.25; beans, \$2.20; corn, 75c; potatoes, 70c; hay, \$6@8 per ton; eggs, 16c; dairy butter, 22c; creamery, 30c. Above prices are from farmers to speculators.

Kent Co., April 7.—Grass is already greening up. Old pastures and timothy meadows have greened considerably during the past forty-eight hours under the influence of warm rains. With potatoes at 90c per bu. in the local market, late inquiry by Uncle Sam, "What is the matter with the farmer?" seems to be reversed. Who stayed the great financial panic a year ago and sustained the stability of the country, but the farmer? Milch cows constitute the bulk of the trade in cattle these days. Spring pigs are fully a month late this year.

Northern Isabella and Southern Clare Co.'s—Fine winter weather, with scarcely any frost in the ground. Farmers attending the State Round-Up at Mt. Pleasant by the score. Farmers getting their fencing ready for spring. Good demand for cows and young stock. Wheat \$1.12 in Clare market.

NATIONAL CROP REPORT.

The crop reporting board of the Bureau of Statistics of the United States Department of Agriculture estimates, from the reports of correspondents and agents of the Bureau, that the average condition of winter wheat on April 1 was 82.2 per cent of a normal, against 91.3 on April 1, 1908, 89.9 on April 1, 1907, and 86.6 the average condition for the past ten years on April 1. The decline in condition from December 1, 1908 to April 1, 1909, was 3.1 points as compared with an average decline in the past ten years of 6.0 points.

The average condition of rye on April 1 was 87.2 per cent of a normal, against 89.1 on April 1, 1908, and 89.2 the average condition for the past ten years on April 1st.

Magazine Section

LITERATURE
POETRY
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MICHIGAN FARMER
AND *LIVE STOCK*
PUBLISHED WEEKLY
JOURNAL
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The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

AN ARBOR DAY WITH UNCLE BEN.

BY DWIGHT S. COLE.

Warm spring showers and sunshine had warmed the ground and vegetation had started into new life. Brother James and I were spending a few days at Uncle Ben's.

We had been reared among the pines and cedars, where yellow sand in the uplands and black muck about the creeks and swamps constituted the soils with which we were acquainted. Our knowledge of deciduous trees was limited. During former visits we had learned to know the beautiful and valuable sugar maples, and to enjoy the fine sugar and delicious syrup which Uncle Ben made every spring.

Uncle Ben, whose fine large farm with good buildings and equipment attested to his prosperity, was more than ordinarily well endowed with keenness of mind and perceptive faculties. The farm and home site were particularly attractive in summer. Well-selected and judiciously-located native trees, with wide-spreading tops gave the farm and buildings a charming setting and afforded a comforting shade for the stock in summer's hottest days.

The surface of the farm and vicinity was gently undulating, with but few swampy or untillable spots. A dark, heavy loam covered a dense clay subsoil. Uncle Ben bot the farm years ago. A considerable portion of it was covered with a dense growth of natural unbroken forest. The trees of this native forest were all deciduous and embraced a wide variety of our best known hard-woods—such as maple, beech, oak, ash, walnut, hickory, etc.—with several valuable soft-woods—such as basswood, elm and yellow-poplar.

As he cleared the land Uncle Ben had carefully observed these various kinds of trees. He knew their above-ground characteristics and their peculiarities of root growth. He was thus able to select trees adapted to low, wet ground, to knolls and dryer places, and to give each kind its proper setting.

We received a warm welcome upon our arrival. After seeing the barns and stock, we were called to the house to partake of supper, which Aunt Susan had prepared for us—of which hot biscuits and warm maple sugar formed a very seasonable and appetizing part.

Uncle Ben had saved enough thrifty hard maples in his wood tract to enable him to make enough syrup each spring to supply their family plentifully for the year, and in good seasons he sold enough to maintain the equipment in good condition from year to year, pay the taxes on the land and timber values, and to pay a fair compensation for the labor involved. The season comes at a time when there is little else to do.

After supper we retired to the living room when Uncle Ben asked Cousin Henry to crack some nuts. While Cousin Henry was absent cracking the nuts, Uncle Ben, who seemed to be enthusiastic upon the forestry question, remarked: "Tomorrow will be Arbor Day, and we will endeavor to observe it in a fitting manner. Arbor Day has long been established in many of the older-settled countries, but it has not been generally or widely observed in this country until recent years. In most European countries the native forests are practically gone and their people have long been accustomed to planting and caring for trees for their timber value as well as for ornamental purposes.

"On the other hand, our country had such vast tracts of native forests, and timber values were so low, as to cause the early settlers to look upon these fine forests as of little worth or even as an encumbrance upon valuable ground upon which they wished to raise crops. Accordingly vast quantities of our most valuable native forest timber have been wantonly burned up to clear the land for

farms. We now see the folly of this. "No other thing can so cheaply and wastefully produce these attractive surroundings as well-chosen trees harmoniously arranged. Our people have authorized the governor to designate a day in spring for planting trees and shrubs;

IN PROTEST—BY JOHN E. DOLSON.

In life's glad flower time I have wandered here
Thru primal forests, reaching to the verge
Of the horizon; forests green or sere,
Somber and grand, vibrating to the surge
Of Nature's pulse; the majesty and might
Enthroned within the gnarled boles' massive girth,
The deep long vistas, darkening into night,
Seemed coexistent with the life of earth.



Here I have passed the summer hours away
'Neath great green Gothic roofs toward heaven flung,
With the Primordial satisfied to stay
While to my heart Creation's hymn was sung.

Few years have passed since then; but now I stand
And look upon a scarred and desolate waste
Of worthless, wind-swept, brier-infested land
By Mammon worshippers and human Ghouls defaced.

Once grew God's garden in this nightmare place;
Torn tops and blackened stumps alone remain,
Work of a gold-enamored grasping race
That knows no larger way of life than gain.

Oh, why destroy within a single day
That which at History's dawn was more than old?
Shall not the curse of outraged Nature stay
With him who loots her palaces of gold?



it is called Arbor Day—meaning tree day. Some weeks previous to the day selected a proclamation is issued urging the people to observe the day, properly by setting out and caring for trees and shrubs for ornamental purposes.

"If the day were properly observed a marked improvement in the beauty and attractiveness of our landscapes, and particularly of our homes, would be effected. The mere setting out of trees and shrubs in a careless, indifferent manner, after which no further attention is given, does not bring the desired results. On each Arbor Day, new trees and shrubs are set and those set in previous years should be carefully trimmed and looked after.

"The rural homes in this vicinity are quite destitute of attractive surroundings. The early settlers almost hated trees. They cleared away every vestige of the native forests about the homes. Their children failed to appreciate the value of improved surroundings and so the homesteads stand as you see them.

"Our home site here was stripped of all its original forest trees. The beautiful trees you now see about the home site, along the roadside, bordering the farm lane, and elsewhere, have nearly all been planted and cared for by me—except that, since my boys here have been large enough, they have enjoyed assisting me in this pleasant work.

"I see Henry is coming with the cracked nuts. These nuts cost us nothing but the gathering. The trees were planted years ago and are now rewarding us. In most seasons the yield is so large that we gather and sell a considerable quantity at fancy prices. They are sure of a market for all we can grow at prices which make the children happy, as they have the money.

"The timber value of these trees may surprise you. The wood of the black walnut tree is very highly prized for cabinet work, picture frames, etc., while the timber of the hickory trees is the best kind of material for the handles of axes, hammers, and like tools, and for wheels for carriages, automobiles, etc.

"About 50 years ago, a farmer of more than common foresight who lived a little distance from here, gathered a quantity of black walnuts from a large, thrifty tree of good shape. He planted them with outer shucks on along the roadside that fall. Half a dozen or more were planted in each alternate corner of the old rail fence which then stood there. They were covered with two to three inches of earth and left. It was an easy matter to plant the row along the end and one side of the farm—three-fourths of a mile—in less than half a day.

"By planting several nuts close together, the young shoots which they produced protected each other. They grew straight and tall. Side branches do not develop readily where the young shoots are close together. For some years after planting, the ground about the little trees was cleared each spring. All side limbs were carefully cut off for several seasons to cause the growth to be concentrated in the top of the shoot. From time to time some of the weaker of the little trees in the thicker clumps were cut off at the ground and killed so they would not hinder the growth of the stronger trees. Thinning was continued until the strongest and best shaped tree in each clump attained a diameter of about two inches at the base. The others were cut off at the surface of the ground and killed.

"For ten years the trees had to be protected from the stock, and receive a little care each season. Since then they have been given no attention worth mentioning. Walnut trees are deep rooted. The tops are open. Most farm crops will grow under them—grass doing nearly as well as in the open.

(Continued on page 452).

THEODORA—BY IRMA B. MATTHEWS.

Chapter I.—The Beginning of Trouble.

"I do not know just how to explain it to you; it is a bad business."

The speaker, a gray-haired man of years, fumbled among his papers for a minute without meeting the eyes of the two young people before him. Then his gaze wandered around the spacious library furnished with everything that money could purchase that would make for comfort. Bookcases lined the walls, filled with many a choice volume, and above hung costly paintings. It was the room of a man who had denied himself nothing.

The silence became unbearable at last and a youth sitting in an easy chair at the end of the room moved impatiently.

"I fail to see what there was about my father's affairs that you should hesitate to tell his children," he said at length. "Only his death was so sudden, so unexpected to us all that—do you mean that he was not prepared, that his affairs were not in shape? I do not see as that would matter so much for there are only us two, but I was under the impression that father made a new will years ago, shortly after mother died."

The lawyer, for such he was, forced his gaze to meet that of the speaker. He was good to look upon, this youth who had but barely reached man's estate, altho the lawyer as he looked felt, rather than saw, that his dark eyes made his face look a little too pale and once or twice while speaking he gave a short hacking cough that caused him to look at him more sharply. On a stool at his feet, leaning eagerly forward to catch every word from the legal gentleman, was a girl of eighteen. The black dress that she wore made her complexion look more pink and her eyes more blue. A greater contrast than she presented to her brother could hardly be found and many had commented on it.

"Your father's will was made as you think but—"

"Then why not make us acquainted with its contents at once?"

"Because it is no use. Your father died bankrupt."

"Impossible!" the young man exclaimed in astonishment; "My father, the owner of millions, died a pauper! Is that what you mean?"

"It is about what I mean and no one could have been more surprised than I was when the blow came. It was that that caused your father's death. He made a bad investment and staked his whole wealth on it, he who had always been so careful before, and it sunk him, that's all. It is a common enough story. I shall never forget that day he came into my office, broken and aged, and said: 'I am a ruined man.' The stroke followed that night and I never saw him again alive."

The girl leaned forward. Her face was drawn and she spoke in a low tense voice that startled her hearers, altho it was scarcely above a whisper: "His name, his good name! Tell me, did our father's name suffer?"

"No. He harmed no one but himself and you."

"Thank God. Oh, thank God, Don, that we still have our good name. What matters the rest?" and she laid her head with a sob against her brother's knee.

He smoothed her hair with a hand that trembled as he answered: "I do not quite seem to understand what it all means yet, Dora, but there could be no disgrace attached to father."

Mr. Dingham felt his own eyes grow moist as he watched the two. "I most made a blamed fool of myself," he said savagely afterward; "Me, with my experience, a man of my years who thot he was proof against anything."

At length the youth spoke again: "It will be best for you to tell us just how things are. Will there be nothing at all?"

"Nothing of any importance. We may be able to get a few hundred dollars out of the furniture here; everything else is gone." He wondered what a few hundred would mean to these two whose every whim had been gratified by an indulgent father.

The girl spoke again: "Never mind, Don, we have each other and we can work."

"Dear little sister, you were rightly named. I am sure you have always been God's best gift to us, but I am afraid you hardly realize yet what it means to have no home and to work for a living," he said sadly: "How can you count your

pennies, Dora, when you have never even counted the dollars?"

"I can learn," she answered bravely; "but you! Oh, Don, you can not even go back to college, can you?"

"No, that dream is over," he said quietly.

"I have also found," said the lawyer, who was fumbling among the papers he held, "that there is a small piece of land in California deeded to Miss Theodora. I dare say it is not worth much, but I will write about it at once. I will remember the day your father bot it! It was like many of his investments, showed more heart than brains."

The young people both looked up with interest and, seeing this, he continued: "A young woman in deep black came into his office one day when I was there and begged him to buy it. She said it was a good place but she told a pitiful story about losing her husband and how she had exhausted all of her means bringing him home, and this place was all that now stood between her child and herself and starvation. Your father bot it, altho I told him it was probably bad for nothing. 'Never mind,' he said: 'I will give it to Dora and perhaps it will be the means of bringing a blessing to her someday. Who knows?' Well, if it is worth anything at all it may help you a little now."

"Dear father," the girl murmured with shining eyes; "it was like him."

"It was," the lawyer acknowledged; but he was looking at it with different eyes than what the girl was.

"It would not matter if it was not for Dora," the young man mused; "but it seems as if I cannot bear to see her poor. I shall work as soon as I can find something to do, but I do not know what it will be!"

Again he gave that short cough that drew a look of sharpness from the lawyer ere he answered: "There will surely be some way. Have you no relatives?"

"I believe we had a few that claimed relationship when we were rich, but I hardly expect them to remember the relationship now. No, we have no near relatives. We are alone, the little sister and I."

The man of law began to gather up his papers. "Well, you can stay here a little while, until things are settled, and there will be time to make up your mind. Then we will go over the house and you can pick out what you want to keep and the rest can be sold. Meantime, Donald, if you will just go over these papers with me. I want you to see just how everything is."

He moved toward the table and seating himself began to spread them out before him. Donald followed, and Dora, thus left to herself, stole quietly out of the room. They did not miss her until the lawyer came to take his leave, and when Donald went to look for her he found her seated before their mother's picture.

She looked up at him. "I am glad that mother cannot know, Don, aren't you? She made so many plans for us."

"Yes, dear," he answered as he drew the girl down upon the couch beside him; "and yet think how pleased she would be to have such a brave daughter."

"I am not brave, Don, and I don't suppose I shall like being poor a bit, but there are other things so much worse, and I am sure God will care for us and it may prove a blessing after all. 'Whatever is, is best.' You remember, Don, that was mother's favorite expression."

"I am afraid the silver lining to this cloud will be hard to find," answered her brother bitterly.

"I am glad that mother was so practical that she would have me taught to cook and sew. I can at least cook your meals and sew on your buttons, Don. I remember what mother said when I did not want to learn those things: 'It will take but a short part of your life, Dora, and if your knowledge does you no good it will not harm you, but nothing could recompense you for it if you needed it and did not have it.' How true it is. We will make us a nice little home somewhere, Don, we will not need a big one, just you and I."

"It will have to be a very small one, Dora, for there will be but little to live on until I can get to work, and then I dare say I shall not get as much a month as you usually spent on one gown."

"I shall not need many gowns now," she answered bravely, "for I shall not go out any."

Don listened and thot that he should

hate the world in general when he remembered that she would probably not be asked to go out, for he knew more of the ways of the world than she and he remembered how quickly the families of other men who had failed dropped out of the society that had known them so well. He saw that she did not realize this, and he would not dampen her spirits by telling her. Besides, there was something that was troubling him far more at the present time and he wondered what it foreboded. That morning their old family physician had said to him lightly, but with a lightness that did not conceal the anxiety in his tone: "I am coming up to look you over in the morning, lad. You don't look quite rugged enough; I am afraid you have been studying too hard."

He knew that he felt weak and listless and, come to think of it, he had felt so for some time, but it had not alarmed him. But what did Dr. Allen mean? He was thinking of this and wondering what would become of Dora if anything was to happen to him. She knew nothing of this, however. She thot his thotfulness was wholly owing to the loss of their money and strove to cheer him.

Poor Don, she thot, it is hard for him to give up all of his ambitions and have to settle down and work in some pokey office. She little knew how hard the work in some office would be to get. I wish I could earn money, but I do not know anything well enough. I can play and sing, but I could not teach music; I can paint a little, but no one would buy my pictures; and so there is nothing I can do but be brave and cheerful, and I will do that and trust God with the rest, just as mother always taught me, and she leaned against Don as thot seeking support there.

How little we know our own natures until they are tried. A few hours later the nature of Theodora Hampton awakened and she emerged from the realm of girlhood into that of womanhood, and, instead of being led, she really became for the time the leader.

Just now, however, as each were busy with thots of their own, she leaned against Don like the tired child that she was and, when at length he aroused himself, he found that she had fallen asleep. He laid her down carefully and, covering her, left her to rest.

"It will do her good, poor Sis! It has been a hard day for her." Then he went to his own room to walk up and down until he was quite exhausted.

Chapter II.—New Plans.

Theodora slept late the morning following the interview with her father's lawyer. Perhaps it was because it had been late before she retired and still later before her confused brain had again allowed her to sleep. But after a time she forgot the problems she was trying to solve, or rather lost them for a time in a troubled unconsciousness.

She thot of it the first thing when she awoke. It seemed more like a nightmare to her now than anything else. She had never a single care or sorrow until her mother died four years before and then her father and Don had done everything in their power to make up the loss to her. They had always been a very devoted family and it was a terrible shock when the father had been suddenly snatched from them. He had come in at night complaining of not feeling very well and had gone at once to his room. The next morning they found him unconscious and he never spoke to them again. Don was summoned but his father did not know him, and now another blow had fallen. They must face the world as beggars.

"But we have each other yet; it might be worse," still insisted the girl stoutly as she slipped from the bed and began to dress.

Yes, they had each other yet.

Breakfast was over and Dora was in the library when the physician arrived.

"Where is Don?" he asked. "I have come to see him."

Dora looked up with startled eyes. "Don!" she gasped. "Tell me, Dr. Allen, is there anything the trouble with Don?"

"I hope not, at least nothing serious," he answered soothingly; "but I want to look him over."

With a sinking heart Dora went to call her brother. She scanned his face eagerly and wondered why she had not noticed how pale he looked before. After she had seen him enter the library she went out on the piazza and paced up and down. I must see Dr. Allen, she thot, and I will surely not miss him here.

"O, God," she prayed, as she walked

up and down with clasped hands beseeching in agony: "O, God, do not take Don from me!" Over and over she repeated it. In times of great agony the most simple words are the only ones we can think of, and really they voiced her whole desire.

Meanwhile behind the closed doors or the library Dr. Allen was pursuing his investigations. He asked but few questions and the examination was soon over.

"Well," Donald questioned as he looked bravely into the face of the physician.

"It is not so bad as I feared and can, I believe, be easily remedied. No more college or indoor studies, however. You must take that little sister of yours and hie yourself to California and live in the open air. If you follow my instructions you will probably die of old age."

"And if I refuse?"

"Your life will be numbered by months instead of years, but why should you refuse? There are only you two left and I think I know Miss Dora well enough to be sure that she will willingly go with you to the ends of the earth. One thing more," and he paused with his hand on the door, "the sooner you can go the better." Then he went out without another look at the face that had grown so white and still.

And this was to be the end? It did not matter so much, only what was to become of Dora? The thot wrung a groan of agony from the closed lips that had not been there for himself. How could he provide for her?

"Well, well," said the doctor, as he saw Dora's pale face; "Are you sick, too?"

"No," she answered, clutching his arm; "but Don!"

"Tut! Tut! child, don't look like that. Don will be all right when he gets away from this climate. I have ordered him to California and I shall order a certain young lady to go along and look after him."

"Must he go?"

"If he lives, yes," answered the physician, puzzled that her first question so closely resembled Don's. "Will that be such a hardship for you?"

"Dr. Allen, is it possible that you have not heard about father?"

"Heard what?"

"That he failed. That he has left us with nothing."

"It cannot be true."

"It is. Mr. Dingham told us yesterday."

"My poor child! My poor child! I will see you again," and then the doctor hurried away, for he could no longer bear the look in Dora's eyes.

She turned and went slowly into the house. She could not see Don yet. She must have time to think first. It was some time before she could calm herself enough to look directly at this thing that had come to her. One thing stood out in her mind distinctly: Don must go to California. Put how? A few hours before she would have said it was the simplest thing in the world just to pack some clothes and go, but now everything was changed for them.

At length she took her burden to the place she had always been taught was a sure refuge, and as she prayed for guidance a single sentence uttered by the lawyer the day before flashed thru her mind with startling distinctness.

"I will give it to Dora and perhaps it may be the means of bringing a blessing to her some day, who knows?"

She sat straight up and thot for a few minutes. Yes, the place was hers. Had not Mr. Dingham said so? And what was to hinder Don and she from going there to live? As soon as the idea had flashed thru her mind she became active, and from that moment her energies awoke and she became a new Dora. Hastily donning a street dress she left the house without disturbing Don and went straight to the office of Mr. Dingham. He looked at her in surprise.

"What can I do for you?" he asked.

"You told me yesterday there was a piece of land in California deeded to me, did you not?"

"Yes, and I have written to find out what I can about the land and its salability. I will do my best for you, but I dare say it will bring but a small sum."

"But I do not wish to sell it?"

"What is that?" the lawyer asked in surprise.

"I do not wish to sell it. We must go there to live, Don and I," she said with trembling lips.

"What is the meaning of this, Miss Dora?"

Dora told him what Dr. Allen had said. (Continued on page 450).

Some of Our Wild Flowers—2.

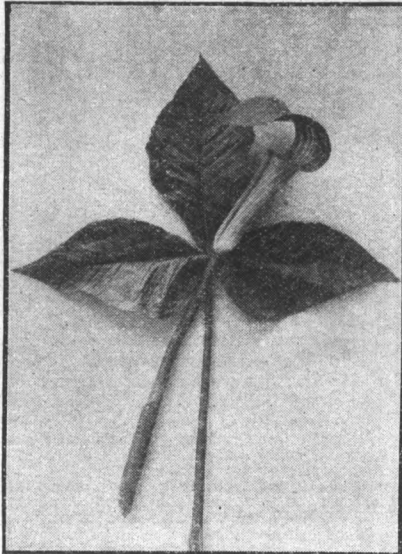
By Eva Ryman-Gaillard.

Jack-in-the-Pulpit—Indian Turnip. (*Arisaema triphyllum*).

Few people, old or young, need an introduction to Jack-in-the-pulpit, for he takes possession of our moist woodlands during March and April and stands up so bravely in his odd little green, or green-and-brown-striped pulpit that he is one of the first of the "flower-people" a child learns to recognize.

An odd flower this, for the spadix inside the hooded spathe has the tiny, true flowers clustered around the very base, making it look as tho the preacher had tumbled into his pulpit head first.

One glance at the flower shows the reason for its being called Jack-in-the-pulpit, but one must see the round, tuberous corm from which it springs to understand why it is called Indian turnip. The root



Jack-in-the-Pulpit, or Indian Turnip—A Garden-grown Specimen.

is so acrid that one who bites it will be long in overcoming the blistering, burning sensation produced, but the Indians knew that cooking destroyed the acrid properties and they used the roots as food.

This is one of the hardest and most easily transplanted of our wild flowers and, if removed to a semi-shady place in the garden, will appear each spring. The little preacher will bring us his sermon of cheer and pass on, leaving two tall, three-part leaves and a stalk of seed berries (which turn to brilliant red in the fall), to remind us of his visit. The plants may be easily located by these berries and if corms are taken up and potted they will bloom in mid-winter, as easily as hyacinths, and make very striking objects in the window-garden.

Trillium—Wake-Robin.—(*Trillium grandiflorum*).

Where the Jack-in-the-pulpit is found the trillium is apt to be nearby, and the spreading three-part leaf, coupled with the wide-open three-part flower of snowy whiteness, form a combination not easily overlooked.

The botanical name comes from trili, triple, and few plants show the reason for their name as plainly as does this one with its three-part leaf, three-part flower and three-part seed-pod—in fact, the word three is needed in describing every part except the root.

Wake-Robin; three-leaved night-shade; American wood-lily, and other names, are applied to the plant but the beauty of the flower does not change.

There is a pinkish variety called "painted" trillium which some people claim to be the old flowers of the white variety the good botanists class it as a distinct variety.

Violet.—(*Viola* ———).

The specific name is left blank because of the great number of varieties known, tho the one (in our part of the world), who speaks of "violets" with no distinguishing term refers to the common blue *Viola cucullata*, or the fragrant *Viola odorata*.

No nation can claim the violet as peculiarly theirs for it is one of those that are "known of all men" because of its loveliness. Americans wear it because of its sweetness and beauty and no political or religious significance attaches to the act, but in Paris, during many years, persons wearing them proclaimed themselves in sympathy with the imperialistic party, while to those who sympathized with the legitimists they were

as obnoxious as the red flag of the anarchist is to the loyal American.

Physicians of early days valued the violet as one of the "cordial" flowers and considered it a cure for diseases of the lungs, while Chas. II. and his friends considered "violet conserves" as one of their chiefest dainties.

In the southernmost states the violet is abundant at Christmas time, while in the north it blooms three and four months later, but the flower lover of each section knows when and where they may be found.

Marsh Marigold—Cowslip.—(*Caltha palustris*).

This plant, which blooms in April and May, is commonly called cowslip and furnishes the people of many countries their early-spring "greens," but it is as a flower, rather than a vegetable, we are considering it.

The marsh marigold, with its rounded (slightly kidney-shaped) leaves and golden-yellow flowers, having from five to nine petal-like sepals, is described in old English botanical works as "Mary Gowles," the name Mary being a corruption of mere, meaning marsh, and Gowles an old form of "gold." This makes the name, when modernized, take the form of marsh gold, and one who has seen (as has the writer), acres and acres of swampy land so covered with the flowers that it was impossible to step without crushing them, and water-soaked logs supporting thousands of them, will admit that "marsh gold" is a fitting name.

