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IN considering the very important subject of making pork at a small cost to the producers, there are several factors which should be taken into account. One of the items which cost most at the present time is the labor, feeding and caring for the hogs.

If we follow the plans in vogue with some of the up-to-date breeders and pig raisers, we will bestow a good deal of expense on the preparation of some of the feeds in the way of husking corn, hauling all the feeds to the mill, pay for grinding and giving a ration of mixed feeds, balanced according to the books, which means a considerable outlay for labor. It is often the expense for labor that precludes the laying by of liberal profits.

Some Old Style Methods.

I am aware that many would hold up their hands with horror if I were to hint that some of the hog raisers of fifty years ago could discount our modern systems of pork production as far as low cost is concerned. We have the advantage of improved breeds with which to operate, and yet we are often too lavish with the outlay of feeds which are costly and labor which is expensive. The secret of producing pork cheaply lies in selecting such feeds as are not only cheap in price, but easy to obtain as far as labor is concerned.

The hog raisers of 50 years ago had what we call the old style breeds which to operate, such as the Irish Grazer, Byfield, Polish, Red Russian, Big China, mongrels and mixed breeds. Some of those hogs carried ponderous names that only survived their day and generation. As railroads were not plentiful, one characteristic was absolutely necessary; each and every hog must have strength of bone in the leg sufficient to carry the fattened body to market. The process of growth of the pigs was necessarily slow, as it was the custom to compel the hogs to subsist on such grasses as they could find in the pasture fields and woodlots in the summer, eat of the shack (acorns and nuts) in the fall, and were given just a living ration during the winter. The second summer they were allowed grass again, and the process of fattening for market was begun in the fall by allowing them to glean the grain fields of what grain would

Making Pork Cheaply.

otherwise have been wasted, allowed to eat shack if it were plentiful, and finally confined in the pen and fattened for market. In the corn-growing portions of the country it was customary to hog down the corn, allowing the hogs to harvest their own grain which was to fatten them for market.

It will be seen by the processes described that the outlay for labor was small. Even if more labor had been bestowed on the hog business, the cost would not have been large for the prevailing summer wages for "hired men" was but \$12 and \$13 per month. During the War of the Rebellion the prices by a depreciated currency, made the outlook

tage of pig raisers of today. I refer to the plan of compelling the pigs to gather a part of their feed if possible. Such a course reduces the cost of maintenance and growth, and tends to promote the health, strength and vigor of the pigs themselves, and consequently insures a greater profit to the raisers.

There are some things we have learned that are firmly fixed in mind. One of the things learned is that it costs more to produce pork on grain alone than when part of the feed is grass, clover or rape. Another thing we have learned is that the gains when pigs are compelled to subsist on the grasses and clovers alone, is too slow to be profitable under present

ket value and the character of the feed as to profitable results, should be considered. At present market prices, corn and oats are the cheapest of the feeds, but as such a mixture contains too large a proportion of carbohydrates, the elements that furnish heat and energy to the body, and not enough protein, the elements that promote the growth of bones, muscles and vital organs, we will suggest that an equal amount of wheat middlings be used with the corn and oat chop. In such a mixture there is a better balance of the nutrients, making a cheaper and better feed, for better results can be obtained. Another advantage gained by using the middlings is that it adds to the palatability of the feed, a point that should not be overlooked.

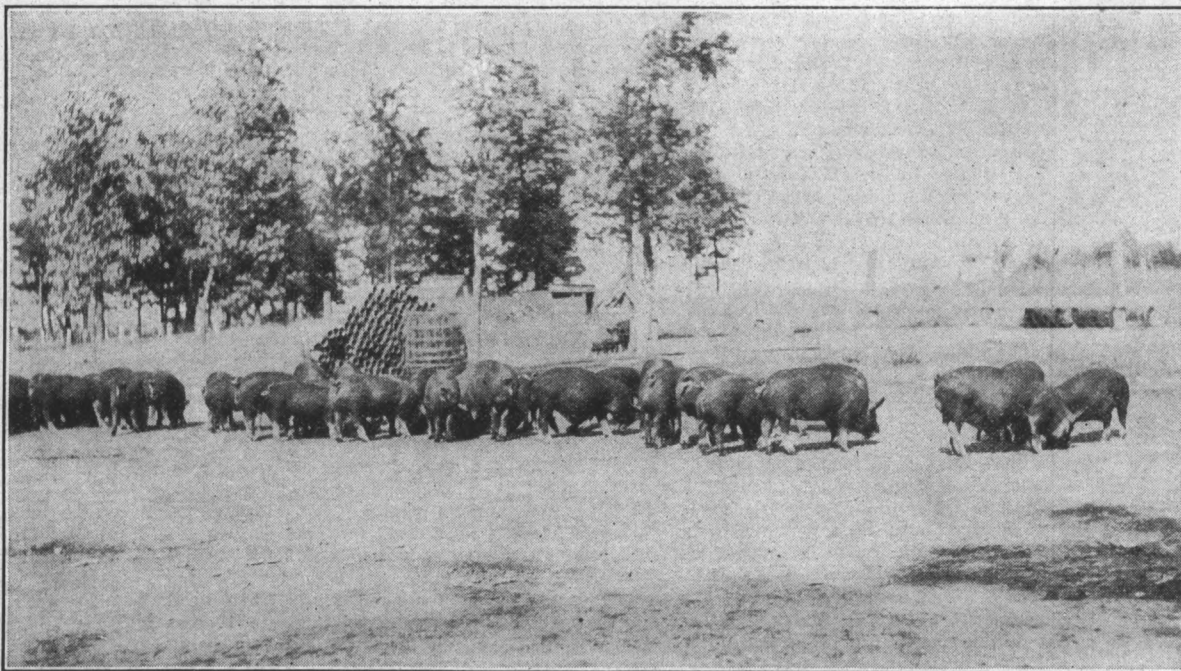
If such a mixture of feeds be soaked 12 hours in water, and if skim-milk, buttermilk, dishwater or whey can be added before feeding, all the better, it will be in a form to be relished and will be easily digested. As to moisture, I will say, make the feed just about as thick as it will run. If too thin and sloppy the pigs get too much water, which will throw them out of shape, make the kidneys work too hard, and they will not thrive well.

If pigs are fed of such feeds twice per day, morning and evening, only as much as they will eat up clean readily, they will eat of grass and clover all they can hold twice per day, forenoon and evening; will lay in the shade or pen the rest of the time, enjoying life, because they are making growth and heavier weights rapidly. I will suggest that young pigs be given a noonday

lunch of either whole corn or a feeding of the regular mixture. When pigs are small their stomachs are not large enough to hold feed enough to last them 12 hours.

By using skill and good judgment in making pork from young hogs, we can grow the pigs to popular market weights in less than one-half the time that the farmers of 50 years ago did, and what is more, the meats from our young hogs are sweet, tender, juicy and palatable, just what the exacting consumers of today demand. There is but little demand for the old style hard side pork. It is the intermingling of the fat and lean

(Continued on page 464).



A Suitable Grain Ration on Pasture Makes for Economy in Pork Production.

seem different, but reckoned by the standard of a gold basis, prices did not advance. The costs for feed in those days were small to the farmers for the hogs were compelled to gather their own living while growing, and in many instances gather their feed while fattening for market.

Plan Now for the Season.

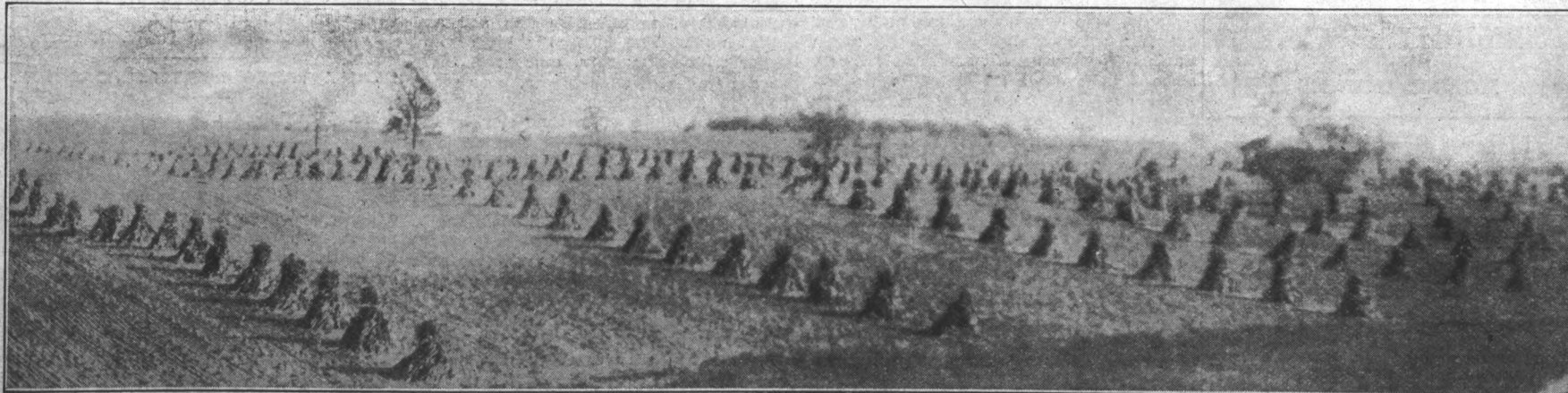
While it is not my intention to urge pig raisers at the present time to copy the old-time methods of raising hogs for market, for conditions have changed greatly, yet there are hints which are well worth remembering, and the methods can be adapted in part to the advan-

day conditions. The best results are obtained when the pigs can get all the grass and clover they want, and at the same time are fed a moderate and yet palatable grain ration twice, and in some instances, three times per day.

The spring of the year is a good time to plan for a needed supply of green feeds. If there is not a sufficient supply of grasses and clovers to meet the needs of the pigs, sow some rape for them to run on. Sow some peas for them to gather. They enjoy such work and pay well for the privilege of doing it.

The Grain Ration.

In selecting the grains used, the mar-



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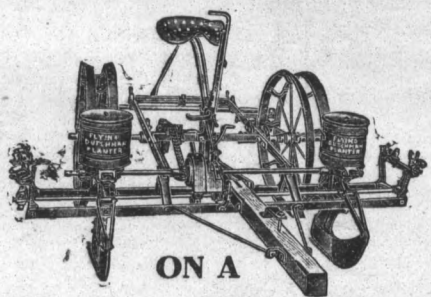
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TILE DRAINING IN HARDPAN.

I have read much in the Michigan Farmer about drainage, but the land to be drained seems to be different from mine, so I am writing for information. My soil is a black, sandy loam, underlain with fine whitish clay and sand, which forms a hardpan that holds the water from sinking away. The hardpan is from six to 18 inches below the surface soil and the ground is very level with none too much fall for draining. In the spring and fall, and in summer when we have heavy rains, the surface soil becomes a quagmire and remains wet so long that the land has become cold and sour and produces but very little. A neighbor who had a small pond with soil similar to mine thought he would tile drain it, so in a dry time he had it surveyed, laid the tile and filled the ditch, and behold, when the rains came the pond resumed its former size and remained to gladden the lives of toads and bullfrogs. My neighbor dug down and found that the tile were open but the fine clay and quicksand would not let the water soak or penetrate into the tile and run off. To lay tile on my land the ditches would have to be dug in this hardpan to get the tile below the plow. Does anybody know whether it would work to fill the ditch over the tile with the surface soil; would that let the water soak through and into the tile? Will someone who has had a like experience please give us their views?

Oceana Co. J. B.
This is the first time I ever heard of laying tile in any soil where they were properly laid and water couldn't get into the tile, the soil of such a consistency that it prevented the water from entering in between the ends of the tile, and I am inclined to believe that there is some other reason instead of this. In my own mind I am almost positive that this must be the case. I have laid tile in all kinds of soil seemingly, and I have never had any such experience as this. The only way to tile drain this land is to just simply cut through the hardpan and put your ditch down at the proper depth and pay no attention to the hardpan, and if you do and have sufficient fall so the water will run, and lay the tile properly you will find that the tile drains will drain the land and do it nicely.

If I had a field like this I believe I would try breaking up this hardpan with dynamite. I think it would be an excellent place to try dynamite. It would probably crack and break this hardpan so that much of the water would pass through it, and drain into the tile very much quicker than if it was not broken. I believe it certainly would pay to try dynamite on a portion of the field. J. B. doesn't say what the condition of the soil underneath the hardpan is. If it is an open porous soil perhaps all that would be necessary would be to break this hardpan and let the water get through it when the sub-soil, if porous enough, would take care of the moisture, but if not it certainly would go into the tile drains. If you laid the tile drains four rods apart and then would use dynamite break up this hardpan so that there would be no question but what the water could get to the drains.

When one digs a ditch for a tile drain, lays the tile, and puts the soil back in, it is almost impossible to put the soil back in the same way it was taken out and the surface soil and the sub-soil is all mixed up together, and I don't see how it could in any way prevent the water from getting into the tile.

I would expect some of this fine whitish clay, so-called, would pass through with the water through the openings of the tile into the tile and then would pass out of the tile by the running water. This will do no harm and will open little channels in the soil so the water would afterwards pass out more rapidly.

COLON C. LILLIE.

MORE ABOUT ALFALFA IN OSCEOLA COUNTY.

I would like to answer Hon. W. H. Schantz, who asked about my method of growing alfalfa, through the Michigan Farmer, for the benefit of others as well, since I believe we all ought to try alfalfa, as all will appreciate after they have fed it to stock of all kinds.

I had a five-acre field, well manured, before planting to potatoes the previous year, and worked well before sowing to alfalfa at the rate of 12 pounds per acre with a nurse crop of one bushel of oats to the acre. I cut the oats for grain and had 34 bushels per acre. Part of the alfalfa was blown off, which I reseeded the next spring in the same way and now have a good stand on the field. The same spring (1912) I sowed seven acres more; four acres on potato ground, where I have a fine stand, and three acres on winter rye where I harrowed the seed in with a spike-tooth harrow. I will not

try this again, however, as the stand is not good and the plants are much smaller. I used no inoculation whatever, but every plant seems to have the right color. My experience with alfalfa is, have the ground well fitted, free from June grass, well manured a year previous, and sow about May 15 with a nurse crop of oats or barley.

Osceola Co.

S. UPKES.

BEAUTIFYING THE FARM BY PLANTING FOREST TREES.