The rounded, entire leaf of the plant is very unlike the cut leaf of our common buttercup, yet it is of the same family. In Old England it was commonly called the horse-buttercup and was, by many people, called the "insane flower" from the belief that smelling it would produce madness.

The name "cowslip" is a misnomer, for that name belongs to a European primrose (*Primula veris*). In the south they have a flower called the Virginia cowslip, growing in swampy places, that is much more like a true cowslip, the leaves being oblong and heavily veined while the blue flowers are borne in raceme-like clusters at the end of the stalk. (See illustration of true English cowslip).



The True Cowslip, as Distinguished from the Marsh Marigold, which is Commonly, tho Erroneously Called a Cowslip.

Alpine Phlox—Moss Pink.—(*Phlox subulata*).

Phlox is indigenous to every part of the United States, ranging in size from the creeping forms to those that grow a foot or more in height, and every member of the family has both beauty and desirable habits of growth to recommend it. However, as we have space to treat of but one variety we will let that one be the "moss-pink," common in the part of country we are considering.

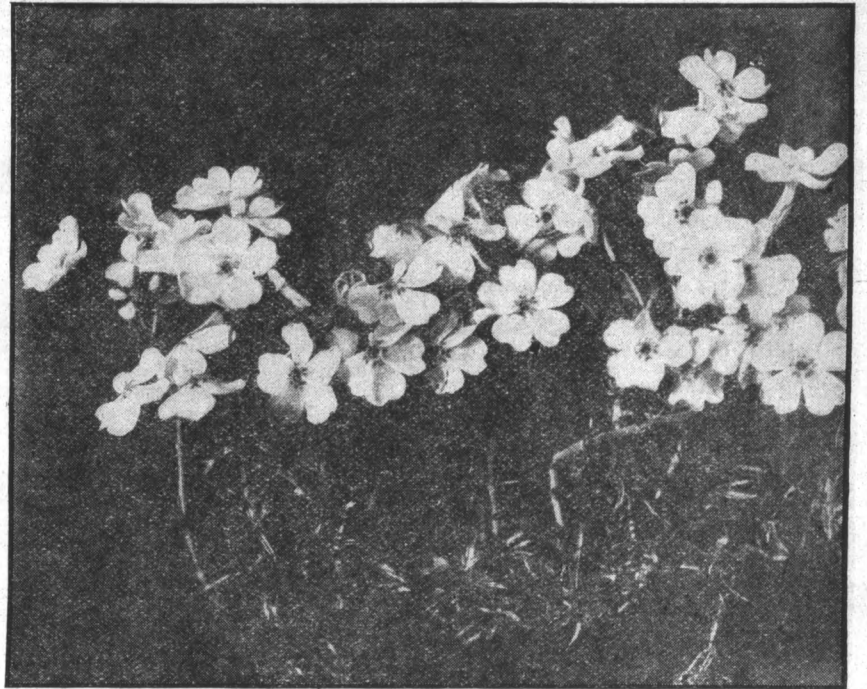
The extreme hardness of the plant gave rise to the name "Alpine phlox,"

this brave little plant can not live in a wet soil but thrives in sandy and barren places where grass can not grow. This fact makes it an ideal plant for use under trees and in other places where a "carpeting" or covering plant is needed to take the place of a grass sod.

One blossom alone is a little thing, but in masses, as they are commonly found, they make a brilliant showing.

Mandrake—May Apple.—(*Podophyllum peltatum*).

The mandrake has a thick, creeping rootstock that sends up plants, at inter-



Alpine Phlox, or Moss Pink, a Hardy Plant, Partial to Sandy and Barren Places.

while its habit of growing close to the earth in a close mass accounts for the name "moss-pink." One may pass a field carpeted with the plants and not notice them because there will not be an open flower to attract attention, yet on the very next day the same field will be literally covered with flowers, and this habit of simultaneous opening of many blossoms is one of the marked characteristics and chief charms of the plant.

Resisting any amount of cold and, seemingly, caring not at all for frosts,

vals, along its entire length. Not every one, however, is a flowering plant, and the flowerless ones may be known by the fact that they produce but one large, rounded leaf, having from five to nine lobes, while the flowering ones produce two, one-sided leaves, also deeply lobed.

The flowering plant sends up a single stem, that divides near the top, to form the leaf-stalks. At the point where the main stalk divides a single, creamy-white flower appears, but its habit of drooping under the shade of the large vivid-green leaves makes it very inconspicuous. The leaves have a drooping habit, too, which causes children to call them umbrellas.

The flower has a decidedly unpleasant odor and is followed by a lemon-shaped, yellow fruit which is sometimes called "wild lemon" instead of May apple. The fruit is not poisonous and not injurious unless too many are eaten; leaves and roots may be handled with impunity but are rankly poisonous if taken internally—a fact which should be impressed on the minds of children who always seem bewitched by the large leaves, and often eat the fruit.

The term *podophyllum* is an abridged form of *anapodophyllum*, which means duck's foot, and is the name by which the English designate the plant—a name that seems well chosen after carefully spreading a leaf and noting its form.

Spring Beauty.—(*Claytonia Virginica*).

This is one of the flowers that seem to have been created for beauty, solely, as it has neither legend nor tradition connected with it, and can put forth no claim to medicinal or other useful qualities.

Its dainty beauty is so much like that of the anemone that it is frequently mistaken for that flower, but two points mark the difference very plainly—the rose-colored veins in the petals and the two, linear (strap-like) leaves.

Beginning to bloom in April, it is often found in bloom as late as June, for the tuberous root sends up sprout after sprout (sometimes eight or nine), each bearing a loose raceme of flowers.

Where found at all they are usually found in profusion, but a bright day should be chosen for a visit to their haunts as the blossoms close on cloudy days.

Dutchman's Breeches—White Hearts.—(*Dicentra cucullaria*).

These pretty flowers with the unpoetic name should be found growing as near neighbors of the spring beauty and the first glance at them will show how much more appropriate the name "white hearts" really is. The generic name *Dicentra* means two spurred and that, too, is appropriate, but by whatever name it is called the flower is a remarkably beautiful.

(Continued on page 451).

Good Paint Never Cracks

Pure White Lead, mixed with pure linseed oil and the desired tints at time of painting is the only true paint. It forms a tough elastic film which only years of wear can remove. Never cracks or scales.

"Paint" containing zinc, barytes, silica, clay, etc., may temporarily beautify but will not permanently protect.

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UNITED FACTORIES CO. Dept. A22, Cleveland, O.



THEODORA.

(Continued from page 448).

"But what are you going to live on, child?"

She shook her head. "I don't know yet. There will be some money I think you said—enough for a little while—and when that is gone we must earn more. I feel sure God will provide some way. He has provided the place and He will take care of the rest."

He looked at her strangely. "You think a great deal of Don?"

"Yes, I suppose perhaps because there were only us two that we love each other more than the children in large families do. Mr. Dingingham, it does not seem to me that I could live if Don was taken away from me, and I am willing to risk anything that he may get well. I could beg for Don."

The lawyer was silenced if not convinced, and Dora rose to go, saying: "Let me know as soon as you hear about the place, please," and went slowly out again, back to Don who was still in the library where the physician had left him fighting his bitter fight.

He looked up and tried to smile as Dora entered, but his boyish lips quivered at the effort. She came and sat beside him.

"Where have you been, Dora?" he asked.

"To see Mr. Dingingham."

"Alone, Dora?"

"Why yes, Don. If we are to be poor I shall often have to go alone when you are not by to go with me, and I wanted to see him particularly at once."

"May I know what about?"

"Of course you may. I wanted to tell him that I did not wish to sell the piece of land he said I owned in California because we were going there to live."

Don looked at her in astonishment.

"To live! Why, Dora, we have nothing to live on!"

"Well, we have nothing here either, and I am sure there must be some way to make a living as well there as here, and you could not make it here you know, and we must go. God will provide some way, of that I am sure."

Don caught at her words. It was the first time that hope had entered his heart. He had taken death as a certainty, and she seemed to open to him the gates of life. Why not? They must live somewhere but—

"It is not likely there is a house—" he began.

"Well, then, it is warm there and we will live in a tent. We still have the one we used when we went camping."

"Capital," he laughed, with boyish enthusiasm; "that would be great sport!"

They would not have to resort to that, however, for two weeks later Mr. Dingingham again called on them with a letter in his hand.

"I have an offer of two thousand dollars for that little place of yours," he said; "but if you are still bent on retaining it, this information may be of interest to you. The place was intended for a fruit and chicken ranch and was partly set out to prunes. They have been neglected, however, and it would take a year or so to put it on a paying basis. There is a small house of four rooms, good but needing repairs, and some chicken houses in the same condition. An electric car line runs by the place, and it is about three miles from the county seat, a pretty little city."

Dora clapped her hands as he ceased. "It will be just the thing, Don; you can raise fruit and chickens and be out of doors all of the time, and I will help. I knew it would all come right."

The lawyer could not resist asking: "What do you know about raising fruit and chickens?"

"Not a thing," answered Dora promptly; "but we can learn. We can get books and papers and, I dare say, the people about will not all be heathen, and will be willing to answer questions."

"But," he still urged, "you will be so far away from all you know."

"So much the better," answered Don, quickly; "I am sure it will be much easier among entire strangers. Indeed, I should do that anyhow. I find we have but few true friends, and we wish no patronage from anyone."

He spoke a trifle bitterly, but no wonder, for from all their fair-weather friends none had reached out to them a helping hand, with the exception of this lawyer and good Dr. Allen.

The man of law straightened himself. "If your minds are made up I presume that nothing I can say will make any difference. I don't know but what it is

best only—" he hesitated; "well, I can say nothing more now." His manner was peculiar but neither noticed it.

"We surely appreciate your interest,"

Donald said earnestly; "but we must go our own way now, the little sister and I."

"Wait until some other man steals the sister away from you, then what?" asked the lawyer.

"He need not worry," laughed Dora; "I shall never go away with any other man until I find a better one than Don, and I do not expect to find him right away."

"I do not know," muttered the lawyer to himself as he went down the street. "It does not seem exactly right to me and yet—well, my lips are sealed anyhow, but I cannot think that Mr. Hampton ever foresaw this. Well, all I can do is to hope that the God they trust will straighten this tangle out right somehow."

(Continued next week).

KINKS.

Kink I.—Planting Riddle.

The last week in April we put in our—
The first week in May we'll fit ground for —

During winter we harvested a good crop of —

At the polls that has made the town bar-keeps —

In our garden we'll plant some early string —

And in straightest of rows the Marrow-fat —

Of early potatoes, a good kind, which —

By common opinion, the Early —

The Prolific Rose for medium —

For late ones, the Carmans, both —

And smooth Ponderosa, the best of —

Gold Queen for yellow; and Early —

Of sweet corn, the Malakoff or Peep —

And Golden —, the sweetest corn grown; —

And turnips and beets, that all of us may —

Have vegetables enough when summer —

Green peppers, egg plant and squashes —

With crooks; —

Parsnips, and pumpkins, carrots and —

Kale and kohlrabi, then White Spine for —

Muskmelons, watermelons, the last —

Salsify, water cress, spinach and radishes. —

Limbs and mangels, and then Brussels —

Okra and onions, cauliflower, —

Around all a fence makes the biddies —

"shut."

Kink II.—Ifs.

1. If a small boy should hit a man on the ear with a potato, how should the man feel?

2. If a retired type-setter should lose all his money and return to his old job, what should the change be called?

Kink III.—Word Square.

This square consists of five words of five letters each. Reading across and down, the square spells the same words in succession. Word No. 1 is a portion of a poem; No. 2 means "banish;" No. 3 means "elevated;" No. 4 is frozen rain; No. 5 a kind of shelter.

Prizes for Straightening Kinks.

To the first 25 who send us correct answers to ALL of the above Kinks, we will give choice of a package of 50 post-cards representing a trip around the world, a copy of "Concrete Construction on the Farm," or a bread and cake knife or a pair of shears. Where contestant or some member of his family is not a regular subscriber a year's subscription (75c) must accompany answers. Answers must reach us not later than May 8, as correct solutions will be published in issue of May 15. Address answers to Puzzle Dept. Michigan Farmer.

Answers to March 20 Kinks.

Kink I. Hidden Picture.—Two of the men (heads only) who protested against Tommy Brown's taking the bird's nest are located in the angle of the top right hand branch of the tree; third man's head is upside down between Tommy's legs. The woman is the face made by the knot in the tree trunk near Tommy's head. The goblin (whole figure) is upside down in the lower left corner of the picture.

Kink II. Agricultural Chemical Problem.—The "important constituent of bones" is phosphorus, whose letters constitute the atomic elements referred to by the formulas in the Kink. "Six-tenths of the atoms" are the letters P. P. H. O. R. U. The S2 HO is "hoss," vernacular for the common farm animal.

Kink III. Who Wrote It?—James Russell Lowell is the author, and the poem is "In the Half-Way House."

No Prizes Awarded.

In every case solvers of Kinks of March 20 failed to send answers to all three Kinks, consequently no prizes are awarded.

You Can Be a Salesman.

A very interesting little book on Salesmanship is gotten out by the National Salesman's Training Association. It shows how any man with tact, ambition and perseverance can become a salesman and secure a good position as a traveling representative for some large firm. It is a very poor one who does not make \$1,000 a year and expenses. Write to the nearest office of the National Salesman's Training Association, either at Chicago, New York, Kansas City, Minneapolis or San Francisco for their book, "A Knight of the Grip." Address your letter to Dept. 210.

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Send to Dr. Kilmer & Co., Binghamton, N. Y., for a sample bottle, free by mail—it will convince anyone. You will also receive a booklet of valuable information, telling all about the kidneys. When writing be sure and mention The Detroit Michigan Farmer. You can purchase the regular fifty-cent and one-dollar size bottles at all drug stores.

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PATENTS **Watson E. Coleman, Patent Attorney, Washington, D. C.** Advice free. Terms low. Highest ref.

SOME OF OUR WILD FLOWERS.—II.

(Continued from page 449).

tiful one and well worth keeping a sharp lookout for, while the thrice compound foliage gives the plant a double claim to favor.

Both these plants (spring beauty and Dutchman's breeches) have bulbous roots that bear transplanting well, even while in bloom.

The flowers already named, with myriads of others, grow in swampy places; in shaded woodlands; in open fields; on barren lands, and by every country roadside, but not all the wild flowers are found by looking earthward. The choke-cherry tree will flaunt its branches loaded with closely-packed racemes of white

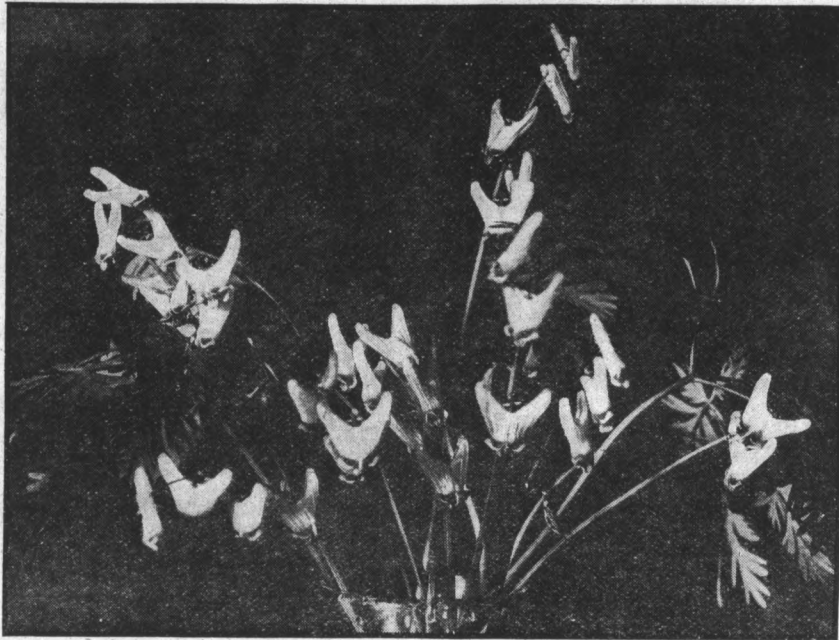
never experimented along this line. Open the infant eyes to the beautiful blendings so much more pleasant and elevating.

THE EARLY AMERICAN AUTHORS.

BY CARL S. LOWDEN.

Henry David Thoreau.

This famous author, naturalist, and essayist was born in Concord, Mass., July 18, 1817. His parents were cultured; and in 1833 he entered Harvard, graduating four years later. Here he was a fair student, but not brilliant. He became a great scholar, and at a later time delved in the perilous fields of creative composition. Poetry fascinated him—



Dutchman's Breeches, or White Hearts, a Wild Plant which does well when Transferred to Lawns or Flower Gardens.

flowers above our heads during April and May, while the sour-wood (sorrel) tree will show as many sprays of flowers resembling the lily-of-the-valley in both form and fragrance, and the powerfully penetrating fragrance of the locust tree blooms will call our attention to them at a great distance.

Perhaps no flowers are so little known as those produced by our shade and timber trees, yet few are more really wonderful. Both the red and white maples blossom before the foliage appears, while the oaks, poplars, birches, aspens, lindens, alders and many other tall growing shrubs and trees carry loads of exquisite bloom in the springtime.

These all have a charm even tho seen with the naked eye, but the realization of their beauty and wonderful construction is increased a thousand-fold by the use of a good microscope—a thing every family should own if they would get the greatest amount of pleasure from the growing things all around them.

TEACHING COLOR.

BY BESSIE L. PUTNAM.

While there are rare physiological defects, as in the case of the poet Whittier, who could not distinguish between red and green—a most inconvenient situation during the strawberry season of barefoot days—much of the so-called color blindness is due to lack of training rather than to optical eccentricities. The men who "cannot tell blue from green" greatly outnumber the women. The reason is obvious. In early life they never wrestled with the problems of matching doll fabrics, and the color schemes of later life are quite out of the line with the majority of business occupations. But where called into practical use, masculine taste is as accurate as feminine.

Teach the child color as one of the very first lessons in education. It naturally likes red. We humor this fancy with red shoes; and there the work stops. Add to these a red cap and belt. Teach it to distinguish the color in flower, feather and fabric, and to know it by the correct name. Then add blue, yellow, orange, purple, and green.

All dealers in kindergarten supplies keep inch cubes in these colors. Get a box, and after the colors are learned, the distinction between square and cube, surface and solid, will be easily added to their knowledge. The amusement in building houses and other structures will many times pay for the blocks. And the ease with which a small child will learn to distinguish the colors and to apply its knowledge to the leaves, flowers and fruits is a delight to those who have

the writings of this accomplished author:

"We had a remarkable sunset one day last November. I was walking in a meadow, the source of a small brook, when the sun at last, just before setting after a cold gray day, reached a clear stratum in the horizon; and the softest, brightest morning sunlight fell on the dry grass, and on the stems of the trees in the opposite horizon, and on the leaves of the shrub oaks on the hillside, while our shadows stretched along over the meadows eastward, as if we were the only motes in its beams. It was such a light as we could not have imagined a moment before, and the air also was so warm and serene that nothing was wanting to make a paradise of that meadow. When we reflected that this was not a solitary phenomenon, never to happen again, but that it would happen forever and ever an infinite number of evenings, and cheer and reassure the latest child that walked there, it was more glorious still."

"This is a delicious evening, when the whole body is one sense, and imbibes delight thru every pore. I go and come with a strange liberty in nature, a part of herself. As I walk along the stony shore of the pond in my shirt-sleeves, tho it is cool as well as cloudy and windy, and I see nothing special to attract me, all the elements are unusually congenial to me. The bullfrogs tramp to usher in the night, and the note of the whippoorwill is borne on the rippling wind from over the water. Sympathy with the fluttering alder and poplar leaves almost takes away by breath; yet like the lake my serenity is rippled but not ruffled. These small waves, raised by the evening wind, are as remote from storm as the smooth reflecting surface. Tho it is now dark, the wind still blows and roars in the woods, the waves still dash, and some creatures lull the rest with their soft notes. The repose is never complete. The wildest animals do not repose, but seek their prey now; the fox and skunk and rabbit now roam the fields and woods without fear. They are nature's watchmen—links which connect the days of animated life."

APRIL'S "ABSENT MINDED BEGGAR."

BY MAURIE E. S. HYMERS.

He bragged about his loyalty to party and to cause,
He made his neighbors tired with his tongue;
He held himself responsible for right and proper laws,
And praises of his candidate he sung.
He told us that the safety of the city was at stake,
There were mighty issues hanging on a vote;
He urged us on election day to be alert, awake,

And columns to the daily papers wrote,
He ranted of the ballot as the sceptre of mankind,
With which to guide the destinies of state;
Our duty as true citizens he faithfully defined,
And warned us we were keepers of our fate.
In fact he talked so freely that he hadn't time to think,
(A consequence considered worthy note);
He quite forgot to register, and thru this missing link
Our man of many missions lost his vote.

ONE OF OUR TENNESSEE GIRLS AND HER FAVORITE JERSEY.



I am sending a photo of myself and my favorite Jersey cow—halterd as I lead her over the farm. I have other cows, but none so docile as this one, yet all can be led, curried and clipped, standing quietly. By thus training them we never have a nervous or fractious cow.—Maybel Leeman, Wilson Co., Tenn.

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The large size family package of Quaker Oats, with a handsome piece of china, sells at 30c; without the china, 25c. The regular size package costs 10c.

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AN ARBOR DAY WITH UNCLE BEN.

(Continued from page 447).

"For 30 years the average annual value of the crops from this row of trees has been in excess of one hundred dollars per year. The crop is produced without labor, other than that of gathering the nuts. The trees pay a good profit upon the strip of land they occupy, and an annual excess of profit sufficient to pay the taxes on the valuable 80 acre farm which they adorn.

"Nuts make good fuel. Their flinty-hard shucks burn as long, and throw out as much heat as a like weight of anthracite coal. There is no difficulty in burning them readily in any coal stove.

"The present timber value is also well worth our notice. These trees are now from eighteen to twenty-four inches in diameter and they will average one good log twelve feet long per tree. Such logs will cut an average of two hundred feet (board measure) of lumber each. This lumber is worth not less than seventy-five dollars per thousand feet, all grades included. On this basis the lumber value is seen to be not less than fifteen dollars per tree. Veneer factories pay well for all sound, large, knotty pieces of tops. They cut into thin sheets which have great value because of the beautiful effects of the irregular graining. The average value of the crotch sections of the trees is probably not less than three dollars per tree. Gun makers pay good prices for black walnut stumps and large roots, from which they make high priced gun stocks. The average stump from these trees should produce material for ten or more modern short gun stocks, worth at least fifty cents each in the rough blocks. These stumps should be worth at least five dollars each when marketed. The small limbs can be cut into wood for the kitchen stove. Each of the large tops will provide at least one cord of wood worth not less than two dollars. We now have, bodies \$15.00, crotches \$3.00, stumps \$5.00 and tops \$2.00, an average of about \$25.00 per tree. From this estimate you can readily see that not only has this row of walnut trees produced a good profit year by year upon the strip of land it occupies, but it has a present timber value, capable of being realized upon at any time at no great expense, at least one-half as great as that of the fine 80 acre farm which it adorns.

"James, your pile of shucks would indicate a preference for butternuts."

"Yes, I have, Uncle Ben. I am curious to see the trees such good nuts grow on."

"I'll show you them tomorrow. The butternut tree belongs to the same family of trees as the black walnut. It is not so hardy and rarely grows as large. Its wood is softer and lighter colored than the walnut, but it has a closer grain and a fine satiny lustre that makes it quite pretty. Butternut lumber is among the rarer woods and is in small demand," replied Uncle Ben.

"It is getting quite late. I think we had better retire."

Arbor Day dawned bright and mild, and we were out early. After a good breakfast of buckwheat pancakes and maple syrup, we were ready for the day's special work.

After the morning chores were done, Cousins Frank and Henry got their shovels and opened the pits into which they were to set trees later in the day. They also prepared a few other pits where trees were to be set next Arbor Day.

The soil in the vicinity of the pits was not very deep nor rich, but the soil being shoveled from the pits was dark, loose, rich and deep. We soon learned how this came to be, for Cousin Frank was preparing several pits for next year's tree planting. He ripped off the tough sod from an oblong space, about three by six feet in area, and put it in a pile. Next he dug up the good soil over the whole area down to the clay subsoil to the depth of nearly a foot in one-half of the oblong pit and deposited this clay in the other end. Half of the pile of good soil was then shoveled into the deep hole upon which the sod was spread, after which the balance of the pile of good soil was evenly distributed over the excavation. A small stake was set to mark the center of the deep pit, so that it could be readily opened in the right place next year.

Uncle Ben had hitched a team to his farm wagon, and when the boys had finished their work on the pits, we all went to the woods for the trees. We took the shovels, a long-bladed sharp spade, a crowbar, a pruning shear, several old pieces of blankets and burlaps,

pieces of small rope, and a small tin of red paint.

At the woods we had to open a gate. Nearly every kind of native tree was to be found in all sizes, from large, mature timber trees to tiny seedlings, and all were vigorous and healthy. The growth of young trees, saplings and seedlings was quite heavy and general throughout the tract, and there was no grass, except along the fences. Adjoining timber tracts were thin and in poor condition. They contained no saplings nor seedlings, while much grass and sod appeared all thru the tracts.

Noticing this contrast I was at a loss to account for the difference, so I asked Uncle Ben for an explanation.

"Stupidity and greed have ruined these neighboring tracts," replied Uncle Ben—"stupidity in not seeing that a timber tract must be kept as nearly as possible in its original or natural condition; and greed which, for a bit of extra pasturage for stock, has caused the past and present owners to rob future generations of timber which should now be growing. Cattle, sheep and horses are fond of the tender leaves and twigs of almost all our native trees. They will eat every green leaf within their reach. Coming generations should feel indignant toward their ancestors for permitting stock to eat up the young trees which an all-wise Creator has provided for the needs and use of all generations. My timber tract here is being preserved for my children and future generations, and I will not permit my stock to rob them of their rightful heritage. Hogs do no harm, but much good, so I let mine have free run of these woods all summer, and in seasons when nuts are plentiful the hogs need little other food than the nuts to fatten them."

A winding roadway led us to the sugar camp. Around it was a fine lot of young trees. Uncle Ben took the bundle of old blankets and ropes, and the boys their shovels, and we proceeded to take up the trees. Uncle Ben knew where most of the prepared trees were located, and when he found one that suited him, he hung a blanket on it as a marker. After the trees were located, Uncle Ben helped the boys to dig them up carefully. After cutting deeply around the tree, about fifteen inches from the body, with the sharp spade, to cut off any possible long roots, a pit was dug at one side and the block of earth containing the tree was under-cut from that side with the long sharp spade. The crowbar was then rammed thru from the other side and the tree was tipped partly over toward the pit, in which position much of the surplus earth about the roots was carefully broken away by hand. The tree was then carefully lifted and placed upon one of the blankets, which was then wrapped about the roots and tied in place with a piece of rope, so as to protect the roots from injury and drying until again set out in their new locations. When the desired number of trees had been dug and wrapped up, they were loaded on the wagon and tied to prevent rubbing and injury while being hauled to their destinations.

The trees were maples and elms, and all were fine, straight, specimens from one to one and one-half inches in diameter near the ground and from eight to ten feet tall, with a compact growth of fine roots, and many small branches for tops. Each tree was marked on its north side with a narrow vertical stripe and a similar cross stripe of red paint, the cross stripe being located about three inches above the ground level.

After the trees were loaded, Uncle Ben said, "Get your tools, boys, and we will prepare some more trees for removal next year if we want them then."

Upon finding a suitable tree, Uncle Ben put a narrow stripe of the red paint up and down on its north side and another similar stripe crosswise about three inches above the ground; Cousin Frank cut a complete circle about two feet in diameter around it with the sharp spade, forcing the spade down deeply so as to leave no root more than one foot long; and Cousin Henry trimmed the top back severely with the pruning shears, leaving the body about eight feet tall with just enough small branches near its top to afford it a few leaves.

Uncle Ben explained why he prepared trees in this way: "Trees thus trimmed at top and roots and left in position, will immediately endeavor to regain the losses they have suffered by throwing out a large number of fine new roots and branches, which puts them in the best possible condition for successful transplanting a year or two later. The vertical stripe of paint on the north side of

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the body is for the purpose of enabling one to set the tree with the same side exposed to the sun as it had before removal. The bark on a tree trunk is not of the same thickness on all sides. Many fine young trees are ruined by being set with the wrong side to the sun when being transplanted. It seems that the fierce heat of the midsummer sun scalds the bark cells when wrongly set, and the bark dies and dries to the wood for a time, after which it peels off and leaves a badly scarred and one-sided tree, if it does not kill the tree entirely. The horizontal stripe of red paint near the ground is to show how deep to set the tree in its new location, which should generally be but a little deeper than it originally grew.

"All aboard. We will now drive to the house with our trees, as it is nearly noon, and after dinner we will set them out."

The trees having been delivered at the pits before the team was unhitched, we were ready immediately after dinner to proceed with their planting.

When all was in readiness, we proceeded to unwrap the blanket from about the roots of the tree, and carefully set it upright in the pit with the marked side toward the north and the depth indicated by the mark provided for that purpose. The roots were then spread out, and some of the fine, rich earth which had been produced by the rotting sod, was carefully worked in under and around the fine roots with the hands, until they were all well buried, without being greatly distorted; then a little more of this rich earth was shoveled in, and Uncle Ben got into the pit and pressed the earth firmly and compactly about the roots with his feet, more earth being added and the packing continued until the pit was within two or three inches of full. The remaining rich earth was loosely and evenly spread over the top of the pit, and a ridge of coarse earth was thrown up in a circle about the outside of the pit for the purpose of forming a water basin to aid in supplying the newly set tree with plenty of moisture. A thick mulch of old straw was then placed about the tree to prevent the sun's rays from reaching the soil about the tree and absorbing the moisture from it.

In answer to my inquiry as to why the pit was dug so deep in the first place and then partly re-filled with the loose, rich earth, and as to why the sods were put in the pits when they were prepared the year before, Uncle Ben replied: "You will understand that our dense clay sub-soil, here, is almost impervious to water. If, then, a pit is dug in this dense clay, and the pit is filled with a loose, porous soil, as you have seen, a reservoir capable of holding several pails of water will be formed, and the porous soil will feed this water upward to the roots of the tree as they may need it. This reservoir, together with the mulch over the top, has generally proven adequate to supply the newly set tree with plenty of moisture for its requirements, without any artificial watering whatever. The tree in its new setting should have a large supply of decaying vegetable matter for food during the first few years, so it may rapidly recover from the shock of its removal and start a vigorous growth in its new location. The rotting sods provide this food for the tree more easily and in better form than anything else available. I have always considered that these extra provisions have been worth a great deal in causing the trees I have planted to do so well."

After watching them plant the remaining trees, and being shown around and made acquainted with the various kinds of trees, we concluded that there was more in a properly observed Arbor Day than most people imagine. At some future time perhaps I may tell you some more about Uncle Ben's knowledge of trees.

FORTUNE.

BY EUGENE C. DOLSON.

A most capricious maid is she;
And many an up and down has he
Who thinks to follow her, because
'Tis said her wheel without a pause
Turns round and round incessantly.

Don't Trust to Luck.

If you are real sick or simply don't feel right in any organ of your body, don't trust to luck to get well. Don't expect to wake up some morning and find all your troubles gone. You must use a right kind of medicine, one that helps to make the body well. The Vitae-Ore advertisement on the last page of this paper offers a chance for every reader to try this well known medicine without a penny risk.

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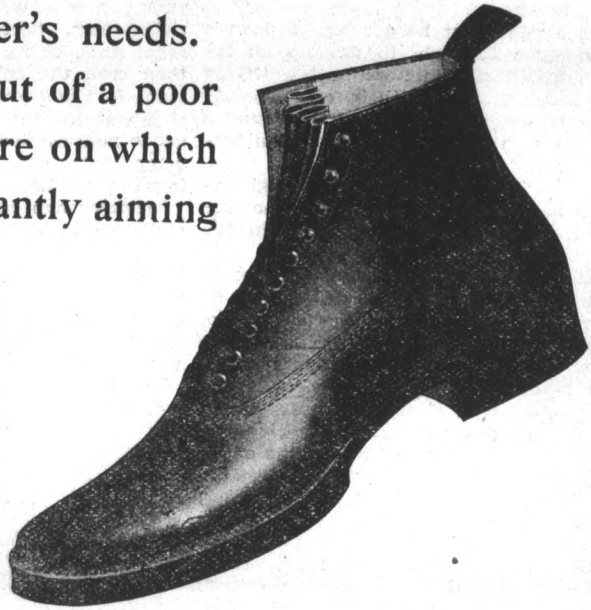
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OF INTEREST TO WOMEN

HOME CHATS WITH FARMERS' WIVES.

BY ELLA E. ROCKWOOD.

The Door Yard.

Along with the advancement in other lines which has come to our farm homes is a most decided improvement in conditions directly surrounding them, that is, in the door yards. Ten years have shown marked progress in this respect and while this fact is something in which we may feel a pardonable pride there is every reason to believe that there are still better in store. Indeed, the time is not far distant when every country community may have its improvement league whose members will be active in promoting the beauty of the rural landscape the same as cities and villages already have theirs.

What might not be accomplished were all families suddenly to develop an intense and lively interest in beautifying the surroundings of their own homes? As it is, everyone who does this sets an object lesson before the eyes of his neighbors and the example will not go unrewarded. One lawn mower in a neighborhood has been known to become the means of improving every lawn in the neighborhood.

Some people seem to have the impression that before a hand mower can be operated the lawn must be plowed up, leveled and reseeded, but such is not the case unless in quite exceptional cases. The machine will run freely over any ordinary ground, if only the grass is not allowed to get too high. It must be started early in the season and the entire surface covered at least once a week during the spring and fore part of summer, or as long as the grass grows rapidly.

No one thing adds so much to the attractiveness of the home surroundings as does keeping the grass closely clipped. It is like a clean shave to a man's face, makes it look ever so much better in the eyes of all beholders.

There are a few homes in the country where spring finds nothing to pick up around the house and barn. I class the men who own these with the immaculate housewife in whose domain nothing is ever out of place. But these cases are rare, altogether too rare. A glimpse of most door yards at this time of the year discloses at least some improvements to be made by way of cleaning up.

There is sometimes a disposition to neglect the back yard while the front, the side most exposed to view is as tidy as can be. This is a clear case of putting the best on the outside. There should be no spot that will not bear investigation. We should have all sides neat and clean, and now is the time to see that this is done, if not so already.

We know something of hygiene, and that dire results frequently follow disregard of the laws. Some might quite agree with the physician called in a bad case of diphtheria who, in searching out the cause pointed to a mildewed board at the side of the house, yet we all know that the family health depends in a large degree upon sanitary surroundings. A cesspool at the back door is no longer to be tolerated. Where there is no drainage connection all house slops should be carried in pails several rods from the house. By emptying them each time in a different spot there will be no odor, since fresh soil is an absorbent and deodorizer. When it becomes clogged by repeated applications this power to absorb and deodorize is lost, and a bad smelling place is the result.

This spring is a good time to set about installing a good permanent drain leading several rods away from the house. It will be the greatest convenience in doing the work about the kitchen. Where the work can be done by home labor the cost is only that for the tile and the necessary traps to prevent the gases from backing up and entering the house.

What disposal shall be made of the unburnable refuse, such as tin cans, broken glass and crockery which will collect? These articles must not be dumped down anywhere and allowed to become an unsightly spot near the house. Rather let them be buried decently and in order, thus disposing of them once and forever. A barrel in some outbuilding, placed for this particular purpose will receive them, piece by piece, then when it becomes filled it can be loaded upon a stoneboat or wheelbarrow and carried

away. Tin cans are the hardest of all to dispose of and are most unsightly objects if left where the eye can rest upon them.

The purifying influence of the flames should be used ruthlessly upon any and all rubbish about the house. It pays to gather together from garret and cellar, from woodshed and dooryard such articles as are altogether useless, and reduce them to ashes. Why anybody should hoard dozens of pairs of old shoes passes my understanding. Why cumber the attic with chairs or tables broken past all repair? Why permit old garments tattered and torn to hang, year in and year out, in any part of the house? Get rid of them. Sort out the best for carpet rags, rugs, or for the ever useful patch, then turn the balance over to the ragman, if you prefer to do that, but the cheap tinware and poor quality of the goods now carried by the peddler, hardly compensates one for the trouble of making the exchange.

What woman does not thoroly enjoy the change which takes her out into the open air during the first balmy days of spring? There is a charm in the prosaic garden rake and seeds have an attraction irresistible in themselves.

It may be not an altogether righteous way of judging, yet we are prone to base



In Keeping Ties, Handkerchiefs, etc., Neat Boxes are Both Useful and Attractive.

the status of the family on a plane with its environments. Neatly clipped lawns, yards free from litter, fences clear of weeds and briars, these cost little, yet they carry considerable weight in the eyes of those who pass that way.

One of the most glaring offenses against the sense of vision is the huge advertisement painted upon the sides of buildings, upon bridges, rocks or trees. It is to be hoped that this particular phase of modern commercialism will be taken up by our prospective country improvement leagues and put out of existence. A wave of reform along this line is now sweeping over the land and ere many years these disfiguring signs will be seen no more.

April and May are busy months on the farm and idle hands are busily employed. Yet there are ways of accomplishing the odd jobs in spite of that. Sometimes it is left for the housewife to see that the dooryard is put in good condition and a capital general she makes. With the help of one or two assistants she can accomplish the work most effectively.

Tree planting time is again with us, and there are plenty of places where these may be set to advantage. A bare and desolate looking place is a home without these beautifiers surrounding it. How cool and restful the one with its setting of green on a hot summer day. It costs but a little effort to get trees from the woods, or what is better, from the open, and set them about the yard and nothing adds so greatly to the general appearance. There is absolutely no excuse for a treeless dooryard.

And why not appoint a tree-planting day for the school yard? So many of these are bare of shade. That feature marked the otherwise attractive school grounds shown in The Farmer of April 3. So apparently enterprising and faithful a teacher as the one at the head of it

will, I am sure, not fail to remedy that matter this spring. Why should there be one schoolhouse in all the land left without its setting of green? Flowers, beautiful as they are, cannot take the place of trees.

We are proud of our farm homes, proud with an honest pride which comes from achievement hardly wrot, for few of them have been easy conquest. No effort should be considered too great to improve them until all are made what many already are, beauty spots upon the landscape, and a joy to all beholders.

All together now, for a country improvement league which shall take up this work in every rural community.

Here is a suggestion for each individual householder. Pause just a moment at your front gate and take a good look at the yard. Note every detail of house, outbuildings and yard. If there is any little thing, or greater one, which might be done to improve the appearance of the home this critical survey will reveal it far more surely than a hundred casual glances given in passing to and fro about the place.

SO-CALLED ECONOMY.

BY MARGARET WHITNEY.

Economy and economize are two much-used words but sometimes we fear they are falsely applied. Economy as practiced by some persons is nothing but extravagance, altho one might have much trouble in convincing the person of the truth of this statement.

If one wastes time doing work which might be employed in doing something of more importance—even tho the work be very necessary—is not practising eco-

nomy. He might better hire the work done and employ his own time at the thing for which he is fitted.

A housekeeper who insists on washing, sewing and doing other things for which she is not physically able may think she is very economical but if she gets sick one visit from the doctor would more than pay for several washings or hire several dresses made by a dressmaker and save her the suffering beside.

What is the use of buying a cheap pair of shoes that cost possibly half as much as a good pair, and have the soles drop off the first time they get wet? Then if this is not sufficient experience buy a second pair of the same kind and both pairs will not last nearly as long as one good pair that would not cost any more than the two cheap pairs.

It is much more convenient to have one good dress well made than three or four dresses poorly made. The cheap dresses are cheap and look cheap from the first to the last, besides giving one an uncomfortable feeling every time they are put on. They do not have weight enough to make them hang well even when new and in a short time are limp and shabby looking.

Buying something one does not want and possibly will never use just because it is cheap, is another form of economy in which some people indulge. A lady who scarcely ever read a newspaper and never dreamed of reading a book had a son who resembled her very much in this respect. One day, seeing some books which the storekeeper was anxious to dispose of, offered for sale, she bot a few of them because they were only five cents apiece. The books were not worth reading and were dear at any price and it is needless to say that neither the mother or son ever read one of them.

This is true of cheap furniture that soon falls to pieces, cheap tools that an-

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noy the one who uses them because he cannot do good work, and cheap machinery that is continually out of repair and costs as much in the end as good machines. Cheap things are always cheap and one would do better with fewer things or by doing without until he can buy good articles of whatever he desires.

FOOD AND HEALTH.

BY CHARLOTTE A. AIKENS.

An eminent English physician in writing on the subject of diet has stated that "More than one-half of the disease which embitters the middle and latter part of life among the middle and upper classes of the population, is due to avoidable errors in diet." The child between the ages of ten and eighteen is in a condition of active growth both of mind and body. Then, if ever, he needs to be adequately and wisely fed. He has all his life before him during which the education of the mind may go on. Education should be a life-long process and there is no real need of hurrying or driving a child in his studies. But the development of the body is limited to a certain period of life, after which it becomes finally and irrevocably arrested.

A careful and intelligent study of the food question is therefore a matter of exceeding great importance. The diet at that period should be abundant and it should be well balanced, to provide for growth and the repair of waste tissue, the body needs certain of the elements contained in lean meat, eggs, milk, and wheat flour. Peas and beans also contain the elements needed for tissue building. For the development of the necessary heat in the body and muscular energy, the food should contain a certain proportion of fats and starches. There must also be a certain amount of the mineral element for the hardening of the bones and teeth.

Whether it has happened as the result of instinct or otherwise it is a fact that in the average meal one food very often supplements what the other lacks, and without much planning we have a fairly well-balanced meal. For instance, custom has decreed that oatmeal porridge, which is rich in starch, shall be eaten with milk; bread contains the starch and some of the elements needed for tissue building, but contains no fat. Therefore butter is added to it to help maintain the balance. Rice, which is starchy, is cooked with milk, and the combination makes a substantial food.

When the period of growth and development of the body have passed, it is easily seen that the actual food requirements must differ somewhat from the requirements during the years when active growth was going on. No hard and fast rules are possible about either the kind or quantity of food required in adult life. The conditions and circumstances of each individual, his occupation, habits, etc. must decide such questions to some extent. The man who sits at his desk all day working his brain, needs a diet somewhat different both in quality and quantity from the man who is engaged all day in active muscular exercise. The season, too, will influence the question of diet.

The capacity for storage of food differs also in different people. When too much food is eaten, the surplus must be stored up in some form. Thus it follows that after forty years have passed some individuals begin to lay up fat. They are using more tissue building food than the body demands, and the surplus has to be disposed of somehow. If the constitution has not the power of storing fat, the surplus goes somewhere else, often to produce disease in some form, usually of the liver, kidneys, or digestive organs. It is often very hard to make people believe that they require less food in middle life than when they were growing, or to persuade them to restrict themselves in their habits of feeding.

Sir Henry Thompson has said that "The typical man of eighty or ninety years still retaining a respectable amount of energy of body and mind, is lean and spare and lives on slender rations." In fact, it has frequently been noted that individuals who reach the century mark in age, have been extremely moderate in their habits of diet and have been so for long years. As old age approaches the activity of all the organs of the body lessens. The ability to indulge in muscular exercise lessens, and the digestive organs sharing in the general decline, are less liable to digest large quantities of food. All these changes necessitate corresponding changes in the quantity and quality of food.

Three general rules for feeding old peo-

ple should be borne in mind. First, encourage them to eat less. Second, give food in smaller quantities and at more frequent intervals. Third, give only foods that are easily digested. Large heavy meals should be avoided. Milk, if it agrees, may wisely form an important part of the diet of the aged as well as the young. Starchy foods should be well cooked. If the teeth are poor, as they often are, special care needs to be used. The use of a chopping machine when meat is at all tough, will help to prevent digestive disturbances from that source. The important thing is to get the individual to recognize that physical changes in his organs require changes in his habits. "As we increase in age," says the authority previously quoted, "less energy and activity remain, and less expenditure can be made; less power to eliminate is possible at fifty than at thirty. Still less at sixty and upwards. Less nutriment must, therefore, be taken in proportion as age advances, or rather as activity diminishes or the individual will suffer. If he continues to consume the same abundant breakfasts, heavy dinners and substantial suppers which at the summit of his power he could dispose of with impunity, he will in time certainly either accumulate fat or become acquainted with gout or rheumatism, or show signs of unhealthy deposits in some part of the body. He must reduce his 'intake' because a smaller expenditure is an enforced condition of existence. At seventy, the man's power has further diminished, and the nourishment consumed must correspond thereto, if he desires still another term of comfortable life."

It will usually be found that there are some articles of food which do not agree with everybody. The whole range of food is not for any one at any period of life. The man who boasts that he has a stomach that will digest stewed marbles or horseshoe nails will sooner or later find some food which causes distress. With one it may be cheese, with another hot biscuits, with another fresh pork, with another coffee. It would seem to be hardly necessary to say, "Avoid foods that are known to disagree, if you wish to keep at the maximum of health and comfort," but experience has shown that a reminder of that kind is often needed.

VINES.

BY GLADYS HYATT SINCLAIR.

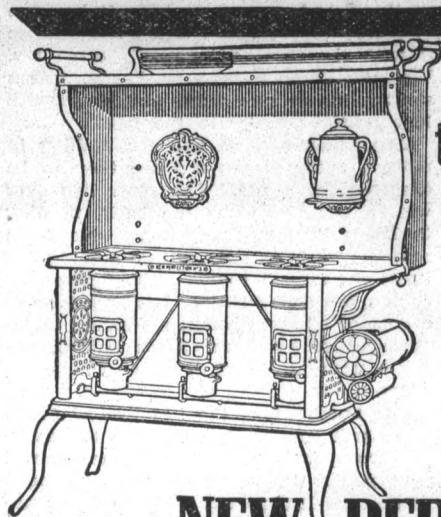
When riding thru the country, past our prosperous American farms, one can not help comparing their neatness and evident thrift with the slack, untidy, "good-enough-for-poor-folks" style displayed in so many foreign countries. But with all our thrift and comfort, there is a bald, naked look about most of our farm homes in northern and eastern America; a severity; a need of the gracious, softened lines that add so much of beauty and hominess to the dwelling places of Europe and of our own southern and far western states.

What makes the difference? What do we lack? We lack the vines that our more discerning neighbors use to drape and beautify cottage and palace, wall, fence, out-building and stone-heap.

Vines need not cling to the boards of a house, and be accused of harboring dampness. When trained on chicken wire, tacked to the eaves, they are a protection to the house rather than a detriment; and, thus trained, they can be laid down when painting.

You who live in the country should have more vines, and more beautiful ones, than city dwellers. You have plenty of old manure to use, and vines are hearty feeders; you can reach the woods where native vines are to be had for the digging—and native vines are the very best to plant. They are sure to like the climate and soil or they would not be native, therefore, they need little coddling and give good results. So, if the wild white Clematis (Clematis Virginiana) grows in the woods near you, dig the young plants very early in the spring and give them rich earth. "Rich" for vines means that the dirt has been dug out for two feet down and the place filled with old manure mixed with leaf mould or garden dirt. When setting, puddle the roots well, spread them flat and stamp the earth over them, leaving a little hollow around the vine, except in very heavy clay. These directions apply to all common vines. Give them the wash water thru the summer and a bushel each of rough manure around the roots in November.

Virginia Creeper, American Ivy, or "Woodbine," as some call it, is not to be excelled and it grows wild over all the



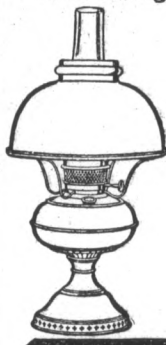
Don't Heat the Kitchen

All the necessary family cooking may be done as well on a New Perfection Wick Blue Flame Oil Cook-Stove as on the best coal or wood range.

By using the "New Perfection" Oil Stove, the annoyance of an overheated and stuffy kitchen is entirely avoided, even in midsummer. The scientific construction of the

NEW PERFECTION Wick Blue Flame Oil Cook-Stove

ensures quick work and a cool kitchen. The "New Perfection" has a substantial CABINET TOP for warming plates and keeping food hot after it is cooked. Also drop shelves on which to set small cooking utensils—every convenience, even to bars for holding towels.



Made in three sizes. Can be had either with or without Cabinet Top. If not at your dealer's, write our nearest agency.

The **Rayo Lamp** is substantially made of brass, finely nicked and very handsome. Gives a powerful light and burns for hours with one filling. Portable, safe, convenient—just what every home needs. If not with your dealer, write our nearest agency.

STANDARD OIL COMPANY
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Are You Building?

If so, don't take chances on your roof by buying "extravagant claims," but get a good old-fashioned roofing of quality, made by a firm established in 1817.

Paroid Roofing Facts.—It has stood the test of years on U. S. Gov't buildings, mills, farm and poultry buildings. Easiest to lay—most attractive.

PAROID ROOFING

is not a low priced roofing, but the slight difference in cost over cheap roofings is made up by a big difference in quality.

OUR GUARANTEE: Buy one roll of PAROID, apply it to your roof. If you are not satisfied that you have the best, we will send you a check for the amount you paid for the roofing and the cost of applying it.

Write for more facts and sample of PAROID, also free booklet of plans entitled "Practical Farm Buildings" if about to build.

F. W. BIRD & SON, Established 1817.
123 MILL STREET, EAST WALPOLE, MASS.



Here Is Something New From Kalamazoo

Prove for yourself in your own home, that the Kalamazoo is the most perfect—most economical—most satisfactory range for you to use—Your money back if it's not.

Send for Catalog No. 113 with special terms and compare Kalamazoo prices with others.

Cash Or Time Payments

We want every housewife to know the comfort and convenience of a Kalamazoo in her home. You can buy on **easy time payments** or pay cash if you like. Either way—you save \$10 to \$20 on any stove in the catalog. We make it easy for responsible people to own the best stove or range in the world.

We Pay the Freight

Kalamazoo Stove Co.
Kalamazoo, Mich.

"A Kalamazoo Direct to You"



10 DAYS FREE TRIAL

We will ship you a "RANGER" BICYCLE on approval, freight prepaid to any place in the United States without a cent deposit in advance, and allow ten days free trial from the day you receive it. If it does not suit you in every way and is not all or more than we claim for it and a better bicycle than you can get anywhere else regardless of price, or if for any reason whatever you do not wish to keep it, ship it back to us at our expense for freight and you will not be out one cent.