It will soon be time to plant trees and this state has wisely set apart a day for this purpose. But the trouble is, so many fail to observe Arbor Day. A great many farms could be improved in appearance if a few forest trees were planted in the lawn and around the dwelling, and also along the roadside. For a shade tree there is nothing more beautiful than the sugar maple and with a little care they grow quite rapidly. It seems but a few years since I planted some sugar maples on our lawn and by the roadside, and now we are making all the syrup we need from sap gathered from these same trees. And not only that, but for a number of years we have enjoyed much pleasure sitting or lying in the hammock under the shade of these beautiful trees, which no money could buy.

Where trees, such as the maple, etc., suitable for transplanting cannot be obtained on the farm, they can be purchased of almost any nursery. It is advisable not to plant forest trees that are over two inches in diameter, because larger trees are more apt to die. The worst enemy of the sugar maple is the borer, which attacks the tree near the base, and the only way to get rid of these pests is to dig them out with a piece of wire or a small blade of a knife. The borers should be looked after the first and second year after the tree is planted. After a tree begins to grow vigorously the borers will not trouble it much. The first year especially, after a forest tree is planted, fine straw or some other mulching material should be used to keep the roots moist. It is also a good plan to nail a couple of narrow strips of boards together in the shape of a letter V, and fasten this to the south side of the tree to protect it from the hot rays of the sun. In closing, let me urge every farmer to plant a few more forest trees this spring, and you will never regret it.

Ottawa Co.

JOHN JACKSON.

MAKING GOOD ROADS WITH THE KING DRAG.

Gradually farmers are beginning to appreciate the value of the King drag as one of the best and cheapest ways of producing good roads. In Erie county, Pa., it has been used to some extent, although not so universally and systematically as it should have been for best results. Prizes for good roads have been awarded to every district where it was used, the roads in these districts being characteristic by being better the year around, although previously they were no better than roads where the drag was not used.

The King drag is so simply and cheaply constructed that many farmers think it is no good. Road dragging does not mean going over the roads with an ordinary farm harrow, an impression that many farmers have, but with a device made of split logs with a straight edge and drawn at an angle. It is called the King drag from the name of the inventor, D. Ward King, of Missouri, who has done much for the cause of good roads by the development of this idea.

A good road is one that has a hard surface and sheds water quickly. The King drag makes such a road, if used at the right time. Mud puddles start from small depressions in the road. Water collects here, mixes with the soil and makes mud. The hole gets bigger and deeper with every rain, and when there are a number of such places, poor roads are the result. The King drag keeps these holes filled and in time elevates the center of the road bed so that there is a gentle slope in each direction to the ditches on either side. When the rain falls the hard sloping road bed sheds the water and as there are no depressions in the surface for the water to collect there will be no mud puddles. The water runs away before it has time to mix with the soil and even in unfavorable weather roads always are in good condition.

Frequent use of the drag is much more effective than extensive use only a few times each season. A stitch in time saves nine, is as true in road work as it is in everything else. One week's time

in repairing roads extending through the season will be more effective and accomplish more good than a month's time when the work is done at one time and the roads totally neglected the rest of the year.

The most favorable time for use of the drag is soon after a rain. Roads ought to be gone over at least twice a month during the season. Beneficial effects may not be so noticeable at first, but the improvement is gradual and permanent. Slowly the center of the road bed will be elevated, the surface hardened and good drainage provided, which is the most important essential for good roads.

The scraper makes a road uneven and rough and fills the center of the road with sods and loose earth, thus forcing traffic to one side. Rains wash the dirt back to the ditches and the working has little or no value. The effect of a good road drag is just the opposite, keeping the roads good all the time. A road drag can be operated cheaper and is more effective than a road scraper.

Penn.

L. J. HAYNES.

GROUND MOLES.

In the issue of March 29 inquiry is made in regard to moles. Last season we treated sweet corn and peas by coating the seed with pine tar, with fair success, to prevent its destruction by moles or field mice—which?

The Department of Agriculture assured me some years ago that moles never were guilty of destroying seed of any kind, but the field mice following in the runways of the mole did the damage. The moles surely destroy many destructive grub worms; and they also eat quantities of earthworms, which are very beneficial to the farmer, but if they are guilty of only furnishing runways for the field mice to use in the destruction of our seed corn and peas, perhaps they should be protected.

Some time before you are ready to plant, dampen your seed corn and peas. Let them stand, say over night, then add about a tablespoonful of pine tar to one quart of seed, and stir well to distribute the tar evenly over the surface of the seed. If seed is not well coated add more tar. When ready to plant roll the seed in plaster, air-slaked lime, or sifted ashes and it can be handled quite readily.

Some say add kerosene to seed, but I should expect this would prevent germinating unless used very sparingly.

Barry Co.

SUBSCRIBER.

DRAINING MUCK LAND.

Have some land on which the muck is four to eight feet deep, with plenty of fall to drain well. I have been told it would not pay to drain it, as where muck is so deep it is leachy and costs more to fertilize than the land would be worth. Land is easy to clear, being lightly covered with pole willows and other soft timber, mostly small stuff. Would also like to ask about using cement tile on this kind of land.

Jackson Co.

L. P.

I would not consider four to eight feet deep muck. There are many swamps with muck known to be much deeper which are producing good crops each year without the use of fertilizer, although when cropped for several years an application of stable manure is found to be of benefit. For best results deep tile draining is found to be necessary, as a sheet of water will lay at the bottom of the tile which will make the land cold if too close to the surface. Tile laid four feet is not too deep if proper fall can be had. If muck is light and flaky it will not produce well until it rots. Cultivation and exposure will hasten the decomposition. There may be leachy muck but none known to the writer.

Cement tile have not given satisfaction in all cases. The fault may be in the material used, the mixing or the amount of water used in making.

Hillsdale Co.

W. G. BOYD.

PLANT TREES BY THE ROADSIDE.

Mr. Washburne did not tell us in his recent article if he tolerated any shade trees along the roadside. I have seen places in the Province of Quebec where there was apparently 500 acres with not a bush or tree growing upon it. We are not in favor of making a park or forest of cultivated fields, but think that one or two trees in a ten-acre field improves the looks of a farm.

Livingston Co.

C. H. HILL.

The Michigan Farmer at the new rates of 50 cents a year, \$1.00 for two years, \$1.25 for three years, and \$2.00 for five years costs less than one cent per week.

FARM NOTES.

Sowing Rape with Oats.

Will you please tell me how much rape seed should be sowed to the acre? Also, if rape can be successfully drilled with oats?

Clinton Co.

C. N.

Rape can be sown with oats and will make a considerable amount of forage after the oats are harvested, depending upon the weather conditions. In a favorable season a large amount of feed will be produced. About four pounds of seed should be used per acre, permitting it to fall ahead of the drill hoes when drilling the oats. The only objection to this plan is that sometimes the rape grows up large enough in the oats to make considerable green stuff in the butts of the oat bundles. In this case, however, the oats can be threshed directly from the field or at once after drawing to the barn or stack.

Sowing Red Top with Timothy.

I have a field of rather low ground which I have seeded to clover several times. The clover will come up and grow well the first season but always heaves out during the winter. The ground this spring is covered with clover roots. I was thinking of seeding it to timothy and red top, as I never have sown any red top I wish to get some information in regard to sowing it. Should I fit the ground the same as for other seed? What time of the season should I sow it, how much seed to the acre? Should it be sown broadcast and harrowed in? Can the red top and timothy be sown together? Can any of my brother farmers suggest any kind of grass that would be better than red top and timothy? It is a gravel clay loam on the river bottom, I think some quicksand bottom, usually water within three to four feet of the surface. Would orchard grass do well on such land? Should the red top be sown with or without any other crop?

Kalamazoo Co.

C. W. D.

Red top is often sown with timothy on this kind of land and alsike clover may be profitably added to this combination as it will not heave so badly as other clover and will endure a more moist location. Where a thick seeding is desired six pounds of red top and six pounds of timothy are sown per acre, or if alsike clover is used in this combination three pounds of alsike, four pounds of timothy and four pounds of red top should be sufficient. Orchard grass is not so well adapted to this sort of land as to upland. This combination of grasses can be best sown in the spring as soon as the soil can be well fitted. Of course, one would not get a very profitable crop the first season as it takes these grasses a considerable time to get well established.

Sand Vetch in Michigan Agriculture.

Will you please give me instructions about growing vetch? I have a sandy hill of about five acres. Would it be advisable to grow it as a spring crop for hay and how would you manage in sowing it?

Wayne Co.

E. A. L.

The common hairy or sand vetch grown in Michigan is sown in midsummer about the middle or latter part of August in combination with rye. Vetch being a vine, the rye will hold it up so that it can be harvested as a forage crop the following season. There are a number of varieties of spring vetch, which, however, have been little grown in Michigan. At the Ohio Experiment Station they did not give nearly as satisfactory results as the winter vetch and are not recommended.

Stable Manure for Beans.

I have eight acres of quite heavy clay which has been run some for two years. Two years ago I manured it very heavily and planted it to corn. Last spring I cultivated and sowed to oats. This spring I want to manure it again and plant it to beans. Will the manure injure the beans? Some say it will rust them.

Genesee Co.

A. P. C.

There is some foundation for the more or less general opinion that stable manure applied to bean ground tends to promote fungous diseases, which are designated under the common name of rust in this inquiry. This might be particularly true if the manure were made in part from the feeding of bean fodder from a crop which had been infested with anthracnose or other fungous diseases. In any event, the presence of the manure would tend to promote a more rapid development of the fungus where the germs were present in the seed or soil. Also, beans being a leguminous crop do not require an excess of nitrogen to make a vigorous growth and the application of considerable quantities of stable manure might tend on some soils to promote a heavy growth of vines rather than a liberal setting of pods, unless the stable manure were supplemented by an application of mineral fertilizers.

However, on ground that has been cropped continuously for several years, it is beneficial to add vegetable matter to the soil and a light dressing of stable

manure under these circumstances would, in the writer's opinion, be beneficial rather than otherwise to the bean crop and certainly to the soil and succeeding crops. Both experimental data and the experience of bean growers, however, point to the use of a limited amount of mineral fertilizers rather than stable manure for the bean crop, but much would depend upon the condition of the soil. If there was a heavy growth of oat straw there probably is enough nitrogen in the soil without the addition of stable manure, but if there is a deficiency of humus it might be used with profit.

Cowpeas vs. Beans.

Would cowpeas be good for seed grown in Van Buren county? We would like to try a crop this year in preference to beans. Would you consider it a profitable crop and would it be better for the soil and leave any nitrogen in ground? Also would there be a ready market for Michigan grown seed?

Van Buren Co.

L. E. G.

The early varieties of cowpeas would mature in southern Michigan if they are planted for seed-growing purposes. However, only northern grown seed should be used as otherwise a crop could not be matured. There would doubtless be a good market for Michigan grown seed either by selling direct to those who desired same for planting or marketing through seedsmen, although the market would not be as stable as for beans. The cowpea is a leguminous crop like beans, and is principally valued as a soil improver where plowed down for green manure. Where a seed crop is matured, however, there would be no more beneficial effects upon the soil than where a crop of beans is grown for the same purpose.

Crops for Muck Land.

Have four acres of muck which is from six inches to two feet deep. What kind of seed would be best to sow on this for hay? What time of year is best to sow it? Also have a piece of drained muck grown up to June grass on which I want to grow onions. What can I use to prevent cutworms from bothering? Would an open ditch drain land of this kind better than a tile drain?

Kent Co.

D. L. L.

A good combination for this land would be timothy, redtop, and alsike clover. About four pounds of each of the former and three pounds of the latter sown in the spring without a nurse crop would insure the best stand of these grasses.

Fall plowing followed by early cultivation in the spring is the best remedy for cutworms, but where this has not been done the use of poisoned bran mash scattered over the surface before the plants come up will kill many of the worms, and on small areas of garden crops this plan may serve a good purpose.

A well laid tile drain is as efficient as an open ditch where it can be laid at a reasonable depth.

THE DISC VS. THE CUTAWAY HARROW.

Which is the most practical and the best general purpose harrow for pulverizing heavy sod, and also for loosening up ground in the spring before plowing, the whole disc or the cutaway disc?

Berries Co.

D. W. P.

My experience is that the cutaway harrow will dig better in sod ground and on hard clay ground than the disc harrow. The reason is because of the fact that not such a large part of the surface of the discs rest on the ground at the same time with the cutaway as does with the disc harrow, the disc harrow being a continuous blade. Something, of course, has to do with the size of the discs, the smaller the discs the better it will go into hard ground; that is, a 16-inch disc is a better machine to dig in hard ground than a 20-inch disc. On all ordinary ground either one will do good service. You will find that it will be quite difficult to dig up a good stiff sod with either a disc or a cutaway harrow. It will have to be loaded pretty heavy and you will have to go over it a number of times before you dig it up very thoroughly.

COLON C. LILLIE.

BOOK NOTICE.

"The Gasoline Engine on the Farm," by Zeno Putnam, is a practical comprehensive treatise on the construction, repair, management and use of this great farm power as applied to all farm machinery and farmers' work in-doors and out. Because of its simple, non-technical exposition of mechanical principles, this work is especially valuable to those without technical knowledge who wish to become thoroughly familiar with the operation and care of gasoline engines, tractors and auxiliary devices. Five hundred and twenty-seven pages, 179 engravings, price \$2.50. Published by the Norman W. Henley Publishing Co., 132 Nassau street, New York.

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Spalding users—on a thousand farms—are reporting their increased crops and enhanced land values. Below are a few such reports—many more are waiting for your inspection in our *Experience File*. All these men read about the *Spalding Deep Tilling Machine* a year or so ago and realized *then and there* that they didn't have any time to waste, so they got busy and *now* they can report as they do.

Spiceiland, Ind., Oct. 15, 1912. I am well pleased with the machine, although this was not a dry season. I have 20% more corn on the field broken with it.

H. D. GORDON.

Monmouth, Ill., Apr. 27, 1912. I plowed 40 acres with a gang plow to the ordinary depth and 30 acres with the Spalding Deep Tilling Machine to a depth of 15 inches, cutting a furrow about 12 inches in width. At this width and depth, I consider it of light draft.

This field was put in corn, all tended and cultivated the same, the only difference being that the ground plowed with the Tiller was

much easier to get into condition for seeding, due to the manner in which the machine pulverizes the soil. The yield of corn per acre was as follows:
Ground plowed with Gang Plow, ordinary depth, 24 Bu.
Ground plowed with Spalding Machine, 15 in., 61 Bu.

I will admit that the above results sound unreasonable, and have had a hard time realizing that it was so, but wish to say that the above results were not gained through guess work, but by actual weight.

F. I. BROWNELL.

Delphi, Ind., Dec. 13, 1912. Although this was not a very good year to get results from deep

spring plowing, I saw a marked difference in the potato crop on land deep tilled to that on land plowed the ordinary way; the difference being in favor of the Spalding Deep Tilling Machine.