LOW FACTORY PRICES We sell the highest grade bicycles direct from factory to rider at lower prices than any other house. We save you \$10 to \$25 middlemen's profit on every bicycle—highest grade models with Puncture-Proof tires, Imported Roller chains, pedals, etc., at prices no higher than cheap mail order bicycles; also reliable medium grade models at unheard of low prices.

RIDER AGENTS WANTED in each town and district to ride and exhibit a sample 1909 Ranger Bicycle furnished by us. You will be astonished at the wonderfully low prices and the liberal propositions and special offers we will give on the first 1000 sample going to your town. Write at once for our special offer.

DO NOT BUY a bicycle or a pair of tires from anyone at any price until you receive our catalogue and learn our low prices and liberal terms. **BICYCLE DEALERS:** you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

SECOND HAND BICYCLES—a limited number taken in trade by our Chicago retail stores will be closed out at once, at \$3 to \$8 each. Descriptive bargain list mailed free.

TIRES, COASTER BRAKES, single wheels, inner tubes, lamps, cyclometers, parts, repairs and everything in the bicycle line at half the usual prices.

DO NOT WAIT but write today for our Large Catalog beautifully illustrated and containing a great fund of interesting matter and useful information. It only costs a postal to get everything. Write it now.

MEAD CYCLE COMPANY, Dept. G 77, CHICAGO, ILL.

When writing to advertisers mention The Michigan Farmer.

OUR PATTERNS.

Price, 10 cents each. Waist and skirt patterns are usually separate, therefore be sure to send 20 cents for a two-piece suit pattern which has two numbers, e. e., a waist number and a skirt number; if such a pattern has but one number, send only 10 cents. Order by number and title of pattern. If for children, give age; for adults, give bust measure for waists, and waist measure for skirts. Be sure to give size when you order. Address orders to Pattern Department, The Michigan Farmer, Detroit, Mich.



Names of Patterns Illustrated above.
(Give Number and Size).

- No. 5919—Child's Undergarment. Sizes for 3, 5, 7, and 9 years.
No. 8433—Creeper or Romper Dress for Baby. Three sizes for 6 months, 1 year and 2 year old.
No. 5976—Girls Frock. Sizes for 6, 8, 10 and 12 years.
No. 8386—Boy's Double Breasted Blouse. Sizes for 4, 6, 8, 10 and 12 years.
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No. 8402—Top Coat for Young Miss. Sizes for 8, 10, 12 and 14 years.
No. 5916—Dressing Sacque and Slumber Shoes. Sizes for 32, 34, 36, 38, 40 and 42 inches bust measure.
No. 8400—Practical Apron. Small, medium and large sizes.
No. 8364—Dainty Blouse. Sizes for 32, 34, 36, 38, 40 and 42 inches bust measure.

We have given the machine a good trial and are well pleased with results. It runs easier and does as good work as a \$40.00 machine we had here on trial before purchasing your machine. I see no reason why your machine should not last as long as the higher priced one.—Wm. E. Hill, Davison, Mich.

northern and eastern states. It has five "fingers" to each leaf, so do not confuse it with the three "fingered" poison ivy. Virginia Creeper is very hardy, grows swiftly, makes fine shade and glows with lovely bright colors in the fall.

Hop vines can be had for nothing in most country places nor are they to be despised for shade. The roots live over winter but the vines die back, needing to be trained every spring. Give them straight wires as they will do nothing but twist round and round. They grow like Jack's bean stalk; and if they get lousy a dose or two of strong suds with a tablespoonful of kerosene to the painful, applied with a whisk broom, will clean them.

So much for the easily-to-be-had. They will transform nakedness to beauty in three years and so much success will give you a desire for flowering climbers. These are legion, but alas! so many are tender. A few, however, will grow and blossom with the treatment given above, if you feed them each spring with rotted manure.

First and loveliest are climbing roses. There is no reason why you should not have your porch covered with Crimson Ramblers, as well as the city porches a few miles away. Your wash and dish water, faithfully applied, will do them more good than constant drenching with a hose. If near a large city, you can buy Ramblers for ten cents each in the spring. They may not grow, being shipped from Holland, but they are well worth trying. I set out two as an experiment last April. They bloomed in July and look as if they meant, next summer, "to scale the lattice windows e'er they blow." Any reliable seedsman will send you big, healthy Ramblers, sure to grow, with decent treatment, for twenty-five to fifty cents each. If you can buy but one each season, buy that one. You will soon have all you want; and a few well treated, well loved vines are better than a hundred neglected, starved ones. In the spring, cut Ramblers back one-third of the previous season's growth and take out all dead wood.

There is another class of climbing roses, Wichuraiana, or Memorial Roses, which are very good. They will climb or trail anywhere, bloom in June and July and their foliage remains green half the winter.

I think any one who has ever seen the old fashioned Chinese Wisteria in bloom will place it next the roses on her list. Give the Wisteria that sunny side of the house, heaps of old manure, and every spring it will be to you a wonder with its long, swaying panicles of flowers, shaped like a pea blossom, delicate violet in color and giving forth the sweetest fragrance in the world.

Of Honeysuckles the Chinese, (true Woodbine), Halliana with white flowers, and the Variegated Leaved Honeysuckle are the best. They are slenderly growing vines and give little shade but great grace and fragrance.

For a southern porch or window, where dense shade is wanted, Dutchman's Pipe (Aristolochia Siphon) is splendid. I do not see why this vine is not better known. It is perfectly hardy, grows very fast, and its immense heart shaped leaves are as effectual against the inquisitive sunshine as so many tiny umbrellas.

Bignonia, or Trumpet Creeper, costs but twenty-five cents a root. It has clusters of large, showy orange-red "trumpets" and these flowers last a long time. But it grows in a stout, struggling, go-as-you-please fashion which makes it more desirable for fences, walls or out-buildings than for house or porch.

No blossoming vine that grows can excel the flowering Clematis for show, but many people are afraid to try them, having seen many failures. It is true that the Clematis must have special treatment. But give them good drainage, plenty of water, very rich dirt, and set the crowns eight inches below the surface of the ground, and they will not fail. The flowering Clematis will not grow in shade, nor does it do its best in full sunshine, tho I know one, Clematis Paniculata, having tiny white flowers, that grows on a south-west porch and is like a bank of snow every August, perfuming the air all around it. Clematis Jackmani is the large flowered, purple kind whose flowers last so long. Clematis Henryi is like it only a lovely, creamy white, winning the admiration of all. Any of these cost forty cents each. The large flowering kinds do not grow especially fast and should not be depended upon for shade. But care and money can not be better spent than on Clematis to display its beauty beside the sturdier, shadier native vines.

Mayer's HONORBILT

SHOES FOR MEN

These splendid men's shoes represent the best there is in shoe leather. Every piece of material is of the choicest tannage. The workmanship is perfect; the styles are up-to-date. When it comes to service, there is nothing that equals them in lasting qualities.

"HONORBILT" SHOES

are everything the name implies. They are "built on honor." No matter where you look, or what you pay, you will never find anything that will outclass them in wear, style or comfort.

If your dealer will not supply you, write to us. Look for the Mayer Trade Mark on the sole.

FREE—Send us the name of a dealer who does not handle Mayer Honorbilt Shoes, and we will send you free, postpaid, a beautiful picture of George Washington, size 15 x 20.

We also make Leading Lady Shoes, Martha Washington Comfort Shoes, Yerma Cushion Shoes and Special Merit School Shoes.

F. Mayer Boot & Shoe Co.
MILWAUKEE, WISCONSIN

Armor Brand Tinware

is coated with an extra heavy coat of pure tin—that's why **It Wears and Wears**

When you buy tinware, buy by the name **Armor Brand** and prove its superiority to yourself—then remember the name and you'll *always* be able to get good tinware. Be sure the **Armor Brand** label is on every piece you buy.

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is the only tinware made and sold under a trademark label. That label is your guarantee of good quality. If your dealer hasn't it send us his name and we'll see that you are supplied.

Send for Free Recipe Book
"Wholesome Cooking Without Waste"

THE REPUBLIC METALWARE COMPANY
Chicago 2 Republic Street, Buffalo, N. Y. New York

BETTER THAN "FIRSTS"

There are, what the rubber boot maker calls, "firsts and seconds." Formerly, "firsts" were the best that could be made, and "seconds" were "firsts" with flaws in them. Nowadays, "firsts" only mean, best workmanship—but not best rubber. Price competition started the use of remelted "old junk" rubber. "BUFFALO BRAND" rubber boots are made only of lively pure Para rubber—that's why they wear better and longer than others. Therefore, the best workmanship with the best (Para) rubber has made Buffalo Brand known as "Better than Firsts." Look for yellow label. Insist on your dealer telling you all he knows about these rubber boots—INSIST.

W. H. WALKER & CO., 77-83 So. Pearl St., Buffalo, N. Y.

A \$50 MACHINE for \$19

New Model with Ball Bearing Head and Stand—Automatic Tension Release—Automatic Lift Drop Head—High Arm—Oak or Walnut Table.

We Pay the Freight and Allow 90 Days' Trial

Our new model, improved Mich. Farmer sewing machine has cam thread take up, giving better control of the thread and making a better stitch than any other arrangement. Running it backwards will not break the thread. It has highest arm, disc tension, automatic bobbin winder with loose band wheel, high lift for heavy work.

Guaranteed for **20 YEARS.**

and money refunded if not satisfactory after 90 days' trial. Complete attachments, accessories and illustrated book free. We guarantee this machine to be first-class in every particular, handsome in appearance and equal to any machine made. Same machine without the automatic Lift for only \$18.

Good Machines as low as \$12.

For \$7 extra will send the \$19 machine with automatic lift in a handsome cabinet frame.

We prepay freight to any freight station east of the Mississippi River, or south to Tennessee. You cannot afford to buy a machine until you have sent for our handsome illustrated free catalog, printed in colors.

THE MICHIGAN FARMER, Detroit, Mich.

I want to say that my sewing machine came all right and I have given it a thoro trial and find it perfectly satisfactory in every way. Can't see but that it is just as good as the high priced machines and runs just as easy.—Mrs. W. N. Calling, Oblong, Ill.

AERMOTOR PUMPING DEVICES

Are known and used the world over. Hundreds of thousands of **AERMOTORS** in use. Thousands of **GASOLINE PUMPS** in use.



\$25

NOTE THE ROOM IN THE BASE OF THIS TOWER FOR PUMP, TANK OR STOCK.

Buy an 8-ft. Aer-motor. This is the galvanized-steel Aer-motor which revolutionized the wind-mill business. It contains every improvement which wide experience has shown to be desirable.

The Aeromotor Gasoline Pump is easily attached to "any old pump" in 30 minutes. The engine and pumping gears are assembled in one simple, compact and durable machine which is complete in every detail and ready to set up and go to work. It will pump as much water as an 8-ft. windmill and will run as many hours a day as you desire.

We make so many of these engines that we have put in the facilities for building them perfectly.

We are almost ashamed of so low a price on an engine so well designed and so well built, but we are proud of the engine.

No other pumping device ever gained such great popularity or reached such great sales in so short a time.

PRICE
\$37¹/₂

For engine complete with walking-beam and supporting frame.

You can afford to have one of these on every well.



These attachments have been devised to provide the easiest, quickest and most substantial way for connecting to any style of pump which is already in the well. Everything is supplied for setting up complete as shown, except the stakes.

\$27 Buys a 30-ft. Trussed Tripod Tower with unobstructed base.

It occupies very little room, requires little attention, and gives a large amount of service. The supporting frame is clamped to the pump standard, making a very solid and compact arrangement.

This does not appear again. Write now for circulars and testimonials.

AERMOTOR CO., Campbell Avenue and 12th Street, CHICAGO

5 Acres in Oregon Will Do

A fruit farm of 5 acres in any of the great Oregon apple, peach and pear districts, puts money in the bank for you, and gives you your living besides.

You can care for five acres of trees yourself, without help.

Orchards each year yield \$500 an acre and upwards. Prove this by sending for our free book on the Pacific Northwest, or, better still,

Come West and See

All the land there ever was—or will be—was created ages ago. But population keeps increasing—a baby is born every minute.

All the free land worth having has been taken up. All the good land, at low prices, that's left, is going fast. Soon land chances, like those in the west today, will be gone forever.

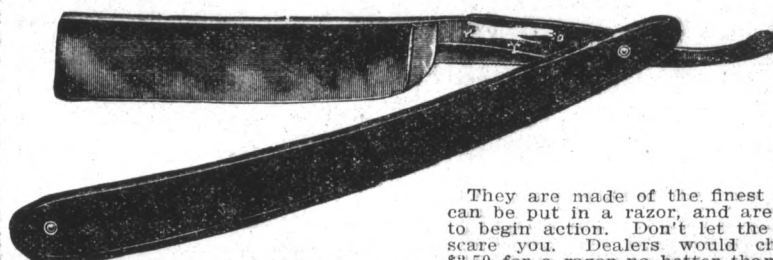
If you want a fine farm or fruit ranch anywhere in the Northwest, get one now before the price gets too high—write to us for our free book. It is costing you money to wait—write today.

E. L. LOMAX, G. P. A.
Union Pacific Railroad Co.
Omaha, Neb.

A COMBINATION PRICE ON THEM
The Razor—The Razor Sharpener—The Safety Guard
ALL FOR ONLY \$3.75,

or with the Michigan Farmer a year only \$4.00. All sent postage or express charges paid. Address **THE MICHIGAN FARMER, Detroit, Mich.**

Once Over With This Will Do



A Guaranteed German Razor.

They are made of the finest steel that can be put in a razor, and are all ready to begin action. Don't let the low price scare you. Dealers would charge you \$2.50 for a razor no better than what we ask 75 cents for. Each razor fully guaranteed. There can be nothing better in a razor, regardless of price. Order at once, 75 cents, postage paid. 8 cents extra if registered. You will not have to saw your beard off. Once over will make your face smooth as a baby's. We use one and know whereof we speak. With The Farmer a year \$1.25; 2 years, \$1.65; 3 years, \$2.00.



The Eight Great Wonder of the World

But More Useful to you than any of the others.

AN AUTOMATIC RAZOR SHARPENER

It Renders Honing Forever Needless.

It will take a dull razor and make it even better than when new. Two of the editors of this paper are using one and they each paid \$3.50 for theirs. They thought that our readers ought to know about them, so we arranged to buy them in quantities and offer them to those of our subscribers who want them. We are not allowed to sell them for less than the regular price, \$3.50, but we are allowed to throw in a year's subscription to the paper with every sharpener and will pay delivery charges.

Full directions with each. The price may seem high, but remember you have an article that will hone a dull razor and keep it in perfect shaving order for life. There is no possibility of cutting the strop. A child can operate it. Present subscribers may have their term advanced one year or the paper may be sent to another address, or if you prefer, we will, in place of the paper, send **FREE ONE OF OUR 75 CENT GERMAN IMPORTED RAZORS**—none better. You may never know what a good shave is until you use one of these marvelous sharpeners. They are in no way complicated. You simply slip the razor in, give the strop 10 to 20 pulls, and your razor is in perfect condition.



LOOK AT THE CUT!

You see what will make a Safety Razor out of your own unsafe razor; with the little device you cannot cut yourself while shaving. and it only costs 30c.

There are other kinds similar but not as good. This safety appliance fits any kind or size razor. It is made on a scientific plan. It is all right for what it is for, a safety guard, easily put on and off and cleaned, and we sell it for only 30 cents, (regular price 50 cents,) postage paid, or will send one with one of our imported German razors both for \$1.00, postage paid. Order one now. Address **THE MICHIGAN FARMER, Detroit, Mich.**

Most children eat too much, overtax the digestion, get thin, weak, languid, stop growing—that's malnutrition or non-digestion of food.

Scott's Emulsion

has helped countless thousands in this condition. It is both nourishment and medicine—a most powerful aid to digestion.

A small dose three times a day will work wonders, but be sure to get **Scott's**.

Send this advertisement, together with name of paper in which it appears, your address and four cents to cover postage, and we will send you a "Complete Handy Atlas of the World" :: :: SCOTT & BOWNE, 409 Pearl Street, New York

SO EASY—SEEMS LIKE PLAY
Your Boy can work
all Day without
Fatigue
if you have a
KRAUS Pivot-Axle
Sulky CULTIVATOR



A delight to the farmer. Works so easily, operator is always in a good humor. The horses furnish the power. Wheels and shafts act together. The driver merely guides. A slight foot pressure, with no lost motion, moves the wheels and shafts simultaneously to the right or left. Responds to pressure as easily as piano keys. Width between gangs and depth of shafts instantly and easily adjusted while machine is in motion.

No Tired Feeling if You Use the KRAUS all Day
Hillsides, Uneven Land and Crooked Rows Cultivated as Easily as Level Ground.

Simplest in construction—least number of parts—nothing to get out of order. Steel frame. All castings malleable iron. Every part accessible. Built for wear and work. Light draft and perfect balance. Made in high and low wheel and Kraus Pivot Gang. Accept no substitute. If your dealer does not handle the KRAUS write us for our free descriptive catalogue.

AKRON CULTIVATOR CO.
DEPT. 12 AKRON, OHIO



Miller
Manure
Spreader
and Pulverizer



Makes fine and spreads evenly. Everything controlled from seat; start beater or feed, or both, change to thick or thin spreading, without stopping. The

Only Low Down Spreader.

Just right for use in cow barns and for driving under low sheds—easy to load. Right width to straddle corn rows. No waste or scattering in yard or on road, no freezing manure on box. Solid bottom, scraped clean every load. Automatic drag return. Double wheel drive, safety end-gate, strength to stand the rough driving and the operating of machine.

Send for Free Catalog B* It describes the modern spreader that has proven itself right. The Newark Machine Co., Newark, O.


Mishawaka Side Jumper

Iron Standard, Solid Steel, Double Edged, Reversible Coulter.



Improved Steel New Ground Plow.
Address for descriptive circular
MISHAWAKA PLOW COMPANY, Mishawaka, Indiana.

HENCH'S 20th-Century
Steel Ball Coupling Pivot Axle
Cultivator with Double Row Corn Planter and Fertilizer Attach Complete in One Machine.



Awarded **GOLD MEDAL** at World's Fair, St. Louis. A wonderful improvement in cultivators, combining every possible movement of gangs and wheels required. Easily changed to different styles. Thousands in use. Mfrs. of all kind of Agr. Implementations. Agents wanted; write for circular.

The Hench & Dromgold Co., Mfrs., York, Pa.

HORTICULTURE

GARDEN WORK FOR LATE APRIL.

With the usually frisky weather of April which must always be considered as a factor in deciding what may, and what may not be timely for the early spring work, it is not easy to formulate dependable rules as to planting and sowing time. One point, however, is pretty easily settled, viz., that under almost any conditions the garden ground should all be plowed and cultivation started at the latest by April 20th. Whether the ground is to be used at once or not, cuts but small figure. The important point is, the storage of moisture for future needs; and the early plowing and frequent culture are the only means of conservation. The April winds and frequent hot sunshine jump up the moisture with incredible rapidity and later on we are almost certain to suffer for what has thus gone up in smoke. Another decided advantage is the wholesale destruction of weed seed. So early plowing and frequent working up to planting time will largely solve both the moisture and weed problems. As to varieties for the earlier plantings, that depends much upon hardness and habit of growth. Some kinds of vegetables will withstand the risk of early planting and for best yields require all of the growing season; while with other sorts it is an utter waste of time to start until soil and weather have become warm and settled. The following table of average time of planting the main varieties of vegetables as well as their period of growth for this latitude may be of service to many and will be worth preserving:

Asparagus, April and May, 2 years from roots.
Beans, early May to July, 7 to 9 weeks.
Beets, April to July, 8 to 9 weeks.
Cabbage, April to July, 75 to 120 days.
Carrots, April to June, 85 to 150 days.
Celery, April to July, 3 to 4 months.
Corn (sweet), early May to July, 65 to 80 days.
Cucumbers, May 15 to June 15, 75 to 90 days.
Egg Plant, start seed in April, 130 to 150 days.
Lettuce, in open ground, April 1st to July, 60 to 70 days.
Melon (water), May 15 to June 15, 115 to 140 days.
Melon (musk) May 15 to June 15, 115 to 140 days.
Onions, April 1st to early May, 125 to 140 days.
Parsley, March and April, 125 to 140 days.
Parsnip, April to early May, 120 to 150 days.
Peas, April to early August, 65 to 85 days.
Pepper, transplant early to late May, 135 to 150 days.
Potatoes, early May to late June, 60 to 120 days.
Pumpkin, May 15 to June 15, 100 to 130 days.
Radish, early April to July, 35 to 50 days.
Rhubarb, April to May 15, 2 years from roots.
Spinach, April and Sept., 30 to 40 days.
Squash, May 1st to June 15, 110 to 140 days.
Tomatoes, March or April, from seed, etc., 4 to 5 months.
Turnips, early April to August 15, 60 to 75 days.

The above dates are, of course, only approximate, but are that to be as nearly conservative as possible, and in a general way are useful. It must be remembered, however, that even the closest calculations possible will vary widely oftentimes in actual practice. For instance, the same variety of vegetable planted when weather and soil are still cold and unfavorable will require much longer time to mature than when the ground has become thoroughly warm and the weather has become settled and steady. There are many chances to run at best and often a belated visit from Jack Frost entirely upsets many a rosy calculation. So all we can do is to act upon our best judgment and leave results in the hands of One wiser than we.

There are some points in the nature and habit of growth of various vegetables that may be studied with profit. They all have their special season for highest and best development; and planted or started outside of that limit, results will be more or less disappointing. Some kinds often called cool weather plants, are at their best during the cooler weather of early spring or late autumn, while others are directly the reverse and make their best growth in the warmer months of mid-summer. So much study along these lines is profitable. As to the former class, cabbage, cauliflower, lettuce, peas, radishes, onions, etc., are notable examples, while many others, as nearly all the vine crops, peppers, egg plant, sweet corn and many others belong

to the latter class. Nearly all the root crops belong in the former list while the entire bean family are tender plants, unfitted by nature to withstand the cold weather either of the early or late season.

From the foregoing it is plain that we may not, with certainty, determine the special work of next week or the week following. With reasonable knowledge of our soil, surroundings and growth habit of the various vegetable crops it is not difficult to determine what must take preference as to early planting. So for best results, we should aim to start each kind just at its proper season and as early as right conditions will admit.

One point should always be borne in mind: the first early crops are the money makers, and the plowing and fitting of the ground should be ready and waiting for the earliest possible sowing and planting.

Wayne Co.

J. E. MORSE.

COLORING FRUIT BY FERTILIZATION.

It is often stated that certain fertilizers will produce certain colors in fruit. After a 12 years' test in fertilizing an apple orchard of Baldwins, Pippins, Greenings, Roxburys and Northern Spies, Prof. U. P. Hedrick, of the New York station, says that the results were not decided enough in a sufficient number of the 12 seasons to enable us to state that the fertilizers applied improved the color of the apples. Professor Hedrick further says that fruit growers should not apply manures in quantity until good evidence has been obtained as to what food elements, if any, are wanted by the soil. This should be ascertained by fertilizer tests conducted directly in the orchard in question.

THE COMMERCIAL APPLE ORCHARD.

First among the essentials of success in commercial apple growing is that the soil must be adapted to the business and that very good and very poor locations may lie side by side. Nearly every farm contains some land that is adapted to apple growing, altho very few farms as a whole, would prove adapted to the industry. Soil and location are fully as important factors as the climate.

A careful study of the conditions surrounding the orchards that were planted in the early times has proved to us that in selecting an orchard site the most important things to consider are the character of the soil, exposure and shelter. Good deep soil, composed largely of vegetable matter, with sand and gravel or clay, is ideal. The scarcity of timber that formerly afforded wind-breaks make it essential that we select northeastern, northern or eastern exposures or slopes for an orchard. On land that affords a natural wind-break, or where there is no protection from timberland or groves, a double row of evergreens may be used to advantage as a wind-break.

After determining on the site of the proposed orchard, the next important step is that of properly preparing the soil. The old saying that the "hole should be the same size as the orchard," is a safe rule to follow and means literally that we should carefully fit the field at least one year before the trees are to be planted. It is a loss of time and money to plant trees on wet and undrained soil.

We have also learned that the selection of the varieties best adapted to our conditions in a great measure means success or failure. The desire to plant too many varieties of apples has resulted in flooding our orchards with undesirable fruit, in many instances without regard to market demands, quality or profit. The most profitable commercial orchards in the state are those containing from one to three varieties. Planting a few varieties for home consumption or for home markets is a different proposition from commercial apple growing.

For a commercial orchard in this latitude there are three market apples that stand in a class by themselves, the Baldwin, Northern Spy, and Greening—all great market favorites that possess good keeping qualities. The Twenty Ounce Pippin and the Tompkins County Kings are excellent fall and early winter apples, but they must be marketed in their season regardless of the market conditions. Hardy varieties must be selected regardless of their beauty or form or quality. Select the best trees that can be found and above all, select them from the stock of some first-class nurseryman, who sells good trees instead of making panic prices to get rid of a lot of old stock that has accumulated on his hands.

In setting out trees, give them plenty

YOU may know of something better for killing bugs than C T Reynolds & Co pure Paris Green—we don't; if we did we would make it for you.

It's absolutely pure, full strength, effective; better than the adulterated kinds; its use means fewer bugs; more potatoes; more potatoes mean more profit.

Ask for it of any good dealer, and be sure you get it. If he will not supply you, we will.

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without a cent in advance. No bank deposit—no strings—to our trial offer. Spray First, then if you buy—pay us out of the Extra Profit. Wholesale Prices. We pay Freight. Write us a letter or card and tell us which machine you are interested in—and you'll get free our valuable Spraying Guide and Catalog, and our Free Sprayer offer to First in each locality this season. Be First to write and save money.

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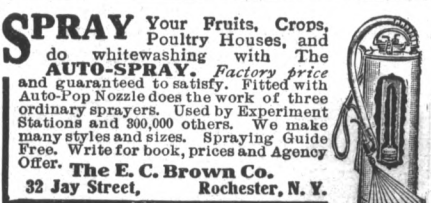
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Or send 14c and we add a sample farm seed novelty never seen by you before.

JOHN A. SALZER SEED CO., LaCrosse, Wis.

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S-K-A-B S-K-O-O-T Destroys Scab on Potatoes, non-poisonous and in powdered form. Ask your dealer or address **PAY'S S-K-A-B S-K-O-O-T CO., Detroit, Mich.**

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That's what potato growers say, and they know. Book free. Get it and see how we lead the world on potato machines.
ASPINWALL MANUFACTURING CO.
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The CLIPPER
There are three things that destroy your lawns, Dan delions, Buck Plantain and Crab Grass. In one season the Clipper will drive them all out.
Clipper Lawn Mower Co.,
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OATS
(Sensation: Great yielder. (Weigh 40 lbs. per bushel). Also Seed Corn, Potatoes, Alfalfa and Clover Seed. Samples and catalog free.
THEO. BURT & SONS, Melrose, Ohio.

of room. I would set apple trees forty feet each way at least. If you feel that you cannot afford to use so much land, plan to grow some small fruit between the apple trees, and by the time the apples are ready to occupy the interspaces the small fruit trees may be removed and give them the whole of the field. We may be able to grow cornstalks and trees by close planting, but when it comes to growing first-class crops of corn and apples we shall find it essential that the stalks and trees have plenty of light, air and space for their roots.

I believe that there is but one way for the trees to grow to insure the greatest hardness. The practice of low heading may be adapted to some sections of the west where the climatic conditions are not the same as in this state. The remarkable results secured by some western apple growers may be due in some measure to low heading; but in my opinion the different soil and climate are more important factors than pruning. It is useless of us to expect similar results in this climate. From my experience and observation among the commercial orchards of the west and southwest, the low-headed trees are, as a rule, short lived and unsightly. As they grow larger and branches grow longer there is a tendency to split apart at the trunks and break down.

While advocating pruning trees higher than is the practice of many, I am by no means in favor of high training. The branches should afford protection to the trunks during the hot summer after the trees come into bearing. My ideal tree is trained high enough to secure the growth of the branches at right angles with the trunk, otherwise they will form what has been aptly termed malformed crotches by the tendency of the lower branches to form an upward growth. Every tree should have a center shaft on which the branches should be regularly distributed, never allowing a number of branches to cluster together on any one side to overbalance the top of the tree. Pruning is a necessary evil and more of it should be done. Summer pruning has a tendency to check the growth of the wood, and in some instances is injurious to the tree.

Spray, by all means, and spray often. It has been the means of saving the industry from ruin. Nothing will pay better returns for the work expended in cultivation than the apple orchard, and nothing will suffer more from neglect. The first few years some hood crop will prove adapted to young orchard soils. Do not expect to get a full farm crop from the orchard soils. When we set out to care for our orchards as we do for our other farm crops, there will be less cry about the climate and we shall get as certain returns as we do from other agricultural products.

New York. W. MILTON KELLY.

NUT TREES FOR CLARE COUNTY.

What nut trees are adapted to Clare county? What soil will best suit them? How far apart should the trees be planted? Should they be cultivated? When will they begin to bear?

Clare Co. SUBSCRIBER.

1. Black walnut, shagbark hickory, chestnut.
2. Walnut, shagbark hickory on a well drained loam. Chestnut on a sandy loam.
3. The nuts should be planted 20x20 feet apart each way if for orchard purposes; for timber use plant 4x4 feet apart each way and thin out after the first ten years to eight feet.
4. Cultivate the same as for corn.
5. I know of one black walnut tree at the age of eighteen years which produced seven and one-half bushels of nuts, worth in the open market, twenty-five cents per bushel. This was during the season of 1908. Chestnuts have borne nuts at the end of the third year here at the College when planted in nursery rows, and have borne quite profusely at five years of age. Black walnuts have borne at ten years from seed.

Agril. College. J. F. BAKER.

BARK BEETLES OR BARK BORERS

Two species of bark beetles caused great damage last year to peach and cherry trees in various quarters of northern Ohio on the Marblehead peninsula. One species, Scolytus rugulosus, commonly known as the shot hole borer, is an old offender and attacks nearly all varieties of fruit trees and some forest trees. The second species, Phloeotribus liminaris, which has been called the peach bark beetle is a comparatively new pest and largely confines its injuries to cherry

and peach. The work of the two species is very similar. The adult beetles bore thru rough places in the bark of living or dead trees, into dead peach or cherry wood piled up for stovewood, into the twigs of brush heaps or into any suitable wood upon which they can feed and in which they make brood chambers.

They make galleries thru the living sapwood of peach and cherry and their presence is nearly always indicated by excessive exudation of gum from the infested trunks and limbs. Weakened trees are preferred by the beetles but those in perfect health may be so repeatedly attacked that they finally offer the right conditions for breeding, and the insects then mass their attack on the exhausted trees, making short work of their final destruction. Trees are often practically destroyed before their owners become aware there is anything wrong.

The following measures are recommended in infested districts this season:

For trees seriously injured: Cut the tree back to stubs of the main limbs and apply barnyard manure or commercial fertilizer, 7 to 8 pounds per tree, in spring. The following formula is suggested for commercial fertilizer: phosphoric acid, 8 per cent; nitrogen, 5 per cent; potash, 2 per cent. Give a second application of 3 or 4 pounds per tree about the first of June. Apply in a circle equal to the spread of the limbs and rake, hoe, or disk into the soil. Apply a thick coat of whitewash by means of a broom the last week in March or during the first two weeks in April. Give a second application the second week in July; and a third about the first of October. Add one-fourth pound of table salt to each pail of whitewash to make it stick longer.

For trees seemingly healthy and slightly attacked or liable to attack: Fertilize, cultivate and whitewash.

In all cases carefully burn all trimmings and dead wood and grub out dead trees and burn so as to limit breeding grounds.

Ohio Exp. Sta. H. A. GOSSARD.

WINTER-KILLING OF FRUIT TREES.

Investigations made at the Ohio Experiment Station show that while a severe and long-continued cold spell is a general or direct cause of injury to fruit trees, generally speaking, it was ascertained that where the vitality of the trees or orchard had been lowered by any cause whatever during its previous history the chances of injury to the tree by the cold were by so much increased. Factors observed in different orchards which contributed to low vitality in the trees were an insufficient degree of fertility, a low physical condition of the soils, prevalence of San Jose scale, leaf curl, peach-tree borers, extremely dry condition of the ground in some sandy and gravelly ridges, "water-logged" soils, etc.

The experiments also showed the value of an annual cover crop as compared with clean cultivation. In one section under observation a grower stated that "not a single orchard or section of an orchard of which he knew, that had received even a light dressing of barnyard manure within a year or two, suffered from cold."

G. E. MITCHELL.

The garden should be located or drained so work can be begun there before the fields are ready. It then makes a good place to get the plows and harrows properly adjusted, the corn planter in working shape and to do many other little tasks which will result in its being prepared early, and in saving time when the tools are put to their regular work.

FINEST FRUIT IN THE NEIGHBORHOOD.

Mr. William E. Graves, Maderia, Ohio, writes: "I must say that I am surprised at the great success I have had with the use of Pyrox. It was used according to directions on apple trees and I have some of the finest fruit in the neighborhood, in fact, the only orchard that has any fruit this year, and we are selling apples at home to neighbors who have plenty of trees, and thanks to Pyrox, we are getting good long prices."

"Pyrox" does not wash off the foliage like Paris Green, but sticks like paint thru even heavy rains. We endorse it. Address this paper or Bowker Insecticide Co., Boston, Mass.

SICK DOCTOR

Proper Food Put Him Right

The food experience of a physician in his own case when worn and weak from sickness and when needing nourishment the worst way is valuable:

"An attack of grip, so severe it came near making an end of me, left my stomach in such condition I could not retain any ordinary food. I knew of course that I must have food nourishment or I could never recover.

"I began to take four teaspoonfuls of Grape-Nuts and cream three times a day and for two weeks this was almost my only food; it tasted so delicious that I enjoyed it immensely and my stomach handled it perfectly from the first mouthful. It was so nourishing I was quickly built back to normal health and strength.

"Grape-Nuts is of great value as food to sustain life during serious attacks in which the stomach is so deranged it can not digest and assimilate other foods.

"I am convinced that were Grape-Nuts more widely used by physicians, it would save many lives that are otherwise lost from lack of nourishment."

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Look in pkg. for the little book, "The Road to Wellville."

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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Buy direct from the biggest spreader factory in the world—My price has made it a Saved dealer, jobber and catalog house profit. No such price as I make on this high grade spreader has ever been made before in all spreader history. Here's the secret and reason: I make you a price on right based on a 25,000 quantity and pay the freight right to your station. You only pay for actual material, labor and one small profit, based on this enormous quantity on a

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Drop me a postal, and say—"Galloway, send me your new proposition and Big Spreader BOOK FREE with low price direct from your factory."

Nobody can beat it. Freight Prepaid



Western Canada the Pennant Winner "The Last Best West"

The Government of Canada now gives to every Actual Settler 160 Acres of Wheat-Growing Land FREE and an additional 160 acres at only \$5.00 an acre. The 300,000 contented American settlers making their homes in Western Canada

give the best evidence of the superiority of that country. They are becoming rich, growing from 25 to 50 bushels wheat to the acre, 60 to 110 bushels oats and 45 to 60 bushels barley, besides having splendid herds of cattle raised on the prairie grass. Dairying is an important industry.

The crop of 1908 still keeps Western Canada in the lead. The world will soon look to it as its food-producer.

"The thing which most impressed us was the magnitude of the country that is available for agricultural purposes."—National Editorial Correspondence, 1908.

Low Railway Rates, good schools and churches, markets convenient, prices the highest, climate perfect. Lands are for sale by Railway and Land Companies. Descriptive pamphlets and maps sent free. For Railway Rates and other information apply to Sup't of Immigration, Ottawa, Canada, or to the authorized Canadian Government Agent.

M. V. McInnes, 6 Ave. Theatre Block, Detroit, Mich.; O. A. Laurier, Marquette, Mich.

SEED OATS—Great Russian variety, Silver Plume, no smut or rust, out yields other kinds 10 to 20 bu. per acre. \$1.50 per bu. bags free. J. C. BUTLER, Portland, Mich.

PEACH TREES, 3c; Apple, 5c; Cherry, 12c. All kinds of fruit trees and plants. Get cata. ERNST'S NURSERIES, Moscow, O.

1,000 BU. SILVER MINE seed oats at 90 cents per bu., f. o. b. here. New grain bags free. Yielded me last year 80 bu. per acre. No smut. WM. SKILLMAN Oxford, Mich.

Onion Seed—We are extensive growers and dealers in all the prominent varieties. Write us. Schilder Bros., Chillicothe, Ohio.

Seed Corn—Reid's Yellow Dent, Imp. Early Learning and White Cap Yellow Dent, \$1.50 bu. Also Sensation Oats that weigh 40 lbs. bu. Catalog and samples free. THEO. BURT & SONS, MELROSE, OHIO.

MARKETS

DETROIT WHOLESALE MARKETS.

April 14, 1909.

Grain and Seeds.

Wheat.—During the past two weeks prices for cash wheat have advanced ten cents per bushel. From every quarter of the world comes reports of the shortage in the wheat supply. Argentine sent out fully 20,000,000 bushels less this season than a year ago. The European markets are all calling for larger amounts than normal and the crop conditions in this country are anything but encouraging to those who desire lower prices. The government report issued last Saturday places the prospects for the coming crop three points below the estimates made for December. In the spring wheat sections however, plans are being made for a large acreage this season. The decrease in the visible supply is large. The call from millers is keeping the cash deal active so far as grain can be found to supply their wants. A year ago the price for No. 2 red wheat was 93¢ per bu. Quotations for the past week are:

	No. 2	No. 1	No. 3	Red.	White.	May.	July.
Thurs.	1.35	1.35	1.32	1.33	1.13		
Fri.	1.37	1.37	1.34	1.36	1.15		
Sat.	1.37	1.37	1.34	1.36	1.15		
Mon.	1.39	1.39	1.36	1.38	1.18		
Tues.	1.40	1.40	1.37	1.39	1.18		
Wed.	1.40	1.40	1.37	1.39	1.17		

Corn.—The chief strength in this department has been the bullishness of the wheat deal. But for that support it is possible that declines would have taken place. The receipts generally are larger than estimated and the weather in the southern states where preparation of ground for the new crop has begun was encouraging the past week. In the local market there are more sellers than buyers. The movement is small. A year ago the price for No. 3 corn was 67¢ per bu. Quotations are:

	No. 3	Yellow.
Thursday	68½	69
Friday	68½	69
Saturday	68	69
Monday	68	69
Tuesday	68½	69½
Wednesday	69½	70½

Oats.—Prices are ruling on the same basis as last week. The bulge in the wheat trade supported the market, and, but for which there is probability that a decline would have followed the receipt at New York of large quantities of the grain from Argentine. Weather conditions are favorable for the sowing of the new crop. One year ago the price for No. 3 oats was 56½¢. Quotations are:

	No. 3	White.
Thursday	57½	
Friday	57½	
Saturday	57½	
Monday	57½	
Tuesday	57½	
Wednesday	57½	

Beans.—There is a demand for the legumes at present quotations but sellers do not show up, the figures having no charm. On Saturday the board agreed to mark up prices, but the change was without result in moving holders to loosen up. Nominal quotations are:

	Cash.	May.
Thursday	\$2.36	\$2.42
Friday	2.40	2.45
Saturday	2.40	2.45
Monday	2.40	2.45
Tuesday	2.40	2.45
Wednesday	2.40	2.45

Cloverseed.—The new seedling is not looking real good and there is some despair that the coming crop will be small as a result. This condition has worked prices to a higher level for future goods. Cash seed has gone higher on account of the demand for sowing with spring crops. The following are the quotations for the past week:

	Prime	Spot.	Oct.	Alsike.
Thursday	\$5.60	\$6.50	\$8.00	
Friday	5.75	6.55	8.00	
Saturday	5.75	6.55	8.00	
Monday	5.75	6.55	8.00	
Tuesday	5.75	6.55	8.00	
Wednesday	5.75	6.55	8.00	

Rye.—Market is firm and trading light. Offerings are small. The price is 85¢ for cash No. 2, the same as last week.

Visible Supply of Grain.

	This week.	Last week.
Wheat	34,874,000	36,142,000
Corn	6,311,000	6,223,000
Oats	9,403,000	9,062,000

Flour, Feed, Provisions, Etc.

Flour.—Prices were again advanced 25¢ on all grades. Quotations are as follows: Clear \$6.00
Straight 6.15
Patent Michigan 6.50
Ordinary Patent 6.25

Hay and Straw.—Prices unchanged. Carlot prices on track are: No. 1 timothy, new, \$10.50@11; No. 2 timothy, \$9.50@10; clover, mixed, \$9@10; rye straw, \$8@8.50; wheat and oat straw, \$7@7.50 per ton.

Feed.—Unchanged. Bran, \$28 per ton; coarse middlings, \$29; fine middlings, \$30; cracked corn and coarse corn meal, \$29; corn and oat chop, \$27.

Potatoes.—The old potato market showed unusual strength last week all over the country and the local market advanced the price to the dollar mark. Good stock is quoted at \$1 per bu. New Bermudas, \$2.50@2.75 per bu.

Provisions.—Family pork, \$18.50@19; mess pork, \$18; light short clear, \$18.50; heavy short clear, \$19.50; pure lard, 11½¢; kettle rendered lard, 12½¢; bacon, 13½¢; shoulders, 8½¢; smoked hams, 12¢; picnic hams, 8½¢.

Dairy and Food Products.

Butter.—No change of any consequence has occurred in this trade the past week and a fair amount of business is being done on the basis ruling a week ago. Quotations: Extra creamery, 28¢; firsts, 26¢; packing stock, 15¢; dairy, 18¢.

Eggs.—Altho the Easter demand is past the market has so many strong points that trade is going on with prices slightly improved since last week. The storage people are not getting their usual supply. Fresh stock is being quoted at 19½¢ per dozen.

Poultry.—The trade in live and dressed poultry is firm but the offerings are so short that a large movement is impossible. Quotations: Dressed chickens, 15@15½¢; fowls, 14½@15¢; ducks, 16@17¢; geese, 11@12¢; turkeys, 20@22¢. Live—Spring chickens, 14½@15¢; fowls, 14¢; ducks, 15@16¢; geese, 10@11¢; turkeys, 18@20¢ per lb.

Cheese.—Michigan, 16@16½¢; brick, cream, 17½@18¢; schweitzer, 19@20¢; limburger, June, 15¢; Oct., 17¢ per lb.

Fruits and Vegetables.

Apples.—Market firm. Best grades are quoted at \$5.50@6.50 per bbl. Western apples in bushel boxes, \$3@3.75.

Onions.—Spanish, \$1.80 per bu; home-grown at 70@75¢ per bu; Bermudas, \$2.75 per crate.

Vegetables.—Green onions, 15¢ per doz; radishes, 25¢ per doz; cucumbers, \$1.25@1.50 per doz; lettuce, 12¢ per lb; head lettuce, \$3 per hamper; watercress, 40¢ per doz; spinach, \$1 per hamper; parsnips, \$1 per bu; oyster plant, 40¢ per doz; asparagus, \$1.50@1.75 per doz.

OTHER MARKETS.

Grand Rapids.

Egg dealers looked for a drop the day after Easter but were disappointed, the market remaining firm. They are paying the country merchants 18¢ case count. The dairy butter market is also firm, the quotations are unchanged. Dressed hogs are scarce and higher, being quoted at 8½¢, and in some cases 9¢ has been paid farmers. Potatoes are higher. The sale of 8,000 bu. at Traverse City this week for \$1 per bu. is causing a stir in other markets throughout the state. Wheat continues to soar, the price this week reaching \$1.35.

Quotations follow:
Grains.—Wheat, \$1.35; corn, 68¢; oats, 55¢; buckwheat, 60¢ per bu; rye, 75¢.

Beans.—Handpicked, \$2.25 per bu.
Butter.—Buying prices, Dairy, No. 1, 21¢; No. 2, 16¢; creamery in tubs, 26½¢; prints, 27¢.

Cheese.—Michigan full cream is selling at 16@16½¢ per lb; brick, 17¢; Swiss, 17¢; limburger, 17¢.

Eggs.—Case count, 18¢.
Apples.—New York, \$5@6 per bbl.

Potatoes.—\$1 per bu.
Cattle.—Cows, \$2.50@4 per cwt; steers and heifers, best quality, \$3@5; dressed mutton, 8@9¢; dressed veal, 6@9¢; dressed beef, cows, 5@7¢; steers and heifers, 6½@9¢.

Hogs.—Dressed, 8½¢.
Live Poultry.—Fowls, 12½@13½¢; chickens, 13@14¢; roosters, 9@10¢; turkeys, 18@19¢; ducks, 13@14¢; capons, 20@21¢; broilers, 1½ to 2 lbs., 28@30¢ per lb.

Chicago.

Wheat.—No. 2 red, \$1.39@1.40; May, \$1.27½; July, \$1.16½.
Corn.—No. 3, 66½@66¾¢; May, 66¾; July, 65¾¢.

Oats.—No. 3 white, 52@54½¢; May, 54; July, 47½¢.

Beans.—Pea beans, handpicked, \$2.44@2.47 per bu. for choice; good, \$2.25@2.30; red kidney, \$2@2.10.

Butter.—Steady. Creameries, 22@28¢; dairies, 19@25¢.

Eggs.—Steady, Firsts, 19½¢; prime firsts, 20½¢.

Potatoes.—Steady. Car lots in bulk, Fancy, \$1@1.02 per bu; ordinary, 98@99¢.

Pittsburg.

Potatoes.—Michigan, 95¢@1.05 per bu.
Apples.—Steady. King, \$6.25 per bbl; Spy, \$5@5.50; Spitzenburg, \$5@5.50.

Eggs.—Fresh candled, 19@19½¢ per doz; current receipts, 18@19¢.

Butter.—Creamery, 29½¢; prints, 30½¢ per lb.

Elgin.

Butter.—Market continues firm at 28¢ per lb., which is last week's price. Sales for the week amounted to 458,000 lbs. as compared with 445,200 for the previous week.

Other Potato Markets.

New York.—Per 180 lbs., \$2.62@2.87, which is an advance of 12¢ over last week's quotations.

St. Louis.—Northern stock quoted at \$1@1.05 per bu.

Philadelphia.—For good offerings, 93@95¢ per bu.

Boston.

Wool.—There is little to be said about the wool situation. This is the "between" season where the old clip has passed into the hands of the manufacturers and the new clip is not actively upon the market. However, agents are in the west and central states doing some contract work at prices that look good to the growers. The new clip is surely to meet a good demand and the prospects for the trade were never better than at the present time. Contracting in Ohio and Michigan is being pursued, with prices around 25 cents.

THE LIVE STOCK MARKETS.

Buffalo.

April 12, 1909.

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

Receipts of sale stock here today as follows: Cattle, 130 loads; hogs, 13,600 head; sheep and lambs, 15,800; calves, 2,400.

The cattle market opened slow and during the first two hours very little business was transacted. After that time however, the trade improved and sales were made at an advance of from 10 to 15¢ per hundred over last week. At the close the yards are fairly well cleaned and we look for some improvement on the

good weight cattle from this time on. A few odd cattle sold today as high as \$6.60, no loads over \$6.50.

We quote: Best export steers, \$6@6.50; best 1,200 to 1,300 lb. shipping steers, \$5.75@6.25; best 1,000 to 1,100 lb. do, \$5.50@6; best fat cows, \$4.50@5; fair to good, \$3.75@4; trimmers, \$2.50@2.75; best fat heifers, \$5.50@5.75; light fat heifers, \$4@4.25; best bulls, \$4.75@5; bologna bulls, \$3.75@4; best feeding steers, 800 to 900 lb. dehorned, \$4.50@4.75; 700 to 750 lb. dehorned stockers, \$4.25@4.50; common stockers, \$3.50@3.75.

The good cows today sold higher but the common kinds were very dull and hard to sell.

We quote: Best cows, \$45@55; common, \$30@35.

The hog market today was fairly active and prices about steady with Saturday. At the close about everything is sold.

We quote: Medium and heavy, \$7.70@7.75; two or three decks choice \$7.80; mixed, \$7.65@7.70; best yorkers, \$7.65@7.70; light yorkers, \$7.25@7.40; pigs, \$7@7.10; roughs, \$6.70@6.75; stags, \$5@5.25.

The lamb market today was a little better than Saturday. We look for steady prices on handy lambs but lambs weighing around 90 to 95 lbs. are in very little demand and are very hard sellers. What few are selling sold from \$8@8.15. There will be about 15 loads of heavy lambs left over tonight. Two or three loads of choice handy lambs sold at \$8.50.

We quote: Top lambs, \$8.35@8.40; fair to good, \$8@8.25; culls, \$7@7.75; skin culls, \$5.50@6.25; yearlings, \$7@7.25; wethers, \$6.25@6.50; ewes, \$5.75@6; cull sheep, \$4@5; best veals, \$8@8.25; medium to good, \$7@7.75; heavy, \$4@5.

Chicago.

April 12, 1909.

Cattle. Hogs. Sheep.
Received today 18,000 34,000 18,000
Same day last year 21,328 37,928 14,747
Received last week 40,296 115,884 68,345
Same week last year 44,606 115,132 59,433

Unusually small as were last week's receipts of cattle, they were sufficient to meet the extremely limited requirements of buyers at a time when the consumption of beef was materially lessened by its great dearthness and a fast observed by a large part of the population of the country. As usual, the receipts were distributed over the week extremely unevenly, the only large arrivals being those of Monday, when prices were largely 10@15¢ lower. Later in the week the small offerings resulted in this decline being recovered, despite the small demand. Beef steers have sold chiefly at \$5.50@6.60, with the commoner kind of light-weight steers going at \$4.75@5.25 and choice heavy shipping cattle at \$6.50@7.10. A good class sold around \$6.10@6.45, with medium steers bringing \$5.50@6. Buyers have ceased to pay the former good premium for longed heavy beefs, and the fat little steers and heifers have come into general favor, the export trade being so small that an important outlet for heavy steers is largely removed. Butcher stock has shown activity and firmness, cows and heifers selling at \$3.30@6.10, with sales of canners and cutters at \$1.90@3.25, while bulls sold at \$3@5.35. There has been a marked increase in the marketing of calves, and prices have weakened, with sales at \$2.75@7.50 per 100 lbs. The stocker and feeder trade has been checked by smaller offerings and advancing prices, sales ranging at \$3@5.60. Cattle weighing 600 to 900 lbs. at \$4.40@5 were the most popular with buyers, and fancy stockers went at \$5. Milk and springers had a fair outlet at \$25@65 per head. Cattle receipts must be held down if prices are to be maintained.