W. C. SMITH.

Valley Mills, Ind., 8, 26, 12. The Spalding Machine pleases me very much. The way it mixes and pulverizes the soil is wonderful. The yield of the part plowed with the Deep Tiller is 30% greater than that plowed with the mould-board plow. The deep seed bed seems to prevent extremes of weather (wet or dry) from injuring the corn.

H. C. MOORE.

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Spalding Dept. 65, GALE MFG. CO., Albion, Mich.

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The Angle Steel Rib prevents the "cave in." It would be necessary to bend edgewise the horizontal flange on the Rib before the Silo wall could collapse.

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Dairy.

CONDUCTED BY COLON C. LILLIE.

CEMENT FOR STABLE FLOORS.

I would like Mr. Lillie's opinion on cement floor for horses and cattle. I am going to put floors in my horse and cow barn this spring. I intended to put cement under horses and then plank on top. I don't know whether cement would be a good cow floor or not.

Alcona Co.

E. B.

Cement floors are all right for both horses and cattle. It isn't practical to put in any other kind of floor. Wood is expensive and it doesn't wear well, and besides, it is impossible to make a good sanitary stable with a wooden floor. I am aware that there is a notion abroad that it isn't good for horses to stand on a cement floor but I don't think there is anything in this at all. My horses have stood on a cement floor now for the last six or seven years and I have never seen any injurious results. Of course, a cement floor for a horse stable or for a cow stable as well, ought not to be troweled down so that it is real smooth. It is a splendid thing to smooth it off with a wooden trowel instead of the metal trowel. This leaves the surface a little bit rough so that horses don't slip. Once in a while, of course, in the winter time when horses come in with snow on their feet a stable floor is pretty slippery and yet, if it is smoothed off with a wooden trowel when it is made, or perhaps just before it sets, if it is swept thoroughly with a steel broom, that leaves the surface so that it isn't too smooth. When this is done there is no particular danger of horses slipping and there is nothing in the fact that it injures their feet to stand on a cement floor.

There is another notion abroad, and that is that if cows lie on cement floors they are liable to have garget. I don't think there is anything in this. It may be that cows that never were accustomed to a cement floor and they were put on a cement floor it might at first cause some inflammation of the udder, because a cement floor certainly does take away some heat from the body, but thousands and thousands of cows lie on a cement floor and they do not have garget, so certainly after they get used to it there is no trouble about this. So far as personal experience is concerned, I know nothing about cows lying on a cement floor, because we have a model stall and this model stall provides a straw bed for them to lie on so that the udder and, in fact, no part of the body comes in contact with the cement floor. But the majority of cows are kept in stanchions and the majority of them are kept on cement floors and there are no bad results.

DRINKING BOWLS FOR COWS. WILL A CREAM SEPARATOR PAY?

Are there drinking bowls for cows on the market, which can be connected to one-inch piping? I saw them in Germany, they had drop covers to keep straw or hay out. The cows seemed to know right away to lift covers with their nose. I saw your answer to a question some time ago, but therein you did not state where they could be bought. I also would like to hear your opinion about a cream separator on the farm. Would it pay to buy one where a good creamery is near, about two miles, and neighbors to make up a good creamery route? In other words, would we make enough more with a separator, over the other way, to pay for the extra work involved at night and morning?

Shiawassee Co.

J. V. A.

There are two or three different firms that manufacture drinking bowls like those described by J. V. You will find them advertised in all special dairy papers and in many of the general purpose farm papers, at certain times of the year. I have such bowls in my own cow stable and am pretty well pleased with them. You have a small tank at the end of the stable and then put all the bowls on a level with this tank and it only takes one float valve to gauge the water in all of the different bowls which are connected by inch pipe. Each one of the bowls has a cover that drops down and keeps the straw and dirt out of the bowl. The cow readily lifts this up with her nose when she wants to drink.

Of course, it is a little work to turn a separator by hand and separate milk, and many people who have cream separators have a small gasoline engine to run them with, but they can be turned by hand. There is some compensation, however, for the extra work in running

the separator. You don't have to haul the milk to the factory and back every day. The cream can be sent to the factory every other day, or three times a week, and only a small amount of it has to go. This amounts to considerable when the roads are real bad. Then again, there are no milk cans covered with sour milk and buttermilk to wash. Besides, this the warm skim-milk from the separator is the best food for the calves and young pigs. Of course, when you send the whole milk to the creamery it is separated and the skim-milk brought back. In cold weather this is usually sweet when it gets back but in the summer time it is usually sour. The young calves and pigs don't like the sour skim-milk as well as they do the sweet skim-milk. I don't know but what it is just as good for them after they get used to it, but it is a hard matter to keep them drinking sour milk. They don't like it. This factory skim-milk is likely to be contaminated with milk from tubercular cattle on other farms, thus endangering your stock by that method. There is, therefore, a good argument for the use of the separator on the farm.

On the other hand, there is an argument in favor of sending the whole milk. The trouble is, when we use the separator on the farm we are not particular in sending the cream regularly. Many times we put it off until the cream is in poor condition, and consequently the creamery is not able to make first-class butter out of it, and when it goes to market they don't get as good a price for it. When you send the whole milk that has to be sent every day and it is always received in good condition and the creamery can make on the average a much better product. But if we will take good care of our cream, keep it cool and sweet, and deliver it to the factory sweet, then a good product can be made from gathered cream. One has to decide this question for himself. Where a milk hauler goes by the door and all one has to do is to milk the cows and set the cans of milk out on the platform it certainly simplifies matters a good deal. Nevertheless, even here the producer must ultimately pay for the additional expense of carrying the skim-milk to the factory and returning it; and if one has to draw his own milk to the factory then it makes considerable difference. Of course, where you send the cream it doesn't cost as much to haul it as it does the whole milk.

POTATOES FOR MILCH COWS.

Will you please tell me whether potatoes can be fed to cows giving milk, to any profit or not?

Berrien Co.

J. G. F.

Potatoes are just as good a feed for milch cows, and even better than mangel wurzel beets. They are about on a par with any kind of roots. The chemical analysis of potatoes is as follows: 1.1 per cent of digestible crude protein; 15.7 of digestible carbohydrates; 0.1 per cent of digestible fat. Now mangel wurzel beets contain only 1.0 per cent of digestible protein, 5.5 per cent of digestible carbohydrates, and 0.2 per cent of digestible fat, consequently according to the chemical analysis the potatoes would be worth more than mangel wurzel beets, and I don't see any reason why they are not. Of course, potatoes are usually worth more for human food than they are fed to cows, but in a year when potatoes are exceedingly cheap, many times large quantities of potatoes are fed to milch cows.

One mistake people make in feeding them is that they feed too many. Potatoes are cheap and they want to get rid of them and they feed the cow more than she ought to have. The cow ought not to have over a peck of potatoes at a feed. This amount might be fed perhaps twice a day after the cow gets accustomed to eating them, but if fed in rather moderate quantities they are appetizing, and have a succulency which assists in the digestion of the dry matter in the ration, and in every respect they are just as valuable as mangel wurzel beets.

There is some little danger, of course, in cows choking on potatoes unless the cows are tied in separate stalls. For instance, if a man would go into a pasture field and throw down a basket of potatoes and the cows would all run up and grab them, they would probably undertake to swallow the potatoes before they were chewed, but in the stable, where each cow is in a stall by herself and no other cow can molest her, there is very little danger in choking. It might be safer, however, to cut them in two with a spade before they were fed.

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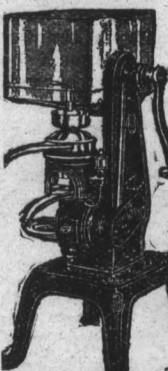
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COW BARN CONSTRUCTION QUESTIONS.

We would like some questions answered on barn construction and wish you would kindly submit to your readers who have built up-to-date barns and greatly oblige us. First, should cows face a center alley? 2nd, what is the proper width for a barn with a double row of cows? 3rd, if cows face the wall is it best to have the center alley wide enough to drive through with a spreader or is a carrier system more desirable? 4th, is a gutter back of the cows necessary? The writer would have the alley enough lower to do away with a gutter and would like to know what objection there would be to this plan? 5th, is a stable under the barn or a one-story stable attached to the barn, most desirable? 6th, is there any material on the market that can be incorporated in the concrete to form a platform for the cows to stand on which will do away with the objection to the cows lying on the bare concrete? 7th, in providing a barn for 50 cows is it desirable to have calf and bull pens or should these be in a separate barn? 8th, is a bucket system in the barn desirable or should the cows be turned out for water each day?

Menominee Co.

N. B.

I will give my opinion with regard to these various questions about cow barn construction in the order in which they occur in N. Bros.' letter.

First.—I do not think it best for cows to face a central alley. I would prefer to have them stand in two rows in the cow stable but have them face the outside. My reason is this: It is much cheaper to handle the manure from the cow stable if the cows face the outside and have an alley between the cows so that you can drive through with the manure spreader. This is an easy way to handle the manure. Then again, I do not like the idea of the cows breathing into each other's faces. I think it is a good way of communicating disease, especially tuberculosis. If the cows stand facing the outside and you have the King system of ventilation, the pure air intakes are just in front of the cows and they get the fresh pure air as it first enters the stable. Another reason for having the cows face the outside is that the hay chute above can be on the outside of the barn and out of the way. If your feeding alley is in the center of the barn then your feeding chute would be in the center of the barn and it is in the way in the storage part of the barn above.

Second.—The proper width of the cow stable for two rows of cows is 36 feet. This gives a broad alleyway between the cows and a feeding manger in front of the cows four feet wide. This is wide enough so that one can pass through with an ensilage car and it is plenty wide enough for feeding hay. There is no objection to having a cow stable 38 feet or 40 feet wide if you want it so, but it isn't necessary. You could have it more than 36 feet wide and then increase the width of your alleys accordingly. You could have your broad alley between the two rows of cows a little bit wider, and it would do no particular harm. It might be better to state that 36 feet is the minimum width to give a satisfactory amount of room.

Third.—If the cows face the outside a good plan where one's system of farming will permit, is to have the alley between the two rows of cows wide enough so that you can drive through with a manure spreader or manure truck and put the manure directly into these receptacles and draw it out to the field. In this way you only have to handle the manure once. The other way, if you have a litter carrier, the litter carrier is loaded and pushed out of the barn and dropped into the manure truck or manure spreader. It perhaps saves a little time to load it direct, and especially where one has sufficient manure at each cleaning to make a load worth getting the horses ready and taking the manure to the field.

Fourth.—A gutter back of the cows is necessary if you keep the cows in stanchions. If you have the model cow stall a gutter is not a necessary part of the equipment. There is no particular objection to having this passageway lower and have the cows stand on a platform except that the platform cannot be kept as clean. It is more liable to be wet with the liquid manure. Some people have this driveway gradually rounded or sloped off into the gutter and don't have a square-edged gutter. In other words, the driving alley between the two rows of cows is shaped like a well constructed road, rounding off to the gutter. There is no objection to this whatever. On the other hand, I can see no objection to the gutter. The cows will stand on a platform in order to keep themselves clean. Now it doesn't make

any difference whether there is a ditch behind them or whether the whole driveway drops, the advantage would seem to be the same.

Fifth.—I think that a cow stable under the storage part of the barn, that is, to have the cow stable in basement or first floor of the barn and the storage part above, is preferable to having the cow stable separate and distinct, largely on account of the cost of doing chores. I am aware that some people will argue that it is more sanitary to have the stable away from the storage part of the barn. Then the hay is brought in as needed. On the other hand, it is much easier to throw the hay down from above into the feeding alleys. The ceiling should be tight, or the floor of the barn above the cows should be double-boarded. It is better, of course, to have the cow stable sealed besides. Now when this is done there is no chance for any of the foul odors of the cow stable going up so that it in any way injures the fodder above. This is certainly true where a King system of ventilation is properly established. There are very little bad odors in the cow stable with this system in proper working order. Another important consideration is that it costs considerable more to build a stable separate from the storage part of the barn, and I do not believe it is necessary. One can have just as sanitary a stable and have the storage part of the barn directly above as he can to have it separate. By putting in windows on all sides of it you can have it well lighted and you can ventilate it just exactly as well, while the first cost of building is considerably less and then the cost of doing the chores afterwards is much reduced by having the two combined.

Sixth.—There is nothing that I know of that could be mixed with the cement and not injure its wearing power that would take away the qualities that are claimed to injure the cows that stand and lie on a cement floor. Personally I don't believe it injures them because there are thousands and thousands of cows that have nothing but a cement floor to lie on and they do well and are perfectly healthy, no harm seemingly comes from it. If you could use a model cow stall then the cow has a bed about four inches deep to lie on and she doesn't come in contact with the cement floor at all.

Seventh.—I don't think that bull stalls ought to be in the cow barn. I think the bull pen ought to be outside of the barn and to be in connection with a fairly good-sized yard. I don't think that bulls ought to be confined in stanchions and tied by the nose. I would have it so that they would have a good shelter and would have no door to this shelter or stable, but let them run in and out as they chose. Good strong stanchions can be made in this bull pen or bull barn or whatever you choose to call it, so that you can fasten them when you desire, but ordinarily I would let them run in and out as they wished. There is no objection to having calf pens in the same barn if you have room enough, but with a herd of 50 cows I would prefer if possible, to have a separate barn for the calves, and I would have this made into small box stalls so each calf could be in a pen by itself and not have to be tied up.

Eighth.—I think that the bucket system of watering cows is desirable. I realize that there is some objection to it, but taking everything into consideration I believe that it is advisable to have it in the barn. I don't believe that it is the best thing to be compelled to turn the cows out to drink in all kinds of weather. Most of the time it would be all right, but there are days, and sometimes several days at a time, when cows giving milk ought not to be out doors. One is not prevented from bringing the cows out of doors for exercise in suitable weather because he has a watering device in the stable, but by having this system he is not forced to turn the cows out when the weather is not suitable.

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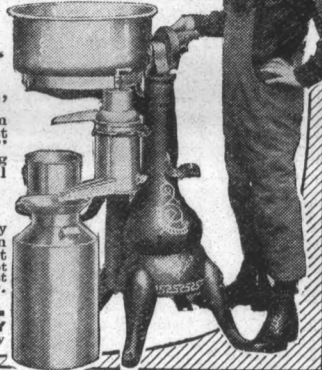
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Keen Kutter quality is backed by the Keen Kutter trade mark and that is your lasting guarantee of absolute satisfaction or money back.