The receipts today were unusually small for Monday, and prices were firm to 10¢ higher, with a \$7.15 top. There was a better export demand.

Hogs are irrepresible and refuse to be held down, every week scoring fresh high records. It is a case of large local and shipping demands, eastern buyers wanting a big share of the offerings, and competition buyers gives sellers a fine opportunity to make their power felt. The average quality of the receipts has undergone marked improvement recently, and the average weight has increased some, but it is still below the level of recent years, being 208 lbs., compared with 212 lbs. a year ago, 229 lbs. two years ago and 219 lbs. three years ago. Provisions have advanced with hogs, despite the fact that they were already extremely high. Fresh pork has been having a large sale, but its consumption is expected to fall off some as the weather becomes warmer. That has been the experience of former years. Hogs are expected to go still higher, as the supply back in the country is understood to be short. The market today was active at further advances of 5@10¢, the receipts being much smaller than usual for Monday. Hogs sold at \$6.95@7.55, a new high record, and among the sales may be mentioned 41 barrows that averaged 454 lbs. at \$7.55 and 40 stags that averaged 520 lbs. at the same price. The best light hogs sold at \$7.47½.

Sheep and lambs sold much better early last week than they did later, and buyers filled their late orders on more favorable terms. Unshorn consignments were greatly preferred by buyers, and shorn flocks had to be closed out at a discount of about \$1.25 per 100 lbs. Colorado lambs made up a big share of the offerings and were much better in quality as a rule, than the native lambs. A few spring lambs of ordinary quality were sold at \$8@12 per 100 lbs., and a few western woolled feeding lambs went at \$7.50. The future promises well for sheepmen who market fat stock, and in all probability it will pay well to make your holdings prime in quality. The lighter receipts today than are usually seen on Monday resulted in better prices, woolled lambs selling at \$7@8.30, and clipped lambs selling at \$6@7.15. Woolled ewes sold at \$3.50@6.50, wethers at \$6.15@6.75, yearlings at \$6.50@7.50 and rams at \$4@5.50.

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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.
April 15, 1909.

Cattle.
Receipts, 995. Market steady at last week's prices.

We quote: Extra dry-fed steers and heifers, \$5.50@6; steers and heifers, 1,000 to 1,200, \$5.25@5.40; steers and heifers, 800 to 1,000, \$5@5.25; steers and heifers that are fat, 500 to 700, \$4.25@5; choice fat cows, \$4.50; good fat cows, \$4@4.25; common cows, \$3@3.50; canners, \$1.50@2; choice heavy bulls, \$4.50; fair to good bolognas, bulls, \$3.75@4; stock bulls, \$3.50@3.75; choice feeding steers, 800 to 1,000, \$4@4.25; choice stockers, 500 to 700, \$3.75@4.25; fair stockers, 500 to 700, \$3.50@4; stock heifers, \$3@3.25; milkers, large, young, medium age, \$4@5.50; common milkers, \$3@3.50.

Roe Com. Co. sold Rattkowsky 2 bulls av 1,070 at \$4.25; to Mich. B. Co. 1 cow weighing 1,020 at \$3.75, 2 heifers av 435 at \$3.35, 2 cows av 1,100 at \$4.25, 1 do weighing 780 at \$2.50, 2 do av 790 at \$3, 2 do av 1,020 at \$4.25; to Newton B. Co. 20 steers av 804 at \$5.10; to Hammond, Standish & Co. 3 cows av 893 at \$3, 1 bull weighing 1,380 at \$4, 4 do av 967 at \$4, 1 heifer weighing 700 at \$3, 23 steers av 901 at \$5.10, 2 do av 910 at \$5.15, 4 do av 845 at \$5.15; to Cooke 8 butchers av 655 at \$4.50, 1 cow weighing 930 at \$3.50, 5 butchers av 770 at \$5, 1 bull weighing 600 at \$3.50; to Caplis 16 butchers av 542 at \$4.25, 1 heifer weighing 730 at \$4.50; to Kamman B. Co. 10 cows av 1,157 at \$4.50; to Newton B. Co. 8 steers av 891 at \$5.25, 1 heifer weighing 730 at \$4.50, 17 steers av 980 at \$5.25; to Sullivan P. Co. 4 butchers av 1,025 at \$4, 4 do av 750 at \$4.75, 16 steers av 1,022 at \$5.30, 20 do av 1,027 at \$5.75; to Snow 1 cow weighing 830 at \$2.50, 2 do av 835 at \$3, 1 do weighing 1,000 at \$4, 3 do av 966 at \$3.25.

Bishop, B. & H. sold W. Kamman 7 steers av 883 at \$5.60, 1 bull weighing 1,000 at \$4; to Kamman B. Co. 1 bull weighing 860 at \$4.25, 7 steers av 990 at \$5.25; to Bresnahan 3 do av 1,020 at \$5.50, 1 cow weighing 1,100 at \$4.25, 1 bull weighing 1,030 at \$4; to Greene 1 cow weighing 850 at \$2.50; to Caplis 1 do weighing 750 at \$2, 5 do av 980 at \$3.50, 5 do av 1,050 at \$3.60, 5 butchers av 760 at \$4.25; to Heinrich 14 steers av 950 at \$5.40; to Rehffuss 2 cows av 1,075 at \$4, 1 do weighing 820 at \$3; to Kull 18 steers av 1,008 at \$5.25.

Spicer, M. & R. sold Dombeky 4 cows av 800 at \$3.25; to Cooper 3 canners av 880 at \$2.75, 5 stockers av 408 at \$3.40, 6 do av 563 at \$3.75; to Bresnahan 5 heifers av 432 at \$3.40, 1 steer av 850 at \$5, 9 cows av 1,200 at \$4, 4 do av 962 at \$3.50, 3 do av 693 at \$3.75, 1 bull weighing 1,230 at \$3.25; to Fry 17 butchers av 583 at \$3.80; to Morgan 1 stocker weighing 670 at \$3.80; to Rehffuss 4 feeders av 875 at \$3.40; to Bresnahan 1 steer weighing 1,170 at \$6, 2 cow and bull av 1,205 at \$4, 4 cow and bulls av 1,260 at \$4, 1 cow weighing 850 at \$3, 2 do av 910 at \$3.50; to Hammond, S. & Co. 21 steers av 1,093 at \$5.90, 2 cows av 1,375 at \$4.75, 2 do av 1,000 at \$4.50, 11 steers av 1,009 at \$5.65; to Mich. B. Co. 14 do av 830 at \$5, 1 cow weighing 830 at \$4.50.

Haley sold Rattkowsky 1 bull weighing 1,190 at \$4.25.

H. N. Johnson sold same 3 cows av 816 at \$3.75.

Haley sold Schlischer 10 butchers av 730 at \$3.90.

Same sold Sullivan P. Co. 1 heifer weighing 800 at \$4.60.

Veal Calves.

Receipts, 1,211. Market \$1@1.50 lower than last Thursday and closed weak; many left over. Best, \$7@7.50; others, \$3.50@6.75; milch cows and springers, \$3.50@6.75.

Bishop, B. & H. sold Newton B. Co. 4 av 85 at \$5, 25 av 125 at \$7.75, 21 av 133 at \$7.75, 4 av 115 at \$7.50; to Hammond, S. & Co. 2 av 120 at \$7.25; to Parker, W. & Co. 71 av 125 at \$7, 18 av 120 at \$6.50. Spicer, M. & R. sold Mich. B. Co. 28 av 133 at \$7.25; to Sullivan P. Co. 7 av 140 at \$6.50, 4 av 110 at \$6, 13 av 125 at \$7.25; to Mich. B. Co. 7 av 135 at \$7; to Burnstine 7 av 125 at \$7, 1 weighing 130 at \$5.

Sandell & T. sold Bresnahan 24 av 125 at \$7.

H. N. Johnson sold Hammond, S. & Co. 17 av 130 at \$7.25.

Roe Com. Co. sold Goose 37 av 120 at \$6.50, 3 av 155 at \$4; to Hammond, Standish & Co. 44 av 130 at \$7, 3 av 140 at \$5.

Haley sold Mich. B. Co. 2 av 115 at \$6.25, 3 av 160 at \$7.25, 21 av 150 at \$6.85.

Taggart sold Fitzpatrick Bros. 2 av 110 at \$5, 9 av 140 at \$7.50.

Stephens sold Thompson Bros. 1 weighing 200 at \$4, 3 av 125 at \$6.50.

Weeks sold McGuire 16 av 125 at \$7.

McKenzie & C. sold Friedman 13 av 127 at \$7.25.

Waterman sold Nagle 6 av 160 at \$7.25, 5 av 115 at \$6.

Haley sold Rattkowsky 2 av 300 at \$4, 9 av 145 at \$6.55.

Downing sold same 2 av 230 at \$5, 5 av 120 at \$7.

Torrey sold same 10 av 132 at \$6.25, 1 weighing 100 at \$5.

Downey sold Burnstine 11 av 147 at \$7.50.

Groff sold Sullivan P. Co. 7 av 110 at \$6.50.

Kendall sold same 8 av 110 at \$6, 27 av 130 at \$7.

Bergen sold Parker, W. & Co. 13 av 145 at \$7.25.

Sheep and Lambs.

Receipts, 2,433. Best wools steady, clips 10c lower; common sheep not wanted; quotations are for clips.

Best lambs, \$6.75; fair to good lambs, \$6@6.50; light to common lambs, \$4@5; wool lambs, \$7@8; fair to good sheep, \$4@4.50; culs and common, \$2.50@3.

Bishop, B. & H. sold Sullivan P. Co. 8 lambs av 70 at \$7; to Nagle 13 do av 75 at \$7.50, 27 clip lambs av 85 at \$6.50, 5 sheep av 70 at \$4, 212 lambs av 78 at \$8; to Harland 35 clip lambs av 68 at \$6.25, 21 clip sheep av 90 at \$3; to Fitzpatrick Bros. 5 do av 125 at \$4.30, 56 lambs av 72 at \$6.30; to W. Young 56 do av 68 at \$7.60; to Nagle 81 do av 86 at \$8, 12 clip lambs av 77 at \$6.30; to Fitzpatrick Bros. 5 sheep av 110 at \$5.50, 11 lambs av 67 at \$7, 25 clip sheep av 95 at \$4.50, 2 do av 130 at \$3.50.

Bergen sold Nagle 33 clip lambs av 75 at \$6.50.

G. J. Smith sold Sullivan P. Co. 115 lambs av 85 at \$8.

Tubbs & Son sold Newton B. Co. 3 sheep av 95 at \$4, 4 lambs av 77 at \$7.

Jedele sold same 40 clip lambs av 80 at \$6.50.

Downing sold W. Young 3 sheep av 100 at \$4.25, 32 clip lambs av 67 at \$6.75.

Stephens sold Thompson Bros. 27 clip sheep av 80 at \$4.60.

Groff sold same 1 do weighing 110 at \$5, 8 lambs av 88 at \$7.

Torrey sold Mich. B. Co. 14 clip lambs av 100 at \$6.40.

Roe Com. Co. sold Harland 4 clip sheep av 125 at \$3.50; to Eschrich 2 do av 140 at \$4.50, 37 lambs av 57 at \$6.50.

Spicer, M. & R. sold Eschrich 13 lambs av 50 at \$5.50, 6 sheep av 120 at \$5.25; to Mich. B. Co. 14 lambs av 67 at \$7.85, 4 sheep av 150 at \$4.50; to Fitzpatrick Bros. 10 clip lambs av 77 at \$5.30.

Hogs.

Receipts, 5,303. Market 10@15c lower than last Thursday.

Range of prices: Light to good butchers, \$7@7.15; pigs, \$6.25@6.50; light yorkers, \$6.80@7; stags, 1/4 off.

Market 10@15c lower than last week.

Spicer, M. & R. sold Sullivan P. Co. 48 av 170 at \$6.90, 52 av 150 at \$6.75.

Roe Com. Co. sold same 69 av 180 at \$7.15, 102 av 210 at \$7.25, 46 av 160 at \$6.40, 199 av 185 at \$7.20, 74 av 180 at \$7.05, 180 av 200 at \$7.10, 34 av 150 at \$6.80, 39 av 175 at \$7.20.

Sundry shippers sold same 100 av 190 at \$7.20, 69 av 180 at \$7.05, 188 av 185 at \$7.10.

Bishop, B. & H. sold Hammond, Standish & Co. 365 av 160 at \$7.10, 406 av 150 at \$7.05, 120 av 190 at \$7.20, 410 av 150 at \$7, 354 av 170 at \$7.15, 93 av 135 at \$6.90.

Sundry shippers sold same 98 av 146 at \$7.05, 117 av 154 at \$7, 51 av 190 at \$7.10.

Spicer, M. & R. sold Parker, W. & Co. 96 av 121 at \$7.10, 39 av 140 at \$6.90, 78 av 200 at \$7.25, 104 av 190 at \$7.20, 111 av 180 at \$7.15, 155 av 170 at \$7, 46 av 160 at \$7.10.

Sundry shippers sold same 342 av 144 at \$7, 205 av 200 at \$7.10, 140 av 169 at \$7.15.

Friday's Market.

April 9, 1909.

Cattle.

Receipts, 47. Market steady at Thursday's prices.

We quote: Extra dry-fed steers and heifers, \$5.50@6; steers and heifers, 1,000 to 1,200, \$5.25@5.40; steers and heifers, 800 to 1,000, \$5@5.25; steers and heifers that are fat, 500 to 700, \$4.25@5; choice fat cows, \$4.50; good fat cows, \$4@4.25; common cows, \$3@3.50; canners, \$1.50@2; choice heavy bulls, \$4.50; fair to good bolognas, bulls, \$3.75@4; stock bulls, \$3.50@3.75; choice feeding steers, 800 to 1,000, \$4.50@5; fair feeding steers, 800 to 1,000, \$4@4.25; choice stockers, 500 to 700, \$4@4.50; fair stockers, 500 to 700, \$3.50@3.75; stock heifers, \$3@3.50; milkers, large, young, medium age, \$4@5.50; common milkers, \$2.50@3.50.

Spicer, M. & R. sold Mich. B. Co. 4 heifers av 500 at \$4.20, 1 steer weighing 740 at \$4.75.

Bishop, B. & H. sold same 4 steers av 1,153 at \$5.75, 6 do av 916 at \$5.25, 2 bulls av 1,400 at \$4, 2 do av 810 at \$4.25.

Roe Com. Co. sold Hammond, S. & Co. 20 steers av 1,185 at \$6.

Bishop, B. & H. sold Greese 4 cows av 820 at \$2.25.

Bishop, B. & H. sold Sullivan P. Co. 7 butchers av 963 at \$4.50, 13 cows av 900 at \$3.50, 1 bull av 1,550 at \$4, 2 do av 875 at \$4.50, 2 steers av 975 at \$5.50, 2 bulls av 1,240 at \$3.75, 1 do weighing 1,590 at \$4, 8 butchers av 815 at \$3.75, 5 cows av 1,090 at \$3.

Veal Calves.

Receipts, 34. Market dull and 50@75c lower than on Thursday. Best, \$7.50@7.75; others, \$4@7. Milch cows and springers, steady.

Bishop, B. & H. sold Newton B. Co. 11 av 130 at \$7.50.

Same sold Sullivan P. Co. 8 av 125 at \$7.50, 5 av 125 at \$7.50, 5 av 145 at \$7.50.

Same sold Parker, W. & Co. 23 av 130 at \$7.75.

Sheep and Lambs.

Receipts, 26. Market steady at Thursday's prices. Best lambs, \$7.75@8; fair to good lambs, \$7@7.50; light to common lambs, \$6.50@7; yearlings, \$6@6.75; fair to good sheep, \$5@6; culs and common, \$3.50@4; clip lambs, \$6.50@6.80.

Hogs.

Receipts, 508. Good grades 5c higher; others strong.

Range of prices: Light to good butchers, \$7.25@7.35; pigs, \$6.25@6.50; light yorkers, \$6.90@7.10; stags, 1/4 off.

Bishop, B. & H. sold Hammond, S. & Co. 227 av 180 at \$7.30, 80 av 190 at \$7.35, 114 av 150 at \$7.25.

ADDITIONAL VETERINARY.

Cow Leaks Milk.—Have cow that seems to be all right every way, except she leaks milk. How can this be prevented? J. W., Deford, Mich.—I know of no better plan than to milk her three times a day. Cows that leak milk are usually good ones; therefore, all things considered, you would be making a mistake in reducing her food supply with a view towards lessening her milk.

Luxuation of Stifle.—I noticed in the veterinary column a statement regarding luxuation of stifle. Now, I have a 3-year-old colt that has had stifle trouble for more than two years. When walking the joint snaps, but he suffers no pain and it bothers him very little, if any, when traveling on smooth ground; however, he steps over things with difficulty. There appears to be a weakness or inability to raise the foot high off the ground. Do you think this colt will ever be fit for work? I am told that this colt was stifled when he was a year old. My veterinary book states that such an ailment is incurable. C. O. S., Boardman, Mich.—A chronic ailment of this kind should be regarded as serious. However, it is possible for your colt to recover. The groove on end of bones has perhaps partially filled with tissue, thereby preventing the patella (cap) from remaining in its normal position. Besides, the ligaments that hold this bone in position are perhaps weak. You will obtain the best results by blistering with one part red iodide mercury, one part powdered cantharides and eight parts lard every ten days and if you are going to break him and use him for light work, then apply very light applications of this remedy every few days, just enough to counter-irritate the parts, instead of producing an active blistering effect.

Grubs in the Head of Sheep.—My sheep are affected with grub in the head and eight of them have died from this cause. How can I prevent others going the same way? T. P., Port Hope, Mich.—What is known as "grub" is the larvae fly of the sheep, the gadfly. These flies deposit their eggs about the noses of sheep during the hot summer months, meeting the heat and moisture of the nose they grow and make their way up nose into the nasal cavities and climb higher up into the sinuses, lodging just below the eyes. They are not always easily dislodged; it often becomes necessary to trephine thru bone of face before they can be washed out. However, you may be able to displace them by blowing some scotch snuff up into nostrils once or twice a day. A decoction of snuff and hot water or weak tobacco water may give you about as good results as the snuff. However, I have obtained the best results from snuff.

Catarrhal Influenza.—I have a black mare 12 years old that has been sick for the past two weeks; there is considerable discharge from her eyes and some from nose. What had I better give her? F. H., Saginaw, Mich.—Your mare suffers from a light attack of catarrhal influenza. This is not a serious ailment. However, you should avoid getting her wet, or exposing her to severe atmospheric changes, from hot to cold. Give 1/4 oz. powdered sulfate iron, 1/4 oz. baking soda and 1/4 oz. ginger at a dose in feed three times a day until she recovers. Put 1/2 dr. sulfate zinc in a pint of boiled water and apply to eyes night and morning until the discharge ceases. She should be fed some well salted bran mash or vegetables to keep her bowels open.

Turkeys are Troubled with Abscess.—Will some one tell me thru these columns what will cure my turkeys. They are troubled with a bunch or swelling under the eye which, if lanced, discharges pus; after awhile the swelling gets so large it troubles them about eating, then they appear to die either from starvation or other causes. (No name or address, but signed a subscriber).—You are perhaps a subscriber of the M. F., but how are we to know, unless you give your name and address. Your turkeys become infected in some way, or else bruise their face which results in abscess. Open up abscess freely with a sharp pen-knife, apply peroxide-hydrogen once a day, ten minutes later apply equal parts iodoform, barac acid and tannic acid. Be sure that your turkeys are kept in a clean place and are not roosting in a draft or where it is too damp.

United States Rubber Company

42 Broadway, New York, April 1, 1909.

The Board of Directors of the United States Rubber Company has this day declared from its net profits a quarterly dividend of Two Percent on the First Preferred Stock (including all outstanding old "Preferred" Stock), and a quarterly dividend of One and One-half Percent on the Second Preferred Stock of this Company, to Stockholders of record at 3 P. M. on Thursday, April 15th, 1909, payable, without closing of Transfer Books, April 30th, 1909. JOHN J. WATSON, JR., Treasurer.

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The guaranteed spray, better than blue vitriol and lime and does not burn the tree or foliage, and contains 15% more killing agent than any other spray on the market. ARSENATE OF LEAD, brand made by a new process. Each package contains 25% more than is billed. (Example—100-lb. package contains 125 lb.) The product contains 15% Arsenic Oxide, is harmless to foliage, contains no insoluble pigments or other impurities, and conforms strictly with government specifications. Send us your orders now for future delivery.

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Warranted to give satisfaction.

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A safe, speedy and positive cure for

Curb, Splint, Sweeney, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

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McGregor, Mich., Jan. 13, 1908. Dr. B. J. Kendall Co., Enosburg Falls, Vt. Gentlemen:—Please send me a copy of your "Treatise on the Horse and his Diseases." Have used Kendall's Spavin Cure for 20 years with the most wonderful results. Yours truly, E. M. Tuck.

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WANTED—Every man who raises fruit, from a Plum to a 10-acre orchard, to write me, with stamp, for Free Information worth hundreds to them. A. C. DAVIS, Battle Ground, Ind.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

DAIRYING VS. FEEDING.

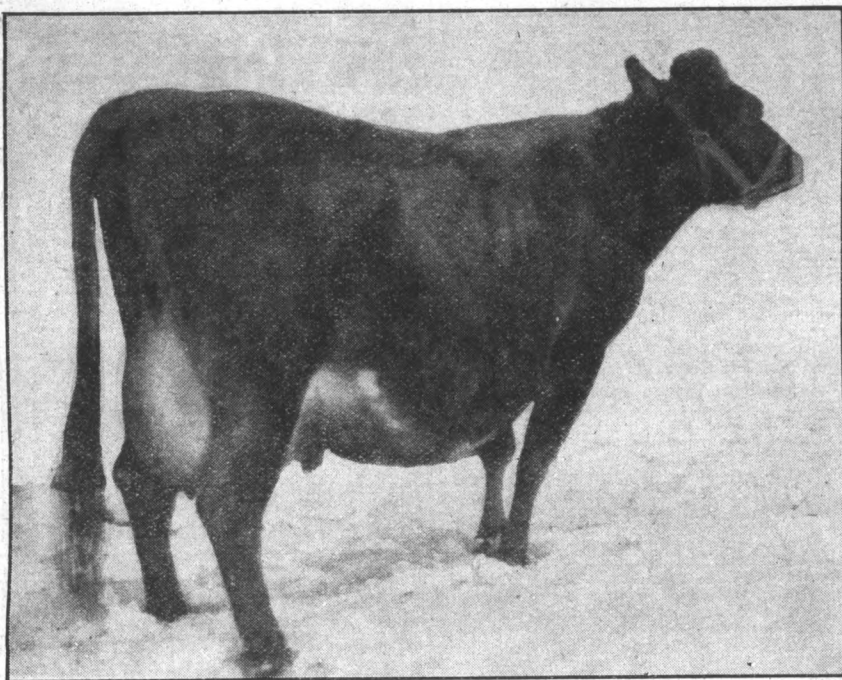
I am asked by a subscriber of the Michigan Farmer to discuss the question of dairying compared with the feeding of steers or lambs. He wishes to know the merits of the two branches of live stock husbandry; that is, of course, my opinion on them, and this I am glad to give briefly. In the first place, dairying is a cash business, differing in this respect from any other branch of farming that I know of. Of course, we might say that any kind of farming is a cash business, or in other words, that it matters little what we raise on the farm, we can find a market for it and get cash for the product, and this is true. I can remember hearing my father tell of a time when you could not sell wheat in the city of Grand Rapids for cash, and the same was true in other markets; but those times have passed. There is a cash market for all agricultural products, for they are all needed at the present time.

And yet, when we say dairying is a cash business, it has a different meaning from this. If you grow your own steers,

ness, while he may not be at all competent in a financial way to feed steers or lambs, because these kinds of business take quite a large working capital. But dairying, being a business in which the products are turned into cash every week, enables a man to start with little capital. It is a short investment and the ordinary man can keep a good commercial herd of dairy cows upon his farm when it would be impossible for him to go into the business of feeding steers or lambs.

The Element of Speculation.

Dairying is a business in which the idea of speculation is practically eliminated. There is no risk to run. You can tell every week whether you are making money or not. If you are not making money, you can adjust your business so that you will be, while in feeding lambs, or steers, or hogs, you cannot tell how much money you are making, or whether you are going to make any at all or not, until the product is finished and put upon the market, and this often occurs several months, sometimes a year, and, where you raise the product, even more time than that may elapse before you know anything about how much you are going to make. Now, this kind of business is a speculation. A year ago this last winter how many men would have fed high-priced corn to hogs if they had known what hogs were going to bring when they got them fattened. They



Jersey Cow "Echo," having a 12-months' Record of 11,767 lbs. Milk and 635.4 lbs. Butter. Owned by H. Horton & Sons, of Bay County.

or your own lambs, it takes considerable time to grow them. Then you have to fatten them and you don't get one single dollar out of the investment until your lambs, or your steers, are ready for market. And so this is not a cash business in the sense that dairying is a cash business. Again, if you purchase your steers or your lambs you have to invest your money in them. Then you have invested money in the feed which you have grown for them, and you probably have to borrow money to buy more feed before you can fatten them. You don't get a cent out of your investment until you put the steers or lambs upon the market.

Now, dairying is a cash business in a different sense. You feed the dairy cows today and tomorrow you get your cash. You can figure up every week or every day, if you wish to, and know just exactly where you stand in dairying. The dairy products sell for cash at frequent intervals and one does not have to wait until he has put considerable money into the feeding of an animal before he gets his money back. You have the money every week or every two weeks to take care of current expenses, to run your business with, to buy more feed with, in fact, to do anything that you wish to do, while with other forms of live stock husbandry you have to wait for a considerable time and get your money in a bunch. Now, the business that brings the cash at stated intervals makes the farmer independent, because the cash to meet current expenses makes him independent. He can pay cash for the necessities of life, for the luxuries of life; he can pay his hired man every Saturday night, as hired men should be paid, while if the steer feeder, or lamb feeder, does this he must borrow the money and wait until he sells his stock.

Again, dairying being a cash business makes it possible for the ordinary farmer with a little capital to do a good busi-

ness. They had no means of telling. Had their money, however, been invested in cows, they could have told every week whether they were making any money or not. If they were not making money they could have adjusted their business accordingly. And it is the same way in feeding steers or lambs. You do not know until you sell them.

There is a great deal of luck in steer feeding and lamb feeding. If you buy on the right kind of a market and sell on the right kind of a market you will make some money, but, on the other hand, if you buy on the wrong kind of a market, and you have no control over this market, or sell on the wrong kind of a market, over which you have no control whatever, you may be unlucky and lose. It is a speculation, while dairying is not a speculation.

Very few men can practice feeding without going heavily in debt. I venture to say that 75 per cent of the men who feed lambs and steers in a commercial way have to borrow money when they buy their steers, or lambs, or else borrow to buy feed with before they get them fattened. On general principles I do not object to going into debt where the investment is safe and sane, but the ordinary farmer cannot afford to go very heavily in debt on this sort of a proposition, because it is a speculation from beginning to end. If he loses he is practically ruined. In the dairy business he does not need to go in debt because he has the money at frequent intervals to pay cash for the feed which he gives his cows, and to buy new ones if necessary. Consequently he is relieved from the worry and the risk borne by the man who invests large sums in feeding steers or lambs.

Better Returns and Less Depletion of Fertility.

Then again, there is more profit in dairying than there is in feeding either

KEEN SPORTSMEN

Never Waste Ammunition on "DEAD DUCKS"

The DeLaval Separator Company in their advertisements beg to be excused for devoting so much space to the United States Separator, which they consider a "dead duck competitively." This is a sweeping admission on their part that the United States Separator is not dead but is the most vigorous duck in the whole flock.

Keen sportsmen never waste ammunition on "dead ducks."

The facts showing who was the original inventor of the first practical continuous flow Centrifugal Cream Separator, as disclosed by the records in the Patent Office at Washington, make it plain that Dr. DeLaval was not the original inventor.

These records show that DeLaval, beaten in his claim of priority by other applicants, bought up the Houston & Thomson application (which ante-dated his own), in which he filed a substitute application and added the identical claims that he was beaten on, in the interference with the other applicants.

The Patent Office then allowed these claims to Houston & Thomson and the Patent went to issue.

The United States Circuit Court of Appeals afterwards decided in effect that Houston & Thomson were not entitled to the broad claims, and Dr. DeLaval "was not in it."

DeLaval bought the Houston & Thomson application to deprive the rightful inventors of their invention and then DeLaval got beaten at his own game in the Courts.

The DeLaval in their advertisements accuse the United States of utilizing in their Separator an invention which they purchased.

This is not true, as an examination of the DeLaval patent referred to and the United States Separator patents will readily disclose the falsity of the DeLaval claim. This is another "word claim" of theirs.

The 1909 Model United States Separator is covered by patents (720,154; 726,438; 732,750; 806,346, and 859,185) owned by the U. S. and which cover its scientific features which make the United States Separator so much superior to the DeLaval and every other Separator on the market. These are but a few of the nearly 40 patents owned by the United States.

Another thing, they accuse the United States of being responsible for the nullification by the Courts of a patent purchased by the DeLaval in their efforts to "squench" the United States Separator, which patent they admit they never used but which they bought and paid \$20,000.00 for, according to the Court records, in the hope that it would "squench" the United States Separator that was beating them so vigorously in the market.

It is true the Court decided that they had spent their \$20,000.00 in vain. The United States Separator accomplished better results with a bowl of half the diameter and with less than one-third as many parts as the DeLaval had.

The DeLaval whine because the United States holds the World's record in a test with the DeLaval of 50 consecutive runs on 10 different breeds of cows.

If this record is so ancient and so non-progressive, what is the reason they have not been able to beat it in all these eight years they have been attempting to do so. Let them show a more progressive record in this Country or any other, if they can do so.

The U. S. is still eight years ahead of the DeLaval.

The DeLaval Company claim that the LaGrange Creamery is a little Creamery and admit that it is near Poughkeepsie.

If it is so small and of so little consequence, why did they spend so much money at the Dutchess County Fair, Poughkeepsie, N. Y., in the Fall of 1899 and get the President of that Fair to offer a money premium for a test at the Fair between the DeLaval and the United States Separators? Why, if it was so inconsequential, did they stop their Factory and turn-out all their men without loss of pay to "whoop it up" on the day of this great test?

It was apparent to the public that the DeLaval Company felt satisfied they had things fixed to win the contest, but the test of the cream showed that the United States had secured more butter fat from the quantity of milk than had the DeLaval.

Again, if it is so inconsequential why did they have eight of their best canvassers immediately thereafter in that one locality to solicit orders and to prevent, if possible, the farmers from buying the United States Separator? Yet when the canvass was closed there were three times as many farmers who had taken the United States, as there were who had taken the DeLaval.

The DeLaval accuse us of changing from year to year the date of President Hoyt's letter. This is a falsehood. We do not find it necessary to falsify records and thus deceive the people. The facts remain true as Mr. Hoyt states them, that there are three United States Separators to every one of the DeLaval.

The DeLaval Company advertise that they make more trade allowances for old United States Separators than for any other make of Separator.

We guess that is true, for there are more United States Separators in use and we have been repeatedly informed by users of United States Separators that the DeLaval agents have bored them to death to exchange and before giving up their persistence, have offered to give a new DeLaval in even exchange for an old United States.

Quite a number of former traveling salesmen of the DeLaval Company have informed us that they have been instructed from Headquarters to give a new DeLaval Separator for an old United States Separator, if they could not make any better trade and that their instructions have been from the DeLaval Headquarters, that the repairs on the DeLaval in a short time would make a good handsome profit on this kind of an exchange.

The DeLaval Company refer to their farm sizes of Separators as the "Baby" type.

The United States spanked the "Baby" so hard in days gone by that they seemed for a while to try to tell the truth and not make such extravagant claims, but they have got into their old tricks again, making extravagant, false statements and "word claims."

The above we think is sufficient for this time; to be continued later on, but in the meantime send for Catalogue No. 111.

Vermont Farm Machine Co., - Bellows Falls, Vermont.

Warehouses in every dairy Section of the United States and Canada.

Improve Your Land Use HERCULES POWDER to blast Stumps & Boulders

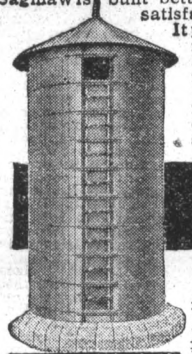
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The Saginaw Silo Makes Dairymen Rich

One successful dairyman says: "If it were impossible to get another, I wouldn't sell my 'Saginaw' for 5 times what it cost." Saginaw Silos cut your feed bills in half, and double your dairy profits. Dairymen who are familiar with all Silos say the Saginaw is built better and gives better satisfaction than any other. It puts more and better milk in your pails, at an astonishingly low figure. In short, the Saginaw Silo is economical, practical, convenient and simple.



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What you save in feed—what you gain in milk and butter—actually makes your Saginaw Silo pay back its cost the first year. Write us for our Free Book, "The Modern Way of Saving Money on the Farm." In it experts tell you all about Silage. Get this book today and learn all about our liberal proposition to you. If we did not make more Silos than anybody else we could not make such an offer. Write for the book—judge our offer for yourself.

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ALL STYLES FROM 3 TO 30-H.P.
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DeLoach Mill Mfg. Co., Box 357, Bridgeport, Ala.

lambs or steers, on the average. It has been proved conclusively at several experiment stations that the food necessary to make a pound of dressed beef, if fed to a dairy cow, will make a pound of butter. Now dressed beef usually sells for from 6 to 7 1/2 or 8c per lb., while a pound of butter will sell from 20c to 30c. To be sure, it requires more labor in the making of the butter and in caring for the dairy cow than it does in caring for the steer, but the extra expense of labor is not nearly enough to offset the difference in profit which one makes in dairying over and above steer feeding. It takes a good steer to make a gain of 2 lbs. a day for any considerable length of time, dressed beef. We are getting hundreds of cows nowadays that will make 2 lbs. of butter per day on the same feed, and even on less feed than it takes to make the 2 lbs. of beef on the steer. Besides that, when you sell the steer your entire product is gone and you have to begin over again, while with the dairy cow she will make you 400 or 500 lbs. of butter this year, and next year she will repeat the process. You have your investment and it is capable of producing the same profit year after year.

When we come to the question of soil fertility, dairying wins again. Where you grow an animal upon the farm, fatten it and sell the carcass off the land, you are selling much more fertility than when you sell dairy products, especially if you sell butter. You keep the cow year after year on the farm and sell nothing but the butter from this cow. By so doing you are reducing the exhaustion of the soil to a minimum, while if you raise the calf, grow it upon the farm, or even if you buy it and fatten it, it removes from the farm all the nitrogen, phosphoric acid and potash that its carcass contains. When the dairy cow dies of old age you can dissect her and compost her and thus lose practically nothing in the way of plant food from the farm. Many other things can be said in favor of dairying as compared with feeding, but this article is already too long.

A GRAIN RATION FOR COWS ON PASTURE.

What would be a good grain ration for milch cows when they are pastured?

In order to take better care of the manure pile, which of these two things would you choose to do—build a concrete wall around the yard and a roof over it, or would you build a concrete floor, and eaves-trofs on the barn, without a roof over it?

Ottawa Co.

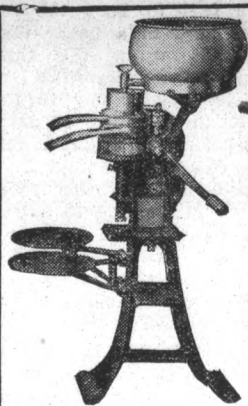
D. H. B.

I think the best grain ration I ever fed to dairy cows on pasture was composed of dried beet pulp and cottonseed meal. The beet pulp was moistened a half a day before it was fed and then the cottonseed meal was sprinkled on the moistened beet pulp. It is difficult to say how much grain you ought to feed a cow on pasture because it all depends upon the condition of the pasture. If it is good pasture, you need only a little, perhaps none; then you need to increase the grain ration as the pasture becomes poor. I would feed the dried beet pulp and cottonseed meal in the proportion of 4 lbs. of the beet pulp to one of the cottonseed meal. If you haven't dried beet pulp and cottonseed meal, I would feed corn meal and wheat bran, equal parts by weight. The same idea must prevail with reference to feeding this grain. You must feed in proportion to the productivity or yielding capacity of your pasture. The cows ought to have a full ration of pasture, or pasture and grain combined.

A Manure Shed or Pit.

I think the covered manure shed would be the best, altho it would cost the most. If you had a cement floor in your barnyard, with a grout wall around the outside of it, and if there was an excessive amount of rain during the season, the manure would be too moist, at least to handle well, and it would be better to have a roof over it. But either one of these ways of keeping manure is expensive compared with the modern way of hauling the manure out as fast as it is made in the stable and spreading it on the land. With this method of handling manure you need no costly manure shed or pen to store it in, and you put it out on the land as fast as made when you have time to do it, and thus spread and handle it with the least expense of labor and the least loss of the manure.

I will now take pleasure in letting you know that I have got my machine in good condition and must say that I am well pleased with it.—Mrs. Arthur Fleming, Lansing, Mich., R. 3.



TEN YEARS AHEAD OF ALL OTHER CREAM SEPARATORS

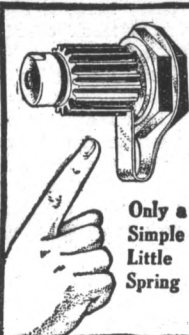
In skimming efficiency, simplicity, durability and convenience, the new 1908-1909 improved De Laval Cream Separators are fully ten years ahead of any other machine on the market today. Thirty years of experience, protecting patents, and the many valuable improvements devised and perfected by the De Laval engineers in all parts of the world during the past three years, are responsible for this fact. Every feature of the De Laval has been improved, from the supply can to the base. The new centre-balanced bowl with its separate spindle is alone a triumph in separator construction and must be seen to be fully appreciated. Then, there is the new one-piece "anti-splash" sanitary supply can, adjustable shelves for skim-milk and cream receptacles, new frame designs, and many other but less important improvements,—all combining to make the De Laval as nearly ideal as a separator for farm and dairy use can be made. There is the proper size machine for every size dairy from the smallest to the largest and no cow owner can afford to be without one of these improved machines. It will cost you nothing to see and examine the new De Laval and right at your own home, too, if you will but say the word. Our new illustrated catalog describing the De Laval improvements in detail is sent for the asking. Write us at once and you will receive this interesting book by first mail with full information as to how you may have a free demonstration of the improved De Laval in your own home. It will pay you to do so and your only regret will be that you didn't investigate sooner.

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High Grade Separator—Direct
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BUSINESS PRINCIPLES APPLIED TO DAIRYING.

When a trained business man desires to engage in manufacturing of any kind he first makes a careful investigation of every phase of the situation. Not alone the source and cost of the raw material to be used and the general methods to be adopted, but among the more important questions is that of the most efficient and latest improved machinery. The farmer who grows grasses, hay, grain and other crops on his farm and condenses them into dairy products becomes not only a dairyman but a manufacturer. The dividends from his plant depend largely upon three things: The cost of raw material used in manufacturing, the economy of production and the quality of the finished product.

In applying business principles to the management of the dairy farm let us consider the question from a purely business, or money-making standpoint. First we will discuss the supply of raw material. We can get cheaper grass, hay and grain for the production of dairy products by growing larger crops per acre with the same labor and expense now expended upon smaller crops, or we can grow the same amount of grass, hay and grain upon a less number of acres with less labor and expense. It costs but little more to grow a crop of three tons of hay to an acre than to grow a crop of one ton which barely pays the cost of cutting and harvesting. The increase above the one ton is a cheaper raw material for the manufacturer of dairy products. It is plain to see that the farmer who grows large crops on each acre, at a reasonable expense, has cheaper raw material for his manufacturing plant than the one who grows small crops.

The cost of raw material used in the process of converting farm crops into a more condensed commodity is an important factor, and one that a trained business man would carefully consider. The successful feeding of dairy cattle begins with the growing of the feed, the same as the successful management of a manufacturing plant begins with the cost of raw material. The successful manufacturer employs the best methods known by science to decrease the cost of producing his raw materials. The farmer should use the same business sagacity and employ the best methods known by science to reduce the cost of producing his grass, hay and grain.

The Milk-Producing Machine.

After raw material is at hand it becomes a question of process, and what machine or machines shall be utilized, in conversion of the various raw materials into the finished product. The machines used in modern manufacturing plants have passed thru years of development and improvement before reaching their present state of perfection, and successful manufacturers will use none but the most improved and latest models. It is only applying sound business principles for the dairy farmer to use the same precaution in selecting and testing the machines that he uses in his manufacturing plant. Shall it be the latest improved—the special-purpose milk-producing machine—or shall it be a machine that wastes a large proportion of the raw material in the process of manufacturing the finished product. The one great difference in these machines is that some are improved while others are not, but invariably it is the improved machine—the cow that has been bred and developed for a special purpose—that makes the best use of the raw materials produced on the farm.

The selection of these machines, like the selection of the machine used by the large manufacturing plants, need not necessarily be a matter of chance as many seem to think. Breeding, selection and testing enable farmers to select their milk-producing machines with the same business precaution as the manufacturer employs in selecting his machinery. We want the very best machines that we can get. An application of sound business principles will quickly weed out the non-paying cows. Anyone with a reliable pair of scales and a Babcock tester can quickly tell the standing of every cow in the stable.

After we have opened our factory for business and have secured our improved milk-producing machines we must again apply business principles to its management if we develop our plant to its fullest and most profitable capacity. Each milk-producing machine must be placed where it will require the least food to keep up the required amount of heat.

It requires more fuel to keep the required amount of heat in a boiler that is exposed to cold stormy weather than when the boiler is properly housed. Exactly the same principles apply in the use of fuel in the manufacture of dairy products. It has been proven that 18 lbs. of hay fed to a cow that is kept in a warm stable will produce the same amount of heat as 24 lbs. fed to a cow exposed to cold weather. If the cows are allowed to run outside, put good warm blankets on them, the same as the business man would on the boiler of his engine, if obliged to have it exposed.

Another business principle is to keep the machine running to its proper capacity and not keep twenty machines running half time to do the work that could be accomplished by ten when run to their full capacity. Sound business policy dictates that every cow be fed all she can eat, digest and assimilate. The successful manufacturer wants water in his boiler and fuel under it. The milk-producing machine must have the same care exercised in proportioning its food for heat and protection as the manufacturer would exercise in supplying his engine with fuel and water. Sound business policy dictates that the manufacturer plan to make every man's labor count for as much as possible. The dairyman should strive to accomplish the same results by having his plant convenient and using the best producing cows.

Another sound business principle is to save everything. If dairymen would look more closely to their business, thousands of pounds more butter would be made annually. A test of the skim-milk by the Babcock tester would be a revelation to many dairymen and cause them to change their methods.

It is also good business to save and utilize every by-product. In these days of close business competition much of the success, and in many instances the whole of the profits, of a business depend upon the economical use of the odds and ends, or by-products. The skim-milk from a fair-sized dairy herd, if used in a judicious manner, will itself constitute a fair profit on the business.

Now, as to the other by-product—manure. It is a well established fact that in order to secure and maintain an increased yield the crops must be fed on the farm where grown and the fertility, as far as possible, returned to the land. Sound business policy dictates that we make the most profitable use of this manurial fertility.

The Quality of the Finished Product.

Another important business principle is that first-class goods must be put up in an attractive shape and be placed in a market where a good article is appreciated. Dairymen cannot afford to operate a first-class manufacturing plant and use highly improved special machinery to make an inferior product. Gilt-edged butter that will top the market is easily made and costs but little more to manufacture than a cheap inferior article. It doesn't take any more milk to the pound, it doesn't take any longer to churn, it doesn't take any more salt. All that it does require is a little more skill. High-quality goods are the result of skill and intelligence. Every detail must be looked after if we succeed in making the finest product.

Good butter, no matter how good, will not sell itself. Thousands of pounds of excellent butter are annually traded out at the country store and go into a conglomeration that is sold for small price. Good butter, like "poor dog Tray," suffers by being in bad company.

Nothing helps to sell butter quickly so much as a neat tidy package. The customer thinks, and justly so, that the dairyman who makes his butter look nice, and puts it in nice clean packages, is quite certain to be cleanly, and fancy has much to do with selling an article at an advanced price. Another business principle is to get and hold a profitable trade. Nothing is more difficult than to induce a customer to change his brand of butter and milk when he has once found a dairyman who can supply an article that pleases his palate. The dairyman, like the manufacturer, should strive to keep his product as uniform as possible. A distinct and uniform package will help to obtain and retain customers. The dairyman who is manufacturing a first-class article should be proud to see his name and the name of his farm on every package.

In no line of manufacturing will good business sagacity pay better than in the management of the dairy.

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A LITTLE TALK on DISCS



We have often called attention to the fact that **Tubular Cream Separators** are entirely different from other cream separators, are in a different class, built on scientific principles; built to wear; built to skim clean; built to give general satisfaction; which means built without discs, and without the wabbling disc bowl, the difficulties in keeping the bowl in balance and the uncleanable, cream tainting features of the common disc bowl.

The Universal Prestige of Tubular Separators

is largely due to the entire absence of the objectionable features common to all disc separators, and this in connection with perfect mechanical construction, and exclusive conveniences found only in Tubular Separators, is sufficient reason for the sale of Tubulars so far exceeding those of any two competitors. IT'S THE NATURAL RESULT.

We Have Made This Statement Often

All "bucket bowl" or "disc" separators built by our numerous competitors, old and new, are in the same class; have the same characteristics, whether good or bad, and one is just about as bad as another. Now comes our old "disky" competitor and advertises a patent infringement suit against a catalogue house separator which has been built and sold for a number of years. Our old friend seems to have just discovered that we were right when we said the catalogue house disc separators were just the same as his disc separator. He now admits that the catalogue

house separator is identical with his disky construction and asks the United States Circuit Court to make the other fellow stop building them and his agents stop selling them. Our old friend is in bad straits; he has worked every scheme imaginable to bolster up the reputation of his very common "disc" machine, he has gone the limit in questionable advertising, he has employed a small army of salesmen to bluff the game through, and now he has had to ask the Court to help him out of his trouble. The real trouble is that the farmer has found out what our disky friend now admits; the catalogue house separator is as good as the old disc separator and the farmer is wise enough to buy the one that he can buy the cheapest. Anybody can build a disc separator cheap, and if the farmer or dairyman is willing to endure the inconveniences of a disc separator he should buy one that is sold cheap. Several of the new disc separators are more modern, more convenient, and more satisfactory than the much advertised "old original" and sell for half the price. No wonder our old friend needs help.

If a farmer or dairyman appreciates convenience, safety, economy, durability, perfect skimming, easy running and freedom from repair bills he should buy a Tubular, and that is what most farmers are doing. For full information write for catalogue No. 152.

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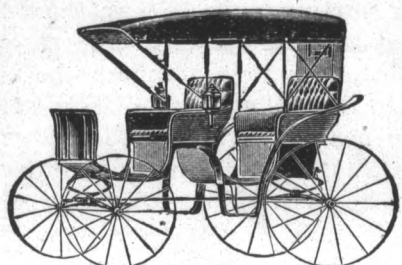
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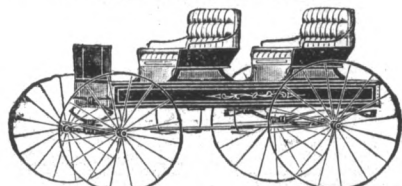
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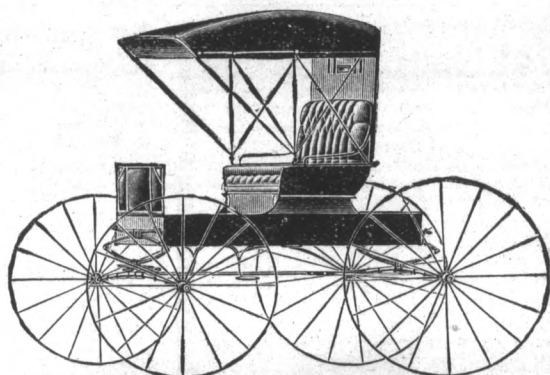
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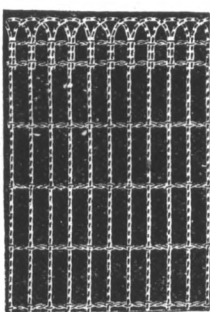
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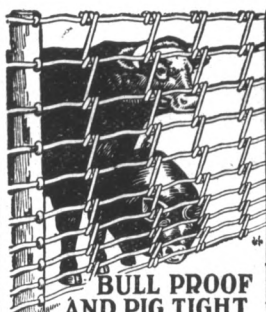
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AND PIG TIGHT

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GET OUR FREE SAMPLE which we send for inspection. Test it for strength, stiffness and rigidity, then look to the galvanizing. File it and see how thick that is. We want you to satisfy yourself that for YOU Brown Fence is the best fence to buy for Horses, Cattle, Sheep, Pigs, Chickens, etc. Our fences are made of extra heavy Steel Wire—both strand and stay wires No. 9 gauge.

SELLS AT 15 to 35c PER ROD DELIVERED. WE PAY THE FREIGHT. Easy to put up. Stands staunch, solid and rigid. Won't sag or bag down. Our prices are less than you would pay for much lighter fences—fences not half so durable. Write today for sample and catalog showing 150 styles.

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FARM FENCE

16 cts. a rod
For a 20-inch high Hog-tight Fence. Made of heavy wire, very stiff, strong and durable; requires few posts. Sold direct to the farmer on 30 DAYS FREE TRIAL. Catalogue free. INTERLOCKING FENCE CO. BOX 30 MORTON, ILLINOIS.

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Cheaper than wood, combining strength and art. For lawns, churches, cemeteries. Send for FREE CATALOG. Address The Ward Fence Co. Box 677 Decatur, Ind.

15 Cents a Rod.

For a 22-inch Hog Fence; 16c for 20-inch; 19c for 31-inch; 23 1-2c for 34-inch; 27c for a 47-inch Farm Fence. 50-inch Poultry Fence 37c. Lowest prices ever made. Sold on 30 days' free trial. Catalog free. Write for it today. KITSelman Bros., Box 278, MUNCIE, IND.