"The Recollection of Quality Remains
Long After the Price is Forgotten."
Trade Mark Registered. —E. C. SIMMONS.

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SIMMONS HARDWARE CO., Inc.
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Lawn Mower
No. KNDH16
Price \$11.50

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No. K
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Save Your Thresh Bill

IT'S UP TO YOU to say what thresher will thresh your grain this season. It's your grain. You worked hard to grow and harvest it. You pay your thresh bill. You cannot afford to hire an outfit that will waste your grain. You have worked hard for a profit and you should have it. You cannot afford to divide it with the straw pile. Your good business judgment tells you so.

Every bushel that goes into your straw pile is money right out of your pocket. You can save the amount of your thresh bill by hiring a

Red River Special

to do your threshing. It will save more grain for you. It will waste less of your time. It will do your job quicker. It will clean your grain better. It will pay you. It is the only thresher made which uses the only true and sure method of separation. It beats the grain out of the straw just like you would do with a pitchfork.

The Big Cylinder, the "Man Behind the Gun," the patented Grate and Check Plate and the Shakers which toss the straw up and beat it like you do with a pitchfork, save all the grain for you, whether it be wheat, oats, rye, barley, peas, rice, alfalfa, timothy, or any other grass seed.

J. J. Porter and nine other farmers of Geneseo, Kas., Wm. Bronner and four other farmers of Andover, S. Dak., A. J. Weber and twelve other farmers of Crawford, Texas, say: "The Red River Special does the best work in grain saving and we want no other."

Have your threshing done this year with a RED RIVER SPECIAL.
It will save your thresh bill. Write for proof.

Nichols & Shepard Co., Battle Creek, Mich.

Builders of Threshing Machinery, Engines and Oil-Gas Tractors

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HOW TO GROW IT ON YOUR LAND

"Alfalfa—Wonder Crop," is the title of a new book just issued by us. It contains a fund of priceless information on alfalfa growing secured from many sources; United States Government, State Experiment Stations, the best posted authorities and successful growers. This information was secured at a great cost of time, money and research, and yet it is yours for the asking without cost. This book will convince you that your farm has some land on which you can grow alfalfa; it tells how to get results from the first planting, how to select the field and prepare the soil, including fertilizing, plowing, liming, and how to prepare the seed; when to plant, how to plant. It tells you what to do during the growing period, how to get bigger than average crops, and how to cut and cure. This book is worth many dollars to the farmer interested in growing alfalfa, but we gladly send it without cost or obligation of any kind if you answer at once. Don't put it off—write for free book today.

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Let this new seed potato be your profit getter;

The Northern Russett,

unequaled for the main crop, late keeper, fine flavor, heavy yielder, having a smooth russett skin. The best seed potato on the market, grown on virgin soil adjacent to the Straits of Mackinac, producing strong vigorous potatoes, that have firm crisp flesh.

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WING SEED CO., Box 142 Mechanicsburg, Ohio.

SEED CORN—A trio of Reg. Delaine Sheep to the exhibitor of best ten ears of Jackson Co. White-Cap at next annual corn show. D. E. TURNER, Mosherville, Michigan.

Vegetable and Flower Plants in variety for gardeners and others. All transplanted and well grown. Price list free. E. J. SHEAP & CO., Plant Growers, Jackson, Mich.

Fertilizing the Garden.

We Americans are beginning to give more attention to the garden—a fact largely due to our increasing population, which makes this adjunct to the farm and to the city lot of greater commercial importance and more substantial satisfaction than it was in the earlier days of our history. Because of this larger attention which the garden is receiving more questions are being asked on how to handle the garden soil, and chief among these is the interrogation, "how shall we fertilize the garden?"

The object to be accomplished is a twofold one. In the first place, plant food must be added and then the soil needs to be put in condition to deliver this and other food already there, to the root system of the crops. In other words, the object is to bring chemicals together into the great laboratory of the soil where they are properly prepared and made in dilute solutions for the plants to assimilate. Both of these aims are important.

The most economic way of securing this double purpose lies in a combination of organic and chemical materials in the soil. By organic materials is meant barnyard manure, old sods, leaf mold, green manure, etc., and by chemical materials is understood the commercial fertilizers of commerce. Students are now generally recognizing the fact that the largest crop returns are obtained from these commercial fertilizers when the soils are supplied with a considerable quantity of organic matter or humus. The fermentation of this organic material stimulates chemical activity thereby hastening the preparation of the foods furnished by the chemical fertilizers, for the plants. Instances have been related where practically no effect was noted from the addition of the commercial materials to the soil, because, as it was believed, of the scarcity of organic matter. It would seem, therefore, that for the garden, especially where intensive methods are practiced, we should add both organic and chemical substances for building up and maintaining the soil.

Sources of Vegetable Matter.

There are a number of ways in which vegetable matter may be added to our garden soils and the one to employ is the one that local conditions make the most economical. Barnyard manure is, of course, the common source of humus, and none of this material should be allowed to go to waste. Because of the conditions under which garden plants grow, however, the manure ought to be composted before it is put on the soil. Another source of vegetable matter is leaf mold. This may be gathered from the woods or parks and composted alone or with manure. Old sods may be piled up and allowed to decay, and when so handled furnish a valuable supply of humus. Another way and one that is gradually growing more popular, and that promises in the future to be among the most common sources of humus supply, is the plan of growing green crops and then turning them under to incorporate the vegetable fibre with the earth. Some one or all of these methods are available to every gardener and should be given careful consideration when outlining a program for fertilizing the garden patch.

Sources of Commercial Fertilizer.

There are three elements that should be kept in mind when selecting the commercial fertilizers: These elements are nitrogen, phosphoric acid and potash. Where large amounts of vegetable matter are added, a fourth chemical should also be included and that is lime.

While in field operations we can depend, to a very large degree, upon leguminous crops for the addition of nitrogen to our soils, in the garden we must rely more upon the foreign materials added. The most common commercial source of nitrogen is in nitrate of soda which material can be added to the garden at the rate of 200 to 300 pounds per acre, preferably applying it in about three applications at intervals of from three to six weeks, the first application being made just previous to planting the seeds. Other sources of this element are dried blood and tankage.

Potash is needed in more liberal quantities on the garden than for field crops since it is required in the formation of leaves, for which many of our garden crops are grown. Probably the best form in which the element is obtained is muriate of potash, which is usually applied at the rate of from 200 to 300 pounds per acre. Sulphate of potash may also be used, and where wood is burned the

ashes from the stoves or furnaces make a cheap yet splendid form of this element for fertilizing.

The third constituent, phosphoric acid, is supplied in phosphoric rock and various forms of bone preparations. These materials may be applied at the rate of about 200 to 400 pounds per acre.

Mixed Fertilizers.

On the market there are a number of mixed fertilizers, especially prepared for garden purposes, and since the enactment of laws providing for the inspection of fertilizers and their strict enforcement by those having that duty to perform the general public is protected against sale of worthless mixtures and can buy such preparations safely. Where one has a small garden especially, it is more convenient to use the mixed fertilizers. From the analyses on the packages in which these mixtures are delivered one can determine the quantity of the different elements added to his soil through their use.

A Specific Example.

Here is how one might proceed to fertilize a quarter acre of ordinary garden soil where decomposed barnyard manure, nitrate of soda, and a mixed fertilizer are available. Six loads of the manure are spread over the soil and turned under. Then 300 pounds of a mixed fertilizer analyzing about four per cent nitrogen, eight per cent phosphoric acid and 10 per cent potash are broadcasted on the soil and thoroughly harrowed in. Then 35 pounds of nitrate of soda are sown on the soil just before the seeds or plants go in, another application from four to six weeks later and perhaps a third around the middle of July, the second and third applications being drilled along the rows of plants and not broadcasted as the mineral should not come in contact with the plants.

It may become necessary to overcome the acid condition resulting from the decomposition of the organic material in the soil. This the gardener may do by the addition of lime, which material combining with the acids forms salts that are neutral in their effect upon the plants. Not only does the lime do this, but it has a tendency to make a clay soil more porous, and, on the other hand, to cement together sandy soils, ends which work to the improvement of both types.

By combining the two methods of soil enrichment here mentioned, we believe that the highest satisfaction will be secured from the farm garden, since soil so improved will not only grow the largest amounts of garden crops, but will be a large factor in producing these of the highest quality. With garden crops continuous, rapid growth is essential, and this will be accomplished only when the land is in such mechanical condition as to hold a sufficient amount of moisture and such an abundance of plant food elements as to amply supply every need of the growing crops throughout their developing period.

SPRING STRAWBERRY NOTES.

March 18, the melting of the snow had progressed sufficiently to permit us to examine our strawberry plants. Of course, we knew they were all right, nevertheless, it was impossible to resist the impulse to go over to the bed and have a look at them. They were found to be in as nice a condition as when the mulch was applied last November. The snow had melted from about half the beds, that portion the least protected by the woods. The fall of snow was exceptionally light the past winter, and the length of the season of snow was short. In the sheltered place occupied by the plants, the ground has at no time been bare of snow, since last December, when it came for good, but the accumulation was small; the ground is frozen underneath, a condition unprecedented in this location. It is not probable that the plants have suffered any injury, however, under their covering of straw and leaves, which was applied in view of just such an emergency, as well as to prevent the greater injury of "sugar weather." The leaves of the plants still have that same green freshness of the late autumn, and this freshness and vigor will be retained till these old leaves have been replaced by a new growth; but from this time till settled weather comes and freezing of the soil ceases, unprotected strawberry plants will be growing less and less vigorous, and by the time the growth is renewed only a small portion of their former vigor will remain.

M. N. EDGERTON.

SELECTING VARIETIES OF STRAWBERRIES.

The strawberry is quite susceptible to soil conditions. A variety will be a great success in one kind of soil and apparently be a failure in another.

The short time in which we can get seedlings to bear and give us results makes the introduction of new varieties almost as frequent as the debut of future society belles during the social season.

These two things make it hard for the grower of strawberries to keep up to date on the matter of varieties. We have no means of knowing whether a new variety which deserves all of the high praise its originator and introducer gives it, will be a success on our place until we try it. On account of the susceptibility of varieties to soil conditions, equally good growers of strawberries will disagree as to which of the standard varieties are the best. So it is hard for one who is conscientious in the matter to give advice along this line.

We have found, however, that varieties may be classified into three types according to the character of the growth. These types each have their soil preferences.

For the lighter strawberry soils nothing will do better than those varieties which belong to the class of which the Uncle Jim or Dornan is typical. While varieties of this type do well on the moderately heavy soils there are none that will do as well on the light soils as they will. Varieties of this class have a large glossy leaf which is quite wrinkly and is of a mottled green color. The berry is of irregular wedge-like shape and often furrowed. It is generally soft and of a rather mild flavor. The plants are good runner makers.

For the good loamy normal strawberry soil nothing will do better than the berries which belong to the class of which the Senator, Dunlap is the leader. Varieties of this class do well on a larger range of soils than any others, and therefore our most popular varieties are in this class. However, on the light soils the berries will run small and on the heavier the plants will go to runners considerably unless care is taken to keep them cut back. These varieties generally have a medium size, of good color and flavor. The plants are productive. The old standard Warfield also belongs to this class as does also the newer variety called the Buster.

For the richer and heavier soils we have the class to which most all of our fancy varieties belong. They produce large plants of dark glossy foliage. The plants are poor runner makers. The heavy soil will help them overcome this difficulty to an extent. The berries are large, of handsome appearance and of good quality.

We will find varieties which will be hard to classify. For such and to determine accurately what varieties do well on the soil on which the commercial patch is to be set a trial bed is of great help. This should, of course, be on a soil similar to the one which the large patch is to be. Twenty-five to 50 plants of each kind to be tried out is all that is necessary for such a patch. As new varieties appear they can be bought in small quantities and tried out. If they do well enough plants for setting in the large patch to make a good start can be dug from the trial patch. In this way an economical start can be made in new varieties which are always high-priced.

Van Buren Co. F. A. WILKEN.

ABOUT THE SPRAY NOZZLE.

Each year fruit growers are acquiring a little more knowledge on what the requirements of a good spray nozzle and its appurtenances should be. The nozzle should give a fine, well-distributed spray for most of the work but, for example, after the blossoms are fallen and we wish to drive the spray solution into the calyx end of the fruit, a coarser spray is necessary. To fit this dual purpose variable nozzles are most desirable. They can be changed quickly to meet the need, enabling one to cover the lower branches with a mist spray and then to change to a coarse spray that will reach tall branches. A nozzle will do its best work when the solution is forced through at about 200 lbs. pressure. Spray rods from four to eight feet long are becoming popular, the longer ones are being abandoned by the most careful men. It has been learned that the average man will get as close to his work with the shorter rod as he will with the longer one and do it easier.

The Rough-Road Car

By R. E. Olds, Designer

After 26 years of experience, I tell you a car for the average road ought to be built like this.

Overcapacity

The builder must know the needed strength. Then he must add at least 50 per cent, as we do in this Reo the Fifth.

He must know his steel—have it made to his formula. Then analyze it twice to make sure of it.

He can't test gears with a hammer. He must, as we do, use a crushing machine of 50 tons' capacity.

Not Enough

Tires are expensive. But over-size tires are essential to low upkeep. We use 34x4.

Roller bearings cost five times as much as common ball bearings cost. But the right car must have them. In Reo the Fifth we use 15, eleven of which are Timkens.

Drop forgings are costly, but we

use 190 to avoid the risk of flaws. We use a \$75 magneto, big brakes and springs, a doubly heated carburetor, a centrifugal pump. And not an engine goes out until 48 hours have been spent in five radical tests.

Reo the Fifth, without these extremes, would cost in the building \$200 less. But in the next five years repairs and upkeep would cost you several times that much.

I Know

These are things I know. I have learned them from tens of thousands of cars in my 26 years of car building.

These extra precautions cost this concern two million dollars per year. We are not spending that without knowing the need of them.

We save by efficiency—by building all our own parts. We save 20 per cent by building only one model. Then we spend all those savings on hidden parts. To give you a car which, year after year, will serve you as well as when new.

Look below the frills when you buy a car. All modern cars are attractive. Find out what the maker hides.

A one-summer car is built very differently from a car that is built for keeps. If you want an honest car—a car that endures—watch these inner features.

New Control

Reo the Fifth has our new control. All the gear shifting is done with one center rod, entirely out of the way. It is done by moving this rod only three inches in each of four directions.

There are no levers to clog the way of the driver. Both brakes are operated by foot pedals. And this car, like all the leading cars, has the left side drive.

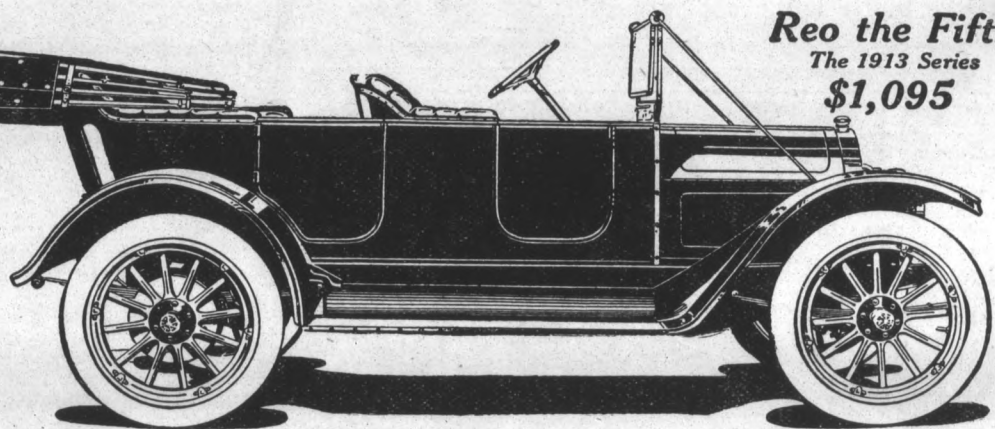
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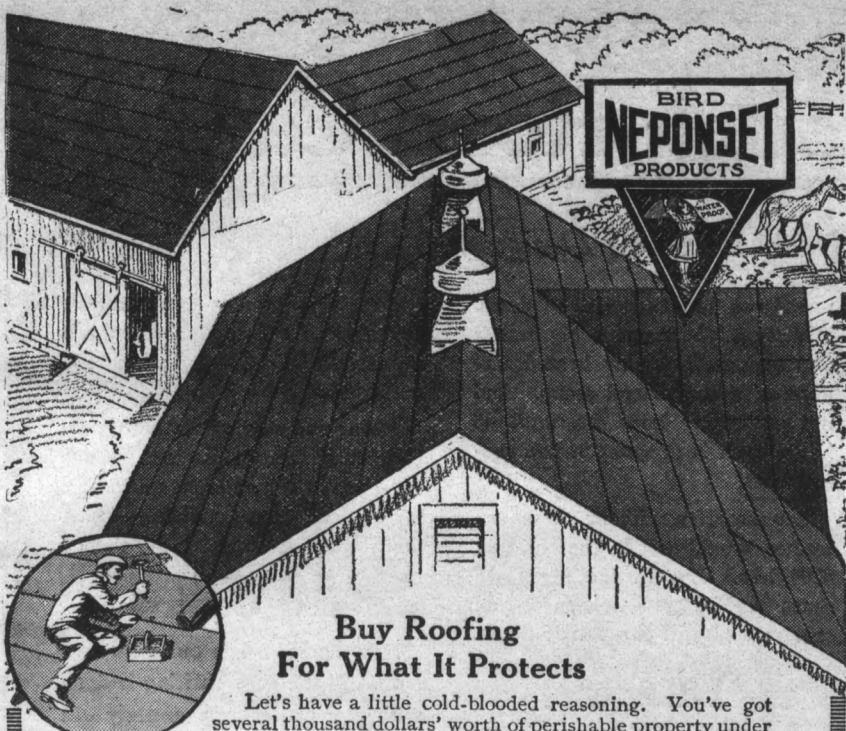
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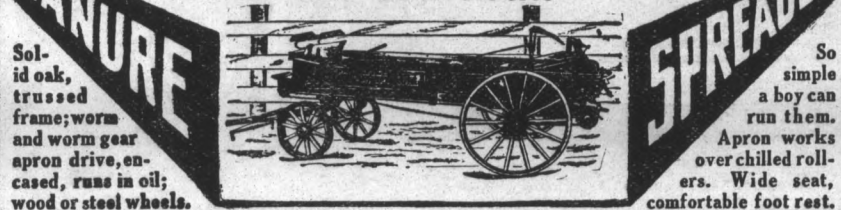
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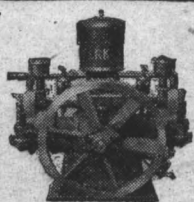
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CATALOGS FREE
AGENTS WANTED
Perkins Wind Mill &
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Essential Factors in the Breeding Herd.

TWO classes of men are making money from herds of registered breeding swine. One, the men who are gifted with the natural ability to select breeding stock and look after every detail that will add to the welfare of the animals—the other, the men with the determination to study and labor until they acquire knowledge and understanding of the business.

How to secure and control excellent types is a problem. Many of the best herds, created by genius, have passed into oblivion through the inability of their owners to hold them up to the high standard that had been attained. When the herd approaches perfection the greatest care and skill are required, for having reached this point there is always a tendency to degenerate. Many of the most skillful breeders of swine have been deceived by certain crosses, and it requires study and observation to detect any error in time to prevent its extending. Whether this tendency is due to the attainment of the breeder's ideal and then a relapse, or to the exhaustion of the animal due to inadequate feeding, bad breeding or unfavorable environment is an intricate question.

High Ideals Essential.

During the past three years it has been my privilege to visit a number of the leading breeders of swine and to make a study of the blood lines of the best animals. In discussing the various phases of breeding with these men I find that they all have high ideals in their minds of animals superior to ones that they now have in their herds. The men who are the most successful are the ones who have the highest ideals of animal form which they are trying to produce in their matings. Without such an ideal they could not have made progress. The ideal comes before the real. The plan of building is in the builder's mind and drawn out on paper before the building is commenced. The man is always greater than any of his works, and he must have clearly defined in his mind the thing to do before he can work to any good purpose. If a breeder does not have in his mind what an ideal animal is, he will secure it only by accident. It requires thought and study to bring about the desired results in breeding. Coupled with all this, there must be a natural love for the work, for unless a man has a natural love for the helpless creatures which an all-wise Providence has placed under his care, no matter how perfect they may appear, he regards them as merely a commodity to be re-produced or bought and sold in the open market.

The Importance of Good Sires.

High-class breeding boars are essential in building up a herd of registered swine. Much of the success attained by many breeders can be traced directly to some famous sire. One of the most famous breeders of Berkshire swine living today is known by the animals which he has bred and shown from one great breeding boar. The boar himself was famous as a show animal and his pigs and descendants have been prominent in every leading show on this side of the Atlantic for the past twenty years or more. If a breeding boar is found that meets the requirements for mating with the sows in his herd he should be retained as long as his pigs are desirable.

Small Breeders Should Buy Tried Sires.

Men with small herds must work to a disadvantage because they are compelled to buy fresh blood more frequently than those who are carrying on two or more lines of breeding and who have the necessary number of breeding animals required to neutralize fresh blood before it is introduced into certain families of the herd. Such men would obtain surer results by buying some boar that had been used in another herd until he had proven his ability to produce the right type of pigs when mated with good sows. In this way a man is able to see from a boar's offspring what kind of a breeder he is and to judge accordingly whether he is a desirable animal to use in his own herd. The practice of buying untried sires and placing them at the head of a herd of a few sows cannot be too strongly condemned.

Rigid Selection of Sows Necessary.

A rigid system of selection should be practiced among the sows. Many sows are unfitted, either from lack of size, from faulty conformation or from lack of vigor and constitution to be retained for breeding purposes. The selection ought to be enforced with equal rigidity, either

in selecting sows from within the herd for breeders or buying them from other breeders. Inferior sows constantly pull down the average of the herd. The herd can not be built up to a high standard unless none but the best animals are kept for breeders. It is a mistake to try and build up the herd in number and sacrifice quality. Real progress begins when every animal that is to be retained for breeding purposes is required to pass a critical examination.

Good Feeding as Important as Good Breeding.

Good feeding is necessary to insure success with a herd of pure-bred swine. Heredity is a peculiar force. We can use it to do some things, we can head it off to prevent it doing other things we do not want, and frequently it does things that no one can account for. Much that appeals to the eye is caused by what goes in at the mouth. Good breeders who have made a success are good feeders. Feed is not all for there are many hogs that would not make desirable breeding animals under any system of feeding. It is the writer's opinion that food has been fully as important as blood in the development of the best herds of swine. Unless a young animal is well cared for and properly fed its good qualities are never developed. Unless the animals are properly developed, systematic selection is almost impossible.

Housing and Exercise.

Sunshine and outdoor exercise are the indispensable rights of animals of all kinds. Poorly ventilated hog houses and lack of exercise soon result in sickly, weak constitutioned breeding animals. Pigs should be allowed to rustle some so that they may develop stamina and trait of character. But this does not mean to compel them to endure exposure and neglect. It is better to avoid extremes in either direction. Good warm houses and plenty of exercise when the weather is favorable are what is needed to build up that superb vigor so characteristic of the best class of breeding swine. Success and fame are reached only through breeding a class of animals that possess individual merit which differentiates them from the great mass of animals of the breed to which they belong.

New York.

W. MILTON KELLY.

FEEDERS' PROBLEMS.

Grain Ration for Fattening Ewes on Pasture.

What grain or grains would you advise our feeding to finish ewes on blue grass pasture? These ewes lambed in January and February, will wean their lambs by the middle of May on dry feed, and will be turned on blue grass pasture about that time. We expect to shear them on pasture about the first of June, and then we expect to feed them grain, we had thought once a day, probably in the evening. These are western ewes and weigh from 80 to 90 lbs. What grain would you feed? How much to a feeding? Would you advise once a day and in the evening? We have but a very little corn, and are offered cull beans at very attractive prices (\$15 per ton). We have on hand a quantity of Old Process oil meal that cost us \$31 per ton. This matter is of considerable importance to us as we are thinking of finishing some 1,200 ewes in this manner. What ration of beans would you advise feeding dry ewes, same kind and weight as above, together with clover hay and corn silage containing a goodly quantity of corn? We have some oats, bran and oil meal that we might work in with this feed. We wish to finish a car load of these dry ewes at once for the market.

Osceola Co.

E. M. P.

Under present economic conditions it will doubtless pay to feed these ewes a grain ration on blue grass pasture, since grain is now comparatively cheap. Experiments have determined that the cost of gain in sheep is about 47 per cent greater than for lambs and as the price of the finished product is also lower it will not pay to put as much high-priced grain feed into finishing this class of mutton as is the case where feeding lambs. It would be better to keep these ewes on dry feed after the lambs are weaned until their milk flow has been dried up before turning them to pasture. The grain ration which should be fed should be lessened at that time and gradually increased on the pasture, say from about one-quarter of a pound of grain per day to about three-quarters of a pound per head per day, or possibly a little more at the finish of the feeding season if a good finish is desired, although if the blue grass pasture is plentiful it will be more economical to lengthen the feeding period and secure a great-

er proportion of the gain from this nutritious feed.

As to the kind of grain to feed, the cheapest grain which will give the desired results is, of course, the best. The writer's experience, however, does not favor an exclusive ration of cull beans for sheep on pasture. In one case where a rather poor quality of cull beans were fed at the rate of about one-half pound per day per head, to sheep of about the size mentioned in this inquiry, rather frequent attacks of stretches were noted among individuals in the flock, as is quite apt to be the case when badly cured grain or even forage is fed to sheep. With a better quality of cull beans this difficulty might not be encountered, but even at \$15 per ton for beans it is the writer's opinion that it would be profitable to mix them with at least an equal amount of corn, since at present prices the corn should not exceed \$20 per ton delivered at Michigan points.

So far as the protein feeds mentioned are concerned, such as oil meal and bran, it would not be economical to use these feeds for feeding sheep of this age on pasture, for the reason that less protein is required in the ration for sheep of this age than is the case with lambs. These sheep have already gotten their growth, frame and muscle, and the gains must be largely made up of fat added to the carcass, hence it is not necessary to feed for muscle and bone development as is the case with growing lambs, and a ration much wider in its nutritive ratio can be profitably used.

As to the number of feeds of grain per day, if it is desired to finish them on the minimum amount of grain, one feeding per day would probably be the most profitable when the labor of feeding is considered. If more grain than the amount suggested is fed, however, it would probably be better to divide it into two feeds.

In compounding the grain ration for ewes of this class when being fed a roughage ration of corn silage and clover hay, a larger percentage of cull beans could be safely used, and by way of variety some of the oats which are mentioned as available might profitably be mixed with the beans, but for the reasons above mentioned it is questionable whether it would be profitable to add bran and oil meal to this ration, with the clover hay and beans, which contain sufficient protein to make a sufficiently well balanced ration for the fattening of this class of sheep.

Causes of Abortion in Ewes.

Can you tell me what is the cause of ewes losing their lambs before time? Is it the feed? I am feeding bean pods and corn in the bundle. The corn was soft so I did not husk it, but fed it all together. Some of it molded a little in the stack. What should I feed with bean pods to make a balanced ration? My sheep are in good flesh.

D. W. P.

Abortion in ewes may be caused by moldy feed, and in this case the moldy corn may have been the exciting cause. Also, some breeders have had trouble with weak lambs from feeding an excessive amount of bean pods in the ration, although we have never heard of abortion resulting from this cause. A far more fruitful cause of abortion is to be found in improperly arranged stables. Where the sheep are obliged to jump over a high sill in getting in and out of the stable, or where the door into the stable is a narrow one, so that the ewes are crowded against the sides in the rush to get through it, abortion may become quite general in the flock from these causes. In this case it would be wise to discontinue feeding the moldy corn and substitute some oats for grain if available, or a mixture of corn and bran, which will make a very suitable ration with bean pods and hay or good corn fodder for roughage.

The Cheapest Grain Ration for Horses.

Kindly advise me as to the most economical horse feed to purchase this spring to feed with mixed hay as roughage. Also how to keep ground feed in ton lots. I have lost some every year from mold or heating and am afraid to purchase in quantities.

N. S. P.

At present prices for corn and oats it is doubtful if one can compound an efficient ration more cheaply than by the mixing of these grains with the addition of a small amount of oil meal to feed in connection with mixed hay.

Where one has trouble with ground feed heating, this difficulty will be obviated by putting it in a large bin or spreading it over the floor where there will not be so great a bulk of it together, and stirring it over with a shovel should indications of heating be found.

MAKING PORK CHEAPLY.

(Continued from first page).

that has the sweet flavor that gratifies the taste.

As to the profits, we have reason to believe that there never has been a time before when the margins of profits from feeding were as large as at the present time. At the present market prices for feeds, and the prevailing prices for hogs, if good judgment is used in feeding, it is safe to calculate on a 100 per cent profit on the outlay for feeds. It is worth the while to give the pigs a good deal of consideration, and bestow upon them all the attention and care that will be necessary to secure the best results from them.