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Made of High Carbon Double Strength Coiled Wire. Heavily Galvanized to prevent rust. Have no agents. Sell at factory prices on 30 days' free trial. We pay all freight. 37 heights of farm and poultry fence. Catalog Free. COILED SPRING FENCE CO. Box 21 Winchester, Indiana.

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If you are a GOOD Farmer you want the BEST FENCES. CLEVELAND WIRE FENCES are the BEST. They come in any height and any size. LOOK FOR THE CLEVELAND LOOP and SPRING. Every LATERAL WIRE has a SPRING which provides for contraction in Cold Weather and for expansion in Warm Weather, so that the CLEVELAND WIRE FENCE IS ALWAYS TIGHT. The TOP WIRE makes the CLEVELAND WIRE FENCE STAND UP against Heavy Animals, Snowdrifts or Wind Storms. The many Cross Bars to the rod prevent hogs or other animals from raising it. So it requires no repairs. Horizontal wires of Special High Grade Hard Steel. Uprights one piece. Steel Farm and Ornamental Gates in all sizes. Write for FREE CATALOG AND SAMPLES. Cleveland Fence & Wire Co., Dept. B Cleveland, O.

WIRE FENCE

GRANGE

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

GETTING A FRESH GRIP ON ONE'S PROFESSION.

When Miss Ida M. Tarbell spoke before thousands of students and patriotic citizens at Ann Arbor and Ypsilanti on the occasion of the Lincoln celebrations in February, she laid much stress upon what she called Mr. Lincoln's "habit of every now and then getting a fresh grip on his profession."

For six weeks almost day and night he studied surveying before he began the work in the field that resulted in a remarkable series of maps, not one of which has ever been discredited. At forty years of age he mastered grammar and at forty-five he enthusiastically began a study of law over again, "hanging like a dog to a root," as he was himself fond of saying. "He set his teeth together upon a problem, he tore it and shook it till it gave way."

In one's ability to revive original vigor and put a new impetus into his work when in the midst of it lies much of the element of mastery in any undertaking. We are not surprised to see the new Grange Master or other official starting out with zeal and animation in a new term of work. Neither are we surprised after a little to see his enthusiasm oozing out and his plans melting like hoar frost in the sunshine. Unfortunately the old adage about the cleanly sweeping of the broom that is new is too true.

But when in the thick of the fight, after years of faithful endeavor in the interests of neighbors and fellow work-people, one can renew his grip on enthusiasm and enter into fresh plans as if it were for the first time, there is your patron who will win success from seeming disaster and fling fortune in the teeth of failure.

JENNIE BUELL.

MICHIGAN LEADS DURING FIRST QUARTER OF 1909.

National Secretary Freeman has just issued his quarterly statement, showing the number of Granges organized and re-organized from Jan. 1 to March 31, 1909, both inclusive, to be as follows:

Organized.	
California	1
Connecticut	2
Delaware	4
Idaho	6
Illinois	4
Indiana	1
Iowa	1
Kansas	7
Kentucky	1
Maine	2
Maryland	5
Massachusetts	4
Michigan	32
Total	189
Re-Organized.	
Connecticut	1
Kansas	1
Massachusetts	1
Michigan	6
Pennsylvania	1
Total	17

THE GRANGE IN OTHER STATES.

Rhode Island is a small Grange state, but it has a very active State Grange organization under the leadership of State Master Marchant, who at the last meeting of State Grange was elected for the fourth term. The order has become quite a decided influence with the farmers and with state legislation. The secretary reported a total Grange membership in the state of 3,000 in 32 Granges. Principal matters discussed were the protection laws against deer, forest fire protection, Grange first insurance, parcels post and rural free delivery of mail.

One of the most active Grange states in the Union is the old Pine Tree State, which has a membership of 55,000 and is active in everything that pertains to the interest of the Order. At the last meeting of Maine State Grange advanced ground was taken on several important matters. Dr. Leon S. Merrill, for the dairy committee, said that new laws were needed covering the dairy interests and demanded that the Grange present the subject to the incoming legislature. Dairy herds must be improved and sanitary rules enforced. He believed that the sweet cream industry should be encouraged and that farmers should co-operate with the national immigration commissioner in securing good farm help. B. Walker McKen, for the committee on education, said, "There is an unbridged chasm between the schools and the college, and we should try to discover some way to bridge it." He believed that normal school institutes would be a great aid, but they should be an auxiliary to the farmers' institute. Agriculture should be taught in rural schools. Sanitary inspection of the schools was advocated, and the committee urged that the legislative committee use its influence in this matter. The Grange placed itself on record as

opposed to any change in the present arbitration clause of the insurance law. The committee on co-operation emphasized the importance of getting together to buy and sell and urged that this subject be given its proper place in the lecturer's hour in each subordinate Grange. A class of about 500 took the sixth degree.

New Hampshire's State Lecturer, at each annual meeting, submits a report on the literary work done in the subordinate Granges during the year. At the last State Grange, held some months ago, this part of the lecturer's report showed that during the past year there had been delivered in the subordinate Granges of New Hampshire 4,891 vocal and 4,117 instrumental selections of music, 9,024 readings and recitations, 1,371 essays, 823 addresses, 87 dramas, 286 farces, 563 tableaux; there have been 2,629 discussions participated in by 14,691 disputants, and the total attendance at these exercises was 169,716; 203 Granges had 962 disputants discuss the articles of business in the town warrants; they were heard by 7,000 people. The 172 essays on "Practical Forestry" in April were given before 4,011 persons; 187 discussions on "Advertising Natural Attractions," participated in by 623 speakers, were listened to by 3,779, and 191 Granges considered the advisability of a permanent home for the State Grange, with an adverse sentiment. Fifty-seven Granges have property valued at upward of \$1,000, and 56 own Grange halls. The total value of subordinate Grange property in the state is \$159,925.

AMONG THE LIVE GRANGES.

The Latest U. P. Grange.—Deputy John Wilde has returned to Mackinac Co., and Saturday evening, April 3, he organized Newton Grange, at Gould City, with the following officers: Master, E. S. Ketcheson; overseer, John McNeill; lecturer, J. V. Bartlett; steward, J. McGroth; ass't steward, Angelo Cassidy; lady ass't steward, Anna McGroth; chaplain, Anna Welch; treasurer, Wilson Newton; secretary, Joseph Powten; gatekeeper, Clement Rose; Ceres, Mary Ketcheson; Pomona, Elizabeth McGrath; Flora, Mrs. W. Newton. The next meeting of Newton Grange will be held Wednesday evening, April 21, at the Highland Noble hall.

East Bay Passes Inspection.—At the last meeting of East Bay Grange, of Grand Traverse Co., District Deputy E. O. Ladd was present to inspect the Grange. Twelve candidates were put thru the work of the third and fourth degrees. Fourteen applications for membership are now in the hands of the Grange for consideration. Grand Traverse Grange was represented at this successful meeting by George A. Robertson and wife, Louis E. Ainslie and wife and Mrs. Arvilla Gardner. This Grange is accumulating a fund for the erection of a Grange hall, which hall it is hoped will be built the coming season.

Long Rapids Patrons have been fortunate in choosing a live young member for lecturer and the Grange is doing good work. The meeting on Tuesday night, March 30, was especially interesting. The program for the "lecture hour," was a joint debate—five on a side—on the question: "Resolved, that poverty, rather than riches, tends to develop character." The affirmative was handled by Andrew Sanborn, Dr. J. W. Purdy, Miss Kate Morrison, Samuel Martindale and Jos. Kelley. The negative was taken by Mrs. McLennon, O. J. Van Wagoner, Miss Ethel Burdette, Miss Bessie Burns, and Miss Alice Richardson. The decision favored the negative side.

Grand Traverse Patrons Sustain Their Local Board of Trade.

At a recent meeting of Grand Traverse Grange the following resolution was passed by unanimous vote:

"Whereas it is stated upon the authority of the Traverse City Board of Trade that the shippers of farm produce from the Grand Traverse region are being charged 15 per cent higher freight rates than our agricultural competitors, be it

"Resolved by Grand Traverse Grange No. 379, P. of H., located at Traverse City, Mich., that this subject of unfair freight rates be aggressively agitated with the hope that our injustice will soon be taken into consideration by the proper corporate and public officials and we be given a square deal."

In an excellent report of this meeting the Traverse Bay Eagle states that the subject of freight rates was thoroughly discussed from many different angles. It was pointed out that a decrease in rates might affect the incomes of those dependent upon the steel highways to a material extent. It was practically conceded that any large decrease in freight rates would prevent many of those in the railway industry from adopting a higher standard of living.

One speaker made it clear that Traverse City was more than 100 miles to the north of the thru routes of transportation between the west and the east, and therefore had no reason to expect the great trans-continental railways.

Another speaker took up the question of quantity rates and made the point that those regions which made large shipments were entitled to the best rates.

Several of the speakers took the side of the people and maintained the proposition that the farmers of this region cannot successfully compete with the farmers of other regions in the production of farm products, if the other fellows have a 15 per cent advantage in the matter of transportation expense.

It was finally decided to adopt the resolution and thus give the moral support of the local Grange to the transportation committee of the Traverse City Board of Trade in its fight for more equitable rates.

FARMERS' CLUBS

OFFICERS OF THE STATE ASSOCIATION OF FARMERS CLUBS.

President—A. L. Chandler, Owosso.
Vice-President—Mrs. Clara L. French, Pompeii.

Secretary—Mrs. W. L. Cheney, Mason.
Treasurer—D. K. Hanna, Caro.

Corresponding Secretary—Clayton Cook, Owosso.

Directors—D. M. Beckwith, Howell; D. M. Garner, Davisburg; T. B. Halladay, Norvell; E. C. Hallock, Almont; B. A. Holden, Wixom; Wm. H. Marks, Fair Haven.

Address all correspondence relative to the organization of new Clubs to Mrs. W. L. Cheney, Mason, Mich.

Associational Motto.

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

Associational Sentiment.

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

ORGANIZE COUNTY ASSOCIATION.

A joint meeting of Indianfields, Ellington-Almer and Hickory Farmers' Clubs was held in Music Hall, at Caro, on March 4th. The meeting was announced for ten o'clock and from that hour till noon members were still arriving until it seemed doubtful if the hall would accommodate them all. The time previous to the serving of dinner was pleasantly spent in social chit-chat and visiting.

Mrs. Charles Smith, of Indianfields Club, had general supervision of the dinner, which was announced at 12:30. The guests were seated by ushers, the names being called by Charles Smith, president of the day. Immediately deft waitresses became busy catering to the wishes of each one until all were satisfied, then the tables were again relaid and all remaining guests were bidden to feast unstinted. The dinner was unsurpassed for daintiness, yet substantial lavishness and variety, and the 153 persons were fed, the scriptural overflow was there and music was not wanting at the feast.

Prior to the presentation of the program a short business session was held and the question of making this initial meeting an annual event came up for discussion and was carried. Charles Smith, of Indianfields Club, was chosen president of the County Association of Farmers' Clubs, with Mrs. C. L. Wright, of the Ellington-Almer Club as secretary. A soliciting committee and program committee were appointed, "with one member on each from the three clubs represented. The date set for the meeting is the first Thursday in March. Several introductory musical selections were given and President Smith thanked his friends for the honor conferred in selecting him to preside. The first paper was presented by Mrs. Ellen Purdy, "The Road to Yesterday." The rapid strides of the 19th century were marked as the most progressive, the transition from the old to the newer improvements was cunningly linked with golden nuggets fresh dug from the intellectual ledger.

A reading by Miss Margaret Parks occupied forty-five minutes in delivery and was very excellent, her subject being "Ruggles' Dinner Party," by Kate Wiggins. J. J. England being on the sick list, his place was taken by A. Bush, who selected "Crop Rotation to keep up fertility of the soil." Mr. Bush is a pleasant speaker and lamented the fact that he knew so little about this important topic but that if we maintained our rate of progression we must study how to keep intact our inheritance, lest the finger of scorn marks us as slothful and negligent. Nature's plan to feed the animal and the animal to feed the soil and the farmer who works in harmony with nature is the prosperous one. A soil in good tilth will be responsive to good care and its productivity will steadily advance. By husbanding all farm supplies of manure the humus of the soil may be kept intact and better conditions will result. Our stores of nitrogen may be increased by the growing of leguminous plants and react accordingly upon muscles of the animal kingdom. Shipping of hay and grain robs the farm of a large percent of nitrogen which must be replaced by commercial fertilizer, therefore we should appreciate the home supply of manure, that the cry of a robbed soil may not pertain to us, and adhere to nature's plan to return to the soil the remains of all that grows upon it, to a large extent. Barnyard manure not only adds fertility, but loosens up the stored fertility, improves its mechanical condition and lets in the air, and it is better to manure a field often and lightly than seldom and freely. A clover sod followed by corn and beans, then beets, oats, and seed to clover, makes a good rotation. Every farmer should aim to leave to posterity a farm richer in fertility than when he came into possession of it.

"Beautifying the farm home" was the subject of a paper by Mrs. John Frieze, of Hickory Club. Mrs. Frieze, who the farm was not simply a place for making money, that opportunities are ever suggesting how we may transpose our crudest surroundings into bowers of the most beautiful. Art offers many inducements to her disciples of limited means, so many treasures to select from that it is an easy matter to have our homes brightened with a few choice pictures. Music and literature are within easy reach of all. Flowers would act as a stimulus and encourage the enthusiasm of youth and every home should have its flower garden. Water holes are unsightly and are an improvement if filled up. Refuse should be taken care of and not be permitted to disfigure the lawn, and promis-

cuous advertisements should not adorn any of our buildings.

"Feeding and Care of Fattening Cattle," was the subject of a paper by F. A. Turner, who thought if more cattle were fed, better care could be taken of the soil and less commercial fertilizer would be used, that the success or failure of feeding fattening cattle depends largely upon the feeder. The Chicago market offers the best facilities for buying feeding steers in carload lots, as a better bred and more even type of cattle can thus be obtained. Cattle averaging 1,000 lbs., with good antecedents and of the beef strains, are the most desirable. He believes in feeding light at first with clover hay and silage twice a day, then silage in connection with cottonseed meal once a day, until a full feed of 35 lbs. of silage, 2½ lbs. cottonseed meal, 4 lbs. corn meal will bring an animal to finish, so that a 1,000 lb. animal on November 1st will result in a 1,300 lb. animal May 1st, showing a gain of \$2.46 per head for every hundred pounds.

The next paper was "Feeding the Dairy Cow." M. H. Wilsie, of the Almer Dairy Farm, thought a succulent food would produce milk equally as well as proteins and that pulp, clover, and mixed meal made a balanced ration costing about 11c per animal per day, while silage, pulp, and grain gave equally good results. He found one ton of silage equivalent to one and one-half of pulp, and mangles and dry grain was equal to any silage, while dry pulp with a little wetting was as good as the green commodity. It was essential to have a well ventilated stable as a preventive of disease. Cows should be kept quiet at milking time, care being taken not to excite them.

D. K. Hanna discussed some points in Mr. Wilsie's paper, taking the stand that clover hay and silage made an ideal ration for dairy cows, although much depended on the animal, and thinks that from 12 to 14 per cent of Michigan cows are not paying expenses, as the average yield of butter is from 140 to 150 lbs. per cow for the state, while labor and feed were factors which should be considered in this question and skim-milk and manure offset the labor of caring for an animal.

A question box of deserving merit occupied a few moments of time.

Musical and literary numbers interspersed in a pleasant manner, members of the several clubs doing themselves credit in a manner to merit special mention if space did but permit.—Cor. Sec. Ellington-Almer Club.

CLUB DISCUSSIONS.

Good and Bad Birds.—The Spring Arbor Farmers' Club met in March at the pleasant home of Mr. and Mrs. Henry McCullum, with an attendance of 53. All partook of a fine dinner. Question: "Good and bad birds." Mr. Forsyth read a paper telling many bad things about the English sparrow. The English sparrow costs millions of dollars a year. It is the most expensive pest the nation has had and the hardest to get rid of. There is little to be said in its favor. Other birds destroy noxious insects and weed seeds, while insects form a very small part of the sparrow's bill of fare. Other birds eat weed seeds in such quantities, that they save millions of dollars to the farmer. The sparrow does not care for weed seeds, preferring good grain and grass seeds. It eats weed seeds only when others are not obtainable. The sparrow has proved to be the most prolific breeder among the members of the bird world, the annual product of a pair averages about 24 nestlings and, assuming that all these and their offspring should live, in 10 years the progeny of a single pair would be 275 million. On the recent bird survey of Illinois it was found that this pest formed 18 per cent of the bird population of that state. Many other destructive habits of the sparrow were mentioned, demonstrating the necessity of making war on them to get rid of them as quickly as possible. Miss Gilder-sleeve read a paper about good birds. The little wren is one of the best. It will live among the grape vines and shrubbery and search for all of the worms and bugs.—Mrs. A. Carter, Reporter.

The Township Unit School System was a subject of general discussion at a recent meeting of the Ingham County Farmers' Club. Mr. E. A. Holden, in discussing it, said it had been tried in the upper peninsula and he gave some startling figures in regard to cost and results, taking an equal number every time and having surroundings as nearly alike as possible. What cost \$94,000 under the unit system cost \$55,000 with the present system. Take it in another way; what it cost for each pupil under the unit system was \$20.00 and under the district only \$11.00. He had another set of figures, comparing the northern counties of Indiana with the southern counties of Michigan. When the conditions were much the same and with less number days of school, it cost 70 per cent more to run the schools of Indiana under the unit system than it did in Michigan under the district system, and Indiana has had the unit system for 40 years. This unit system has a tendency to plunge our school districts into politics, which we want to avoid, and wherever tried has been more expensive, with no better results. Many questions were asked, all of which were answered good naturedly. A vote of the club seemed to show a majority of those voting to be opposed to the unit system, many not venturing an opinion.

Have You Systemic Catarrh?

Vitae-Ore, which is advertised on the last page of this paper on free trial to those who need it, is recommended for Catarrh of any part of the system. Hundreds have used it for Catarrh with splendid results. If you need it, send for a \$1.00 package on thirty days' trial. Don't pay a penny until you are benefited.

O. K.

You Can Prove It

by testing it for thirty days at our risk. You can learn for yourself why it is O. K., can learn how it does its work O. K., why our thirty-day trial plan is O. K. and how it makes men and women O. K.—sound as a dollar—without putting up a penny to do it. We treat you O. K. and want no money from you unless it helps you, unless you can write us that you have tried it and found it O. K. Your O. K. does it all—it is all left to you. If you cannot O. K. it, if you cannot say it is **ALL RIGHT**, you do not pay a single penny for it.

If you are not feeling right and do not send for Vitæ-Ore on our thirty-day trial offer, you miss a chance to get well, a chance you have been looking for, a chance to be O. K. in body and mind, a chance to be happy through perfect health. There are no strings tied to our thirty-day trial offer. There are no "ifs" and no "buts." There are no questions to answer, no long letters to write, no appliances to buy, no references or past history to give. Getting it is as simple as A, B, C. Just fill out the Coupon, giving simply your name and address, so we will know you want it and where to send it and it will be sent right to you by next mail, everything prepaid.

A trial of Vitæ-Ore will tell you its own plain story, a story which has meant **HEALTH-PEACE and BODY-COMFORT** to thousands of men and women and a blessing on Farm and Ranch and in town homes.

Your Own Common Sense

will tell you that it must do its work O. K., or it could not be sent in this way, without a penny paid until it helps. Vitæ-Ore should be no stranger to you. You must have seen it advertised over and over again in this paper, must have heard it pronounced O. K. by many of your neighbors, must have heard that we send it out on trial, exactly as we advertise. Your friends who have had trial packages can tell you all about it, but we want you to try it, to learn for yourself that it is O. K.

Why don't you cut out the coupon and send for it today? With this offer before you, with the positive evidence on this page imprinted on your brain, how can you ignore, hesitate, delay or refuse? What is your excuse? You are to be the judge and need not pay one penny unless and until you are benefited, until you find it O. K. We take all the risk. Read our thirty-day trial offer, read what Vitæ-Ore is, read the positive proof of its work given on this page and then cut out the Coupon and mail it today.

Had Stomach Trouble And Gall Stones.

GREENCASTLE, MO.—I have been troubled with my Stomach for fifteen years and with the Yellow Jaundice and Gall Stones so bad I could hardly eat anything at all. I had been treated by three of the best doctors I could get and used all the patent medicines I heard of. All of this cost me several hundred dollars, but I got no relief from doctors or medicines; in fact, I kept getting worse all the time. At the time I commenced to use Vitæ-Ore the doctors told me that I did not have long to live. Previous to my sickness I had weighed 184 pounds, but at the time I began to use Vitæ-Ore I weighed only 130 pounds. After using it for eight weeks I gained to 157 pounds. I have a good appetite, don't feel any pains or trouble and am gaining in weight right along; in fact, I feel like a much younger man, although I am now 62 years old. Two packages of Vitæ-Ore did more for me than all the doctors did. It has prolonged my life and you may be sure that I will recommend it to all sufferers.



B. F. ELSE.

You Are To Be The Judge

Use Vitæ-Ore For

Rheumatism and Lumbago, Kidney, Bladder or Liver Disease, Dropsy, Stomach Disorders, Female Ailments, Functional Heart Trouble, Catarrh of Any Part, Nervous Prostration, LaGrippe, Anemia, Bloodlessness, Piles, Sores and Ulcers, Constipation and Other Bowel Troubles, Impure Blood and Worn-Out, Debilitated Conditions. A 30-day trial treatment will prove what it can do for you.

This Is Our Trial Offer!

We Want To Send You a full-sized One Dollar package of Vitæ-Ore, enough for 30 days' continuous treatment, by mail, postpaid, and we want to send it to you on 30 days' trial. We don't want a penny—we just want you to try it, just want a word from you asking for it, and will be glad to send it to you. We take absolutely all the risk—we take all chances. You don't risk a penny! All we ask is that you use V.-O. for 30 days and pay us \$1.00 if it has helped you, if you are satisfied that it has done you more than \$1.00 worth of positive actual, visible good. Otherwise you pay nothing, we ask nothing, we want nothing. Can you not spare ten minutes during the next 30 days to try it? Can you not give 5 minutes to write for it, 5 minutes to properly prepare it upon its arrival, and 3 minutes each day for 30 days to use it. That is all it takes. Cannot you give ten minutes time if it means new health, new strength, new blood, new force, new energy, vigor, life and happiness? You are to be the judge. We are satisfied with your decision, are perfectly willing to trust to your honor and judgment, as to whether or not V.-O. has benefited you. Read what Vitæ-Ore is, and write for it today.

Nervous Prostration For Six Months.

COMO, TENN.—Vitæ-Ore cured me after the doctors' medicines failed to do me any good. I was taken with Chills, which got my whole system and nerves wrecked. We had two doctors attending me, one of whom pronounced my trouble Consumption; the other said it was merely Nervous Prostration. The medicine they gave me did not do me any good at all. I was ill for six months and could not sleep night or day. I had something that seemed like Heart Trouble, with smothering spells. Sometimes I would have five or six spells a day and through the night. I was so weak I was almost helpless when some friends insisted that I should take Vitæ-Ore and quit the doctors, as they were doing me no good, and I took their advice. My weight when I started to use Vitæ-Ore was 90 pounds; I now weigh 128 pounds, more than I have ever weighed in my life. I could feel a benefit after taking Vitæ-Ore two weeks. I feel that I owe my present health to God and the Theo. Noel Company's Vitæ-Ore.



MINNIE OWEN.

CUT OUT THIS COUPON

Theo. Noel Co., Vitæ-Ore Bldg., Chicago, Ills.

I have read your large advertisement in the **MICHIGAN FARMER**

and want you to send me a full-sized One Dollar package of Vitæ-Ore for me to try. I agree to pay \$1.00 if it benefits me, but will not pay a penny if it does not. I am to be the judge. The following is my address, to which the trial treatment is to be sent:

Name _____

Town _____

State _____

Street or Rural Route _____

Read What Vitæ-Ore Is.

Vitæ-Ore is a mineral remedy, a combination of substances from which many world's noted curative springs derive medicinal power and healing virtue. These properties of the springs come from the natural deposits of mineral in the earth through which water forces its way, only a very small proportion of the medicinal substances in these mineral deposits being thus taken up by the liquid. Vitæ-Ore consists of compounds of Iron, Sulphur and Magnesium, elements which are among the chief curative agents in nearly every healing mineral spring and are necessary for the creation and retention of health. One package of this mineral substance, mixed with water, equals in medicinal strength and healing value, many gallons of the world's powerful mineral waters, drunk fresh at the flowing springs.

For Internal and External Use.

Has Neither Ache Nor Pain.

LYNN, MASS.—I cannot say too much for Vitæ-Ore. I have been bothered with Rheumatism ever since I came home from the Civil War. Sometimes it was very bad and gave me many a siege that proved it the hardest enemy I ever went against. I also had Kidney Trouble and Piles and have paid out hundreds of dollars to get help. All the remedies I used never did me as much good as a thirty-day trial treatment of Vitæ-Ore did in two weeks time. It is now over two months since I began to use Vitæ-Ore and I have not had an ache or pain about me. I am feeling fine. My joints are now limber and I have good use of all of my limbs. I feel confident that Vitæ-Ore has entirely cured me of this disease. It seems hard to believe that so much good could be accomplished in so short a time by any one remedy, but it is a fact, and I will be glad to have you publish it if you wish to do so. I hope all the old Veterans, north and south, will try Vitæ-Ore and I think they will make no mistake in so doing, for it seems just the thing for us.



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