Wayne Co.

N. A. CLAPP.

LIVE STOCK NEWS.

The Cloverland Cattle Congress was recently organized at Marquette, with the following officers: President, A. T. Roberts; secretary, John D. Mangum; treasurer, B. W. Wright. Vice-presidents from each of the counties of the upper peninsula will be chosen later. The congress will hold its first exhibition in conjunction with the county fair in Marquette, Sept. 2-5, and if successful will continue its shows in different counties. Prizes will be offered to exhibitors from all sections. The congress is one of the first movements to be launched in accordance with a resolution adopted by the Upper Peninsula Development Bureau, the purpose of which is to encourage the holding of cattle shows in connection with county fairs.

The third annual horse show held at St. Louis, Mich., under the direction of Dr. D. T. Kemp, Roy Caywood and John Stewart, was a success, the display proving that Gratiot county has many fine animals. Percherons were exhibited by the following owners: Roy Caywood, Oscar Wolf, Vern Colburn, George Boyer, George Cummings, Orlo Simmons, George Brown, Stephen Fairbanks and Frank Bodfish. The Clydesdale owners were: S. E. Gould and Mr. Davidson. Belgian horses were shown by Willis Smock, Oscar Wolf, Frank Frisbie and Robert Soval. About 30 fine carriage horses were also displayed. The parade started at 1:30 p. m. and was led by the city band. All the horses were gaily decorated and made a fine showing.

The situation in the cattle markets of the country is so mixed that many stockmen are in doubt as to what course to pursue in regard to preparing cattle for the future market, and many farmers have thus far failed to refill their feed lots. Others have purchased more or less freely, but a majority have not secured nearly as many cattle for fattening as in former years, this being due in great part to the lack of anything like normal offerings in the Chicago and Missouri river markets. It could hardly be expected that at such a time as this, when finished beef cattle are bringing unprecedentedly high prices and feed of all kinds is unusually plentiful and cheap, the average farmer would care to sell off his stock only partly finished, and the only strange thing is that there are as many stockers and feeders offered as there have been. And when there are any heavy feeders of decent quality on the market the chances are strong that the packers will pursue their usual policy of securing them by outbidding country buyers. Looking at the whole matter from the standpoint of the average farmer, who has plenty of feed and no cattle, it would seem that the right course of action would be to take advantage of the weak spots in the stocker and feeder market and to place buying orders with a first-class live stock commission firm in one of the leading markets of the country. The biggest crop of corn ever grown left in the fields the greatest amount of roughage farmers ever owned, and it cured in excellent shape, so that steers which cost at the start as feeders from \$7@7.50 per 100 lbs., have since then eaten a big cut into their cost. Lower corn prices at the elevators as compared with last year have made the disposition of the farmer's corn crop by the way of the cattle route a much surer means of bringing high prices for the corn, and the farmers who have had droves of thirty young hogs feeding behind the cattle have made lots of money. Recently there has been quite a demand for choice light-weight stockers at high Clay, Robinson & Co. say in their weekly Live Stock Report: "Taking Indiana, Ohio and Michigan as a whole, there are as many pigs as one year ago," according to our hog salesman at East Buffalo. "The supply of brood sows is normal. It is true that in some sections hogs have been practically cleaned up by disease, but in other sections there is enough increase to offset this. I never saw such a scramble for shoats in the country as now. Most owners are reluctant to part with their young swine. I know of some sales of shoats at \$9@10. Unless the unforeseen happens, there will be no liquidation of either pigs or shoats in the east. There is plenty of corn and owners are confident that prices for hogs will stay high. This will be a hog-making season. East Buffalo should be getting fairly good runs of hogs around May 1. The supply of cattle, both thin and fat, is the smallest in many years. Reflecting the big decrease in the supply of sheep and lambs in the east, is a falling off of around 300 double decks a month at East Buffalo from one year ago. And last year was featured by light supplies of ovine stock."

The season is close at hand when the dairy sections of the middle west will market their spring calves in liberal numbers.



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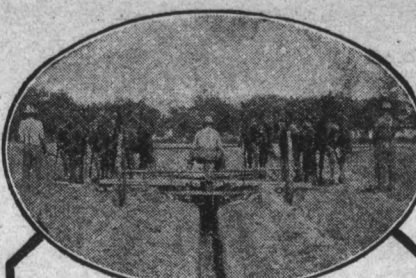
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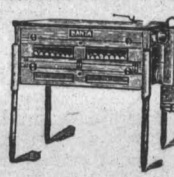
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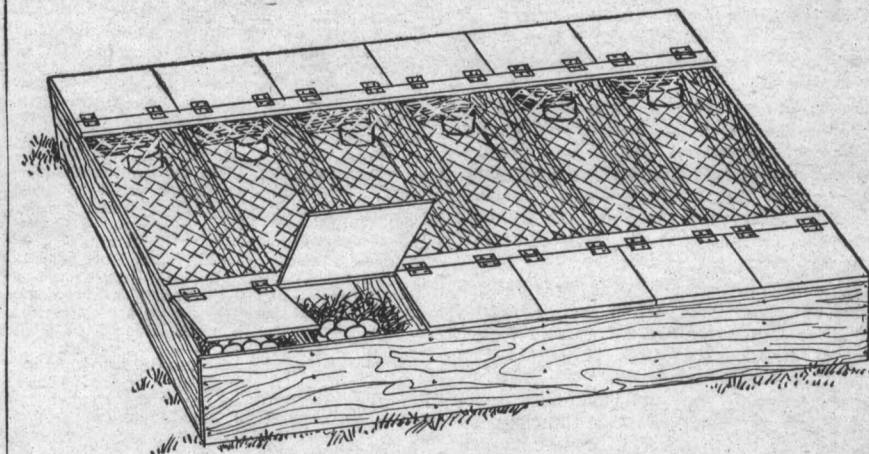
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Poultry.

A HANDY, INEXPENSIVE HATCHERY.

Last spring I used a couple of easily constructed coops for my sitting hens and found that they save lots of work in a busy time. I am therefore sending description and rough sketch of one of them, which is designed to accommodate six sitters. It has a length of 9 ft. and a width of 6 ft., the sides, ends and partitions being 14-inch boards. As shown in the cut, there are five partitions which, in connection with the ends, form six compartments, each of which is 18 in. wide and 6 ft. long. At one end of each of these compartments is placed the nest, thus giving a row of nests extending across the front of the coop as it is presented in the illustration. The nests are protected by a hinged cover. In my case I used a single board for this cover, but it is advisable to cut this board as shown in the illustration so that any one of the nests may be reached without uncovering the others. Across the rear of the coop is a similar hinged cover which comes into use at feeding time, the food and water receptacles being placed at that end



of the narrow compartments. The surface between these two hinged covers is covered with poultry netting.

Such a hatchery may be placed in a quiet part of the poultry house but it is better to locate it in some other building if weather conditions are such that it cannot safely be placed out of doors. I have had no trouble in getting broody hens to take to the nests in such a coop. They cannot see each other, and yet each has a runway for exercise and feeding. With two such hatcheries it is possible to set a dozen hens at one time, and when they hatch a few of the best hens will take care of the whole lot of chicks.

Tuscola Co.

Mrs. Y.

METHODS THAT HAVE BROUGHT SUCCESS WITH TURKEYS.

Having had over ten years' experience in raising turkeys, I can possibly advance some ideas of value to beginners as well as to those already familiar with some of the discouraging features of the business.

First of all, I will say that there is very little in breed. I have met with both success and failure with the Bronze, the black, the common grey and with crossbreds. The White Holland I have never tried, therefore can say nothing for or against that breed. I am partial to the Bronze, or "mixed Bronze" (part Bronze), because of the handsome plumage and the satisfactory weight of the mature fowls, the young gobblers at selling time often weighing 20 to 25 lbs..

The best time to have turkeys hatched is from the end of the first week in May to the middle of June, as then long warm days are to be expected and flies and grasshoppers begin to be plentiful. If hatched too early the cool mornings and evenings, with the long fast of the night, weaken the little poults, and every little weakening lessens their hold on life.

Hen turkeys should not be fed too liberally during the winter, or at any time. If allowed plenty of range they will be healthier and more apt to lay at the proper season. They may lay fewer eggs, but the poults will be harder than if the laying season is forced by pampering.

Combating the Poults' Enemies.

Lice are the poults' most persistent enemies and they seldom survive the attacks of lice when very young, hence every precaution must be taken previous

to hatching. I sprinkle the mother turkey's feathers and nest with dry sulphur several times while sitting, and remove the little ones from the nest as soon as they are dry enough. I then anoint—not too liberally—the feathers of the old turkey, principally those under the wings and the long thigh feathers, with kerosene. I then feed her well and turn her out for a day or a night before giving her the little ones.

Bowel trouble is the next great enemy, and I have never known a young turkey to survive it. It does not pay to doctor them. Overfeeding, dampness and, I think, a hereditary tendency to the disease are the causes; also, I might add, the raising of turkeys on the same spot of ground year after year. The safest thing to do is to remove every drooping turkey from the brood as soon as it is noticed and give the rest a fresh clean spot of ground, and a new house, if possible. I have saved some in this way when the whole brood seemed affected. Never allow a sick turkey to drag around and eat and drink with the well ones.

A little copperas in the drinking water helps to keep them healthy, and dry feed—such as cracked wheat, oats and toasted hominy—should be given them as soon as they are old enough. I feed hard-boiled eggs for the first few days, then add biscuit moistened with sweet milk, and gradually the grain after the first

week. Never give little turkeys sloppy feed or raw corn meal. Onion tops, chopped fine and mixed with toasted corn meal moistened with sweet milk, make an excellent feed for them. Give plenty of fresh pure water; keep them out of damp houses and damp rainy weather, but do not be afraid to turn them out in a little dew if the weather is warm and the sun shines. The dewy grass is good for them and they can pick it easily before it becomes dry and tough.

Last, but not least, be sure your houses are varmint proof and do not set them against a fence, since weasels usually follow fences and are capable of squeezing through very small places or fashioning an underground route.

Pa.

A. R. SIBLEY.

PARASITES ON BROODY HENS.

During the incubation period the sitting hen is very prone to become infested with parasites, not only giving her a very uncomfortable time of it while on the nest, but afterwards becoming a menace to the chicks. To prevent this condition it is good practice to occasionally give the hen, nest, and eggs a good sprinkling with pyrethrum, as this will drive the pests away if it does not actually kill them.

In addition to this, a good dust bath should be placed convenient to the nest, so that the hen can easily clean herself during the time she is off the eggs. The presence or absence of insect pests on a broody hen makes all the difference between a fretful and a contented mother.

Canada.

W. R. GILBERT.

Aged Hens not Profit Yields—At the Maryland experiment station 60 White Leghorn hens, in three successive years, laid an average of 171.3 eggs the first year, 149.1 the second and 115.1 the third year. The profit per hen the first year was \$2.07, \$1.61 the second and 90 cents the third year. All of the five hens which produced 200 eggs and over, laid their first egg in November, whereas of the fowls producing 100 and under only 3.7 per cent laid their first eggs in November, 44.4 per cent laid the first egg in January, and 13 per cent laid the first egg in February. The shrinkage in egg production during the third year proves conclusively that hens of this age are being maintained at a serious financial loss.

Practical Science.

PREPARED INFANTS' AND INVALIDS' FOODS.

BY FLOYD W. ROBISON.

Concomitant with the placing on the market of specially prepared cereals, breakfast foods and the like, there have appeared many varieties, and two or three distinctive types of prepared foods designed particularly for, in one case, infants and young children, and in the second place, invalids suffering from peculiar forms of mal-nutrition diseases.

These prepared infant foods have most of them been designed with the idea of either taking the place of human milk, or acting as a supplement thereto. Invalid foods have been prepared for the purpose of furnishing palatable and nutritious foods which are not incompatible with the peculiar disease with which the patient is suffering.

Some Are Meritorious.

Some of these foods in both classes have considerable merit; many of them in both classes are entirely devoid of merit, and in some instances, instead of being corrective, and at least not incompatible for the specific disease, are quite the reverse, and if taken or consumed in any appreciable quantity whatsoever, would tend to aggravate the very disease or condition they are advertised to mitigate.

The usual form of analysis to which most food materials are subjected would furnish very little index of the real character and value of these foods. Some of the best work from the analytical point of view which has been done on these products has been performed in the laboratory of Internal Revenue of the Canadian government, followed at times by some of the various experimental stations of the United States. McGill, of Ottawa, published in Bulletin No. 59, a tabulation of the various so-called infant foods from which Leach has selected some of the more typical ones which we will make mention of here.

Two Classes of Infant Foods.

The infant foods have been briefly divided from an analytical point of view into two classes. The first class we will call the "milk foods," meaning by this, foods which consist in part, at least, of milk; and second, "farinaceous foods," which consist in the major, of some of the cereal grains.

Among the milk foods, we have a class known as malted milks, the best known of which, are perhaps Horlick's, Mellin's Food, Nestle's Food, and many others of like type. An analysis of Horlick's shows the following contents:

	Per Cent.
Moisture	2.55
Ether extract	1.41
Soluble in water and alcohol.....	63.87
Proteids	14.00
Mineral ingredients	3.57
Starch	15.68
Maltose	49.00
Cane sugar	8.00

This analysis gives no mention of lactose which is the sugar typical of milk. This must have been neglected in the original analysis for we are quite certain that Horlick's contains considerable lactose, or milk sugar, which would, of course, be the evidence needed to confirm the presence of milk. It is our impression from a study of Horlick's made several years ago, that this product contains a considerable amount of milk. Likewise the maltose present shows that it contains a considerable quantity of malt or malted starch. The presence of 15.68 per cent starch would indicate that the maltose was largely derived from the malting of wheat flour rather than from mixing in pure barley malt, in which event, of course, there would be practically no starch present. It is evident from the analysis, therefore, that Horlick's Malted Milk consists is the main of a mixture of malted cereals, such as malted flour and milk, all of which is evaporated or reduced, either before or after mixing, to a dry condition in which it is placed on the market.

Mellin's Food is another preparation which has won considerable merit as an infant's food. An analysis of Mellin's Food indicates the following composition:

	Per Cent.
Moisture	4.72
Ether extract	trace
Soluble in water and alcohol.....	82.00
Proteids	10.10
Mineral matter	3.50
Maltose sugar	50 to 60

An analysis of Nestle's Food shows the following composition:

	Per Cent.
Moisture	2.18
Ether extract	4.45
Soluble in alcohol and water.....	43.84
Proteids	10.72
Mineral matter	1.60
Starch	35.34
Milk sugar (lactose)	8.96
Cane sugar	36.34

Farinaceous Foods.

Farinaceous foods frequently show a considerable amount, likewise, of maltose but no milk sugar, showing that they are similar in some respects to the prepared breakfast foods, in that practically the only change they have undergone is in the conversion, or partial conversion, of starch into malt sugar. Of the farinaceous foods, one of the most valuable which has come under our observation is known as Robinson's Barley. Its analysis shows the following composition:

	Per Cent.
Moisture	9.40
Ether extract	.40
Soluble in water and alcohol.....	2.01
Proteids	7.46
Mineral matter	.94
Starch	78.66

From this analysis it will be seen that this product has undergone practically no manufacturing change whatsoever. It is almost pure barley flour and has not undergone any malting whatsoever. The direction on the package prescribe that it shall always be used in connection with milk, and being an unconverted starch, it is, of course, imperative that the directions given, which are for the purpose of making the starch soluble, should be implicitly followed. An infant, surely should not receive raw starch, but if the starch is heated carefully to coagulation, the cellular structure is broken up and the starch is rendered more or less completely soluble, in which condition it may be mixed with milk for infant feeding with great promise of success.

Infant foods have played a very important role and have assisted very materially in providing a variety of ways for the nourishment of infants when the use of the mother's milk seems incompatible. Generally speaking, there is no prepared food which can be made to take the place of the mother's milk, but very frequently it becomes absolutely necessary to resort to some other food, and these various products are valuable, at least in tempering the transfer from the mother's milk to cow's milk. We have known several instances in which even modified cow's milk did not seem to be satisfactory, and in these cases, some of the prepared foods have of necessity been used and with quite satisfactory results. Some infants have thrived well on Horlick's Malted Milk, while others have not made satisfactory progress on Horlick's, and yet have gotten along nicely on Mellin's Food or Nestle's Food, or Robinson's Barley in connection with cows' milk, and the reverse. This serves to show how important a factor is the individual idiosyncrasy. Likewise evaporated milk has proven of great value when some of these other preparations have failed utterly. (Continued next week.)

LABORATORY REPORT.

I have been much interested in the Practical Science series of articles. What diet would tend to cause brittle arteries and a condition leading to apoplexy, and what diet would tend to prevent this condition? Would the diet indicated remedy an anemic condition, viz., strong in iron and lime tend to prematurely age a person?

St. Joseph Co. L. P. F.
The condition described above which is commonly known as hardening of the arteries, if not due to faulty nutrition, is constantly aggravated by it. We have known many instances of relief from this condition due to the presence of a laxative in the diet, and would suggest that an effort be made to regulate and systematize the diet to provide the required laxative material. Such a diet might very well include in liberal quantities almost any of the fruits, and particularly a liberal quantity of figs, prunes, apricots, etc. A very good habit to form is the drinking of a liberal quantity of boiled hot water, from half to three-quarters of an hour before breakfast, and on retiring at night. Grapefruit for breakfast is very good. We do not think a diet strong in natural iron and lime that is selected from vegetables and fruits containing these ingredients in considerable quantity would tend to prematurely age a person.



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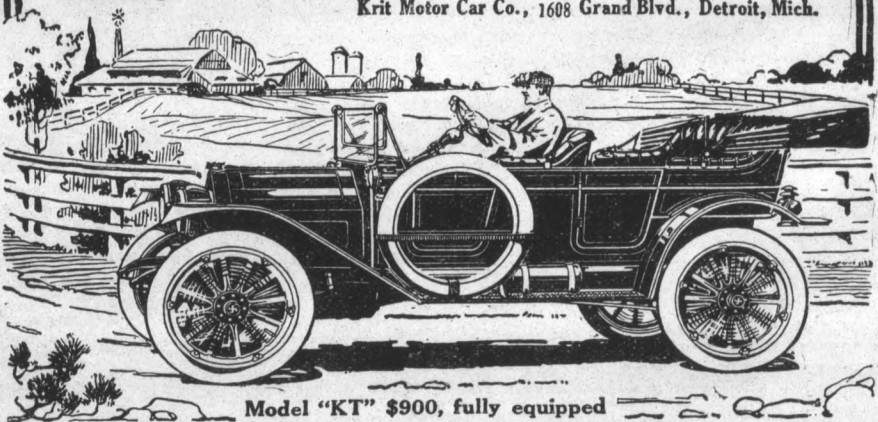
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DETROIT, APRIL 12, 1913.

CURRENT COMMENT.

The New Congress. The sixty-third Congress met in special session on Monday of this week, pursuant to the call of President Wilson, for the specific purpose of a revision of the tariff, although the way has been left open for the consideration of other important problems which are pressing for congressional attention, should time be left for further action when the tariff problem is disposed of. For the first time in a score of years Congress has assembled with both houses in control of the democratic organization and with a democratic president to aid in shaping its policies and approve its acts. In view of the important work which this new Congress is to undertake at once, a brief review of the personnel of that body from the standpoint of political affiliations will be of interest to the reader.

The membership of the House of Representatives is larger than that of previous congresses, due to an increase of membership from 396 to 435, which became effective on March 4th last. This increased membership, together with a sweeping change in the political fortunes of many of the old members at the last national election, gives this House a larger proportion of new members than has occurred in any Congress of recent years, there being 154 new members. Also many old time and familiar figures will be missed in the roll call of the present House. The democratic majority in the House is a large one, the membership affiliated with this party numbering 288 as compared with 144 who are designated as republicans, which, however, includes perhaps a score of congressmen who have affiliated themselves with the progressive organization which appears in Congress for the first time at this session. With three vacancies this makes up the total roll of the House of Representatives. In the Senate the democratic margin of control is much smaller, the total party strength in that body being 51, as compared with a combined republican and progressive strength of 45.

While it is the professed intention of the leaders of the dominant party in Congress to push the tariff revision bill as rapidly as possible, there is certain to be much debate with regard to the several schedules and the session is likely to be a long one. Even the most optimistic of the leaders do not prophesy that the matter will be disposed of earlier than late in July. A tentative revision of the several tariff schedules has already been prepared by the leaders and will be submitted to the party caucus directly upon the completion of the organization, and within a week the tariff debate in the House, which will first consider the schedules, will have begun. Already many of the essential details of the proposed tariff changes have been published but

as they are tentative proposals only we will refrain from commenting upon them until they are formally before the House for action.

With the assembling of Congress it had not been finally determined whether the proposed revision would be made in a single bill, or schedule by schedule in separate bills, although it is said that the President and the party leaders in the House favor the former method, believing that a general tariff bill could be passed. It is probable that a general bill conforming to the ideas of the leaders could be passed in the House with the very substantial democratic majority in that body, but it is certain that more difficulty would be encountered in the Senate, where sectional interests would necessarily be protected by democratic senators, thus making it probable that compromises would be necessary to pass any general tariff bill through that body.

As above noted, the proposed tariff changes will be reviewed in detail in future issues. These changes include radical reductions in tariff rates all along the line and a change in their method of application from a specific to an ad valorem basis wherever this change is practical. It is also proposed in the tentative agreement to place many articles on the free list, including raw wool and some other agricultural staples, which, however, will be discussed with other details of the proposed tariff changes in future issues.

It is probable that the tariff reduction will be greater than would have been the case had not the amendment to the constitution empowering Congress to levy an income tax for national revenue become operative through the approval of a sufficient number of states. In order to make up the deficiency in the revenue which will result from the cutting of the tariff, it is proposed by the present Congress to enact an income tax, the tentative plan of which contemplates a graduated tax of from one to four per cent on incomes derived from any source to the amount of \$4,000 or more per year, it being estimated that this will provide a revenue of something like \$100,000,000 per annum, while experts have asserted that the revenue proposed in the tentative agreement on tariff schedules made by party leaders will result in a deficiency of something like \$80,000,000 per year, as compared with present tariff revenue.

It is indeed fortunate that while the democratic Congress is preparing to make history which will decide the future political fortunes of that party, the people of the country are calmly awaiting results with no disposition to become excited or panic stricken over the outcome. This is as it should be. The condition of the country and its business is very different from that which obtained two decades ago when the Wilson-Gorman bill was allowed to go into effect by President Cleveland without his approval, and there is apparently little danger of a recurrence of the business depression which was coincident with that change.

There are features of the proposed tariff changes which would be repugnant to the best interest of Michigan agriculture, but it should be remembered that as yet they are simply tentative proposals, and that notwithstanding the prestige of the men who are advocating them they have not as yet been enacted into law.

Agricultural Credit Investigations.

There is an encouraging prospect that the movement toward the establishment of an adequate system of rural credits in this country may develop into a more definite proposition in the not distant future. This subject has been given considerable attention in our columns during the past two years, when it first began to be discussed by the more advanced rural economists of the United States. Our readers have been kept informed with regard to the various agencies which have been working toward that end and the public and official support which has been given to the movement.

This movement really had its inception in the publicity given to the growth and extent of organized rural credit in European countries by the International Institute of Agriculture with headquarters at Rome. It was fostered officially by ex-President Taft, who started an independent investigation through the American ambassadors in European countries. It has also been encouraged by the official action of organized bodies interested in agriculture, notably, the Southern Commercial Congress, which took the initiative in a movement to send an American commission to investigate the workings

of the European system, which commission will begin its investigations next May. Following in the same work President Wilson has appointed a special commission of men prominent in the agricultural field to conduct an investigation into European agricultural credit systems and co-operative organizations. The members of this commission are: Senator Fletcher, of Florida, President of the Southern Commercial Congress; Senator Gore, of Oklahoma, Chairman of the Senate Agricultural Committee under the new Senate organization; Congressman Moss, of Indiana, Chairman of the Agricultural Appropriation Committee of the House; Dr. Clarence J. Owens, of Maryland, Managing Director of the Southern Commercial Congress, and formerly President of the Southeastern Agricultural College of Alabama; Kenyon L. Butterfield, of Massachusetts, President of Amherst College, and a well-known former Michigan man; Dr. John Lee Coulter, of Minnesota, the government's expert on agricultural statistics; and Col. Harvie Jordan, of Georgia, President of the Southern Cotton Growers' Association, and former president of the National Farmers' Congress.

This commission will co-operate with the American commission above mentioned, which has also been given a semi-official status by Congressional recognition, having been directed by Congress to submit a report of its findings to that body.

The Milling Industry.

Some statistics recently prepared by the Bureau of Statistics of the Department of Commerce and Labor throw additional light upon the decadence of the small custom mills of the winter wheat states. As this subject is one which has evoked considerable interest from Michigan Farmer readers from time to time, a brief review of certain features of these statistics would perhaps be of interest to the average reader.

The census data upon which these statistics are based show that in 1909 there were 23,652 mills in the country, more than one-half of which, or 11,961, were custom mills. These custom mills, however contributed but a small per cent to the total value of milling products, their aggregate output being valued at \$55,115,553, or 5.9 per cent of the total value of the manufactured output of all mills, which total amounted to \$938,699,958.

Of the merchant mills, as differentiated from the custom mills, more than three-quarters were engaged chiefly in the milling of wheat flour and other products intended for human consumption, the value of the product of these mills being \$832,790,364, or 88.7 per cent of the total for all mills combined.

An explanation of the decadence of the small custom mills over large sections of the country is found in the fact that the milling industry is one in which the cost of the raw material constitutes a very large portion of the total value of the products. The total cost of raw material used by all mills in 1909 was \$813,891,347, which represented about 86.7 per cent of the total value of the manufactured products, leaving \$124,808,611 to represent the cost of manufacture and profit on the investment.

The mills of all classes gave employment in 1909 to 88,849 persons, of which 46,467 were wage earners. The amount paid for salaries and labor was \$35,167,693. The quantity of grain ground was 872,950,743 bushels, the bulk of which was wheat and corn.

The modern concentration of the milling industry is shown by the fact that 138 mills, or 1.2 per cent of the total of the merchant mills, manufactured products valued at \$1,000,000 or over in 1909, yet the small percentage of mills of this class manufactured 36.1 per cent of the total products of all mills for the year.

The same year the small merchant mills that manufactured products valued at less than \$20,000 constituted 51.2 per cent of the total number of merchant mills, yet the value of their products amounted to only 6.2 per cent of the total, while 72.6 per cent of the total value of milling products for the year were turned out by establishments having a year's product valued at \$100,000 or over.

It is interesting to note that these statistics show a considerable variation with regard to the survival of the small mills. In Pennsylvania, for instance, the larger mills owned by corporations amounted to only four per cent of all milling establishments and contributed only 27.4 per cent to the total of products, thus showing in that state the farmers particularly must still patronize the custom mills in securing products for home consumption to a

greater extent than is true in other wheat producing states.

Even though public sentiment may be apparently crystallized on any subject this is no sure indication of what may be the record of its expression at a general election. Notwithstanding the fact that the vote on the constitutional amendment providing for equal suffrage at the November election was very close, the earlier returns on the same proposition re-submitted at the recent April election seem to indicate that this proposed amendment has been lost by a substantial majority, and that notwithstanding the fact that the friends of the measure believed that it would stand a much better chance of passing at the spring election when the country vote would be relatively stronger than would be the case at a general election, such as that at which it was last submitted.

Not less baffling is any attempt at the analysis of the wet and dry vote in some of the counties where this question was submitted at the spring election. Genesee county, which has before been under local option but went wet by a small majority in 1911, is indicated by the early returns to have gone dry at the recent election, while Emmett county, which two years ago voted for local option appears by the early returns to have reverted to the wet column.

While the early returns, as above noted, indicate that the equal suffrage amendment was lost, incomplete returns would indicate that most, if not all, of the other proposed constitutional amendments were carried by very substantial majorities.

What influences may operate to change public sentiment in so marked a degree upon questions which have been long before the people are impossible of analysis, but where the same propositions are submitted to practically the same electorate at succeeding elections, or where but a brief period of time has elapsed, the marked variation in results would seem to indicate that public sentiment is a constantly variable factor, particularly during its period of crystallization, although its ultimate expression will always savor of the wisdom which makes our form of government "of the people, by the people and for the people," the most popular and successful in the world.

Don't Lose the Benefit.

The reader who does not carefully look over the advertising columns of the publications which come to his table is losing something of the benefit which he might derive from same. In the field of agriculture there is no better way to keep in touch with the improvements which are constantly being made in agricultural machinery and equipment than by carefully looking over the advertisements in each issue of your farm journal. In this way the reader will not only keep in touch with the improvements which are constantly being made, but will as well acquire a considerable fund of useful information regarding different types and kinds of farm equipment which, while it may not be of immediate value, will be found useful at some later date when it becomes necessary to increase or supplement the farm machinery along any particular line.

In case one is immediately interested in any line of equipment which is given publicity through the advertising columns of his farm journal, a letter or postal card will bring literature which will tell him more about it, and by getting and comparing literature of this kind any man will be much better posted on the latest and most approved devices, and better qualified to purchase intelligently and in a manner best calculated to satisfy his needs. Truly, it is good economy to study the advertising columns as well as to carefully review the reading columns of your farm publication.

LEGISLATIVE NEWS.

As the legislative session advances, many of the bills which have been under consideration in the committees, are considered in "committee of the whole" and put on final passage in the two houses, so that the record of legislative accomplishment is more apparent to the observer. During last week, the fourteenth of the legislative session, many bills passed both houses, a number of which are of considerable interest to country people.

One of these was a bill to allow any county to establish an agricultural bureau that will employ expert assistance to help solve the agricultural problems of the farmers within the county, with the provision that a majority of the electors of the county must first approve the establishment of such a bureau.

Another bill of general public interest

was an amendment to the school law, permitting any district to bond up to 10 per cent of the assessed valuation of property within the district for erecting and equipping schoolhouses, with the proviso that all such bond issues must be submitted to a vote of the electors within the district.

Another bill pertaining to schools which was passed during the week, was one providing that when pupils complete the eighth grade work before they are sixteen, that being the age at which compulsory attendance at school ceases, they must either continue to attend school until they are sixteen years of age or secure a permit to enter any kind of employment.

Another bill in which a large proportion of the public will be interested is one forbidding the drinking of beer or liquor on steam or interurban cars, except in cafe apartments.

A bill which will be of particular interest to sugar beet growers was passed providing for state supervision of the testing of sugar beets where farmers are paid for their beets according to the percentage of sugar content. Under this law Prof. Kedzie, of M. A. C., State Analyst Shannon and Experiment Station Chemist Patton will work out a plan, and the State Dairy and Food Commissioner will designate two chemists to supervise the testing at the factories. These men will have authority to order the dismissal of any factory inspector whose work does not comply with the state regulations.

An amendment of the tax laws was made providing that when any person presents a deed of recently transferred property at the county treasurer's office for a certificate that all back taxes have been paid, the treasurer shall certify on the deed that it was presented for that purpose. The bill further provides that if the treasurer overlooks any tax items and the property is afterward advertised for sale for the collection of unpaid taxes, the owner must be notified and given an opportunity to redeem the property for the amount of actual legal charges against it.

A gun license law was also enacted imposing a license tax on all hunters except those hunting in the counties where they live, this exemption not applying to deer hunters. Another game bill enacted limits deer hunting to one in a season. The open season for deer hunting is also shortened to the period between November 10 to November 30. Non-resident hunters are permitted to ship one deer out of the state. This bill also makes minor changes in the law covering the shooting of birds and permits bear to be killed at any season of the year.

Along the same line was a bill permitting the taking of dogfish, carp, sheepshead and other obnoxious fish from the inland waters of the state with seines under certain regulations.

A number of other bills of minor or sectional interest were passed; also some covering elections, one of which requires proof sheets of ballots to be sent by registered mail ten days before primary day and election day to all candidates whose names appear on such ballots as a precaution against the mis-spelling of names and the consequent discrimination against such ballots in the canvassing of election returns. A corrupt practices act was also passed to limit the amount which a candidate can spend to secure nomination or election to public office.

A bill which will be of particular interest to all veterans of the Civil War was an appropriation bill to pay the expenses of all veterans, now living in Michigan, who fought in the battle of Gettysburg on July 1, 2 and 3, 1863, to the Gettysburg semi-centennial next summer.

Other appropriation bills were one carrying \$187,500 for general repairs and special purposes at the Jackson prison, and one carrying \$100,000 for a revolving fund, corresponding to a working capital, to be used in establishing industries on state account to employ convict labor that cannot be longer leased to contractors under the law.

Several amendments were made to the state banking law, regulating the amount of loans which banks can legally make and prescribing the conditions under which they may make certain classes of investments.

Two important propositions which were finally defeated last week were the proposed constitutional amendment for the short ballot and the bill for uniform text books in all schools, both of which failed of passage in the House for the second time at this session and cannot, under the rules, be again considered.

HAPPENINGS OF THE WEEK.

National.

At the opening of the special session of the sixty-third Congress on Tuesday, an old custom was re-established by President Wilson, who went in person before Congress to read his message, setting forth the purposes for which he has called the special session. This practice was followed by Presidents Washington and Adams only; since their time the chief executive's message has merely been delivered in writing.

Up to the time of going to press the outcome of the election held in Michigan Monday is only a conjecture, but the early returns indicate that all the amendments to the constitution except the extension of suffrage to women, carried, and that the republican state ticket will perhaps lead the others.

There will be established at the University of Michigan this summer a course in embalming and sanitary science.

Manufacturers along the river front at Grand Rapids are fearing loss from the floods. The river at that point has already reached the 12 foot mark and with the crest of the high water still above the city there is grave concern regarding the probable outcome, conditions indicat-

ing as severe a flood as occurred in 1904 when a heavy loss of property resulted.

The National Drainage Congress, which is in session at St. Louis this week, will consider the proposition of flood prevention.

A fire in the Oliver Motor Truck Company's plant at Detroit resulted in a loss to the building and contents, estimated at over \$10,000.

The city of St. Louis, Mo., is discussing the proposition of adopting the plan of selling eggs by the pound instead of by the dozen.

For the past 16 years an association in the city of Philadelphia has had charge of gardening vacant city lots for the support of charity enterprises and the report on the city charity contributions shows that this association has exceeded all others in the amount of help actually accomplished.

The state of Oklahoma is considering the proposition of appropriating \$1,500,000 for the erection of a state capitol building.

Heavy sentences were given four persons found guilty in the United States District Court of Detroit for violating the Mann act, a federal statute framed to prohibit the taking of women from one state to another for immoral purposes.

The municipal bus service of the city of Detroit has failed thus far to succeed financially, the deficit for the first 30 days of the service amounting to nearly \$60 per day. The common council, however, has extended the time of the trial, hoping that experience and increased patronage will reduce the amount of the deficit.

The silk workers' strike at Patterson, N. J., assumed serious proportions last Saturday when it seemed that the police department would be unable to cope with the situation. In all 175 strikers were arrested on that day.

Victor L. Murdock, congressman from Kansas, has been chosen by the progressive party as a candidate for speaker of the house. Congressman Underwood, of Alabama, is the democratic candidate who will be selected after Congress has convened.

J. M. Frost, of Muskegon, was elected president of the Michigan Schoolmasters' Club at Ann Arbor, last Friday. The vice-president is Gertrude Breed, and the secretary-treasurer is J. P. Jocelyn, both of Ann Arbor.

A strike of motormen and conductors tied up street car traffic in the city of Buffalo and along the Niagara frontier Sunday. The officials of the railway announced that strike breakers will be imported and hope to resume traffic soon. A bitter contest is anticipated. The strikers demand better pay, asking for an increase of from five to seven cents an hour, a re-arrangement of working hours and a recognition of their labor union.

Foreign.

Henry Lane Wilson, American Ambassador to Mexico, has been suddenly placed in a precarious light before the American public by the declarations of Senora Madero, widow of the late president of Mexico. She declares that Ambassador Wilson is morally responsible for the assassination of her husband February 22. Her charges have been filed with the state department at Washington.

The war between Turkey and the allies appears to be moving contrary to the wishes of the Ottoman government. Last week Adrianople was captured by the allies and in other fighting districts the Bulgarians and their allies have been pushing the Turkish lines back toward Constantinople.

The Japanese government is protesting against pending land legislation in California aimed at Japanese farmers in that state. It is now known that a similar protest was made against legislation of the same kind in Washington, which was quietly refracted through the action of former Secretary of State Knox.

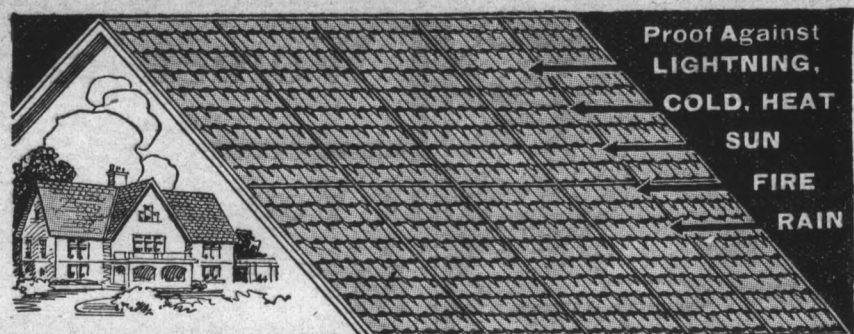
The little kingdom of Montenegro has been attracting considerable attention from all parts of the world. She, as one of the allies in the struggle against Turkey, has planned a campaign against Scutari, which territory lies next to the little kingdom, but the occupation of which might prove a detriment to some of the other powers, particularly Austria. Presumably because of this interest of Austria, the great powers have been appealed to, and now protest against the occupation of Scutari, and a blockade of the forts of the kingdom has been ordered and effected. Despite the demands of the powers and the presence of the warships, it is reported that the little country will continue in her proposed military campaign.

CATALOG NOTICES.

The Larrowe Milling Co., Woodward and Palmer avenues, Detroit, Mich., will send literature relating to their special trial offer of Larro-Feed, a specially prepared dairy feed, which is backed by a guaranty of security in the reputation of the firm which manufactures and distributes it. Dairymen should write at once for literature regarding special trial offer, mentioning the Michigan Farmer.

Marlin Repeating Rifles and Shotguns, manufactured by the Marlin Firearms Co., of New Haven, Conn., are fully illustrated and described in a 130-page catalog issued by this company. This full line of repeating rifles and shotguns includes guns for every kind of use and describes the parts of same as well as the ammunition used in them. Mention the Michigan Farmer when writing for this catalog.

Corn Contest in St. Joe County.—The St. Joseph County Y. M. C. A. offers \$50 in prizes in a corn-growing contest open to all boys of the county, 12 to 18 years old. Walter Gospill, of Sturgis, is enrolling contestants.



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Send for Catalog of designs, sizes and styles. Ask for sample shingles and get our rock-bottom prices on shingles and on corrugated roofing and siding before you buy any roofing. We sell direct, saving you middleman's profit. Orders shipped day received and we pay the freight.

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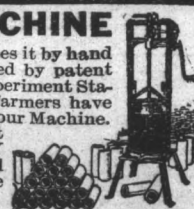
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Women and Her Needs.

At Home and Elsewhere.

If You Must Work Do It Right.

MOST of us have spells of wishing that we could be exempt from work; we don't actually dislike work, but we wish we didn't need to feel that we must work or starve. We sigh for a land of ease and plenty where we could loll in easy chairs, while servile lackeys jumped to anticipate our slightest wish. Or perhaps our dream is of a country where food and clothes grow on bushes and drop down for us, so that we need not even have the bother of plucking them. These are "spells of wishing," not our ordinary frame of mind. To most of us there is joy in honest work honestly done, and in our better moods we feel sorry for those poor humans who are exempt.

But the sorrow I feel for those who do not have to work is as nothing to the wrath I feel for those who do have to work, and then won't do it right. My experience with help since I have been a housekeeper has led me to believe that there are more girls and women who don't know how to do things right, or won't do them right if they can, than there are the other sort, those who know how to do their work and would be ashamed not to live up to the best that is in them.

I have been a housekeeper seven years and in that time I have had 77 different washwomen. Of the 77 only two got the clothes clean, and they tore off so many buttons it was almost as much bother to put the clothes in shape as it would have been to do the washing. One of these women had a conscience. She was honestly trying to do the best she could. She was the only one of the 77 who showed in any way that she considered right living had any connection with honesty in work.

I was taught to work by an old-fashioned mother, who never for a moment countenanced slipshod ways of working. Each dish had to be carefully freed of crumbs and particles of food and piled in neat stacks before the dishpans could be gotten out. Plenty of hot soapsuds for washing and clear hot water for rinsing was the rule. The dishes were not fine, but they had to be clean and shining and woe to the luckless girl who dared put a plate away with a streak across it, or a knife and fork that was not rubbed perfectly dry.

The washing was almost a sacrament. Each garment was turned inside out in spite of the grumbles of daughters who couldn't see any sense in turning pillow slips wrong side out when you washed them, just to have to turn them back on ironing day. Not a speck of dirt was allowed to remain in a single article, and if one got by the first rubbing, clean suds had to be made and the garment rubbed again. The hanging up was a work of art. I was for hanging them up any old way just so they got on the line. Mother had ideas about symmetry that annoyed me. The clothes must be hung up by families, the sheets together, the pillowslips, the table cloths, towels, etc., each in a group. I sometimes rebelliously asked if a towel would refuse to dry if it happened to be hung on the line with the aprons, but was promptly squelched with the remark that so long as I lived at home I would have to do things right.

The ironing was just as much of a fine art. The clothes were dampened over night, rolled tightly, and without wrinkles, and covered in the basket. Then the irons just hot enough not to scorch, the great work began. As I remember it there was only one way of the board that was the right way to lay a given garment. The pillowslips were lain lengthwise with the hem to the left and the seam towards the ironer. Any other way was a sacrilege. Each piece had to be ironed dry, no matter how damp it was to begin with, and creases and folds must come just so and so. Any slighting was not tolerated for a minute, for honest work was a religious rite in our family.

Sweeping and dusting were the same. There were no slighted corners nor tops of tables dusted while the legs went unnoticed. Bed-making was a work of art. The wide hems always to the top, the under sheet right side up and the top sheet right side down. Quilts and blank-

ets were well tucked in, there was no kicking out at the foot when mother made the beds or saw that we did them right. All through the house there was a right way, an honest way, to do a thing, and Heaven help the one who didn't do it that right way.

We used to groan mightily at the time. We knew girls whose mothers weren't so "fussy," and we couldn't see just what difference it made if we did plump unscrapped plates in the dishpan, or reverse the sheets occasionally. We couldn't see it then, but we see differently now. We were being brought up in habits of order and neatness which have not only meant more dollars in our pockets when we worked for other people, but have saved us dollars since we have cared for homes of our own. Every thinking person knows that a thing properly cared for far outlasts one that is neglected. Garments half-washed and poorly ironed, not only look badly on the wearer, but wear out quicker than those which are properly cared for. Then the girl who is allowed to be "sloppy" in the work that she does during the formative period of her life, will go into the world with careless and slipshod habits. If she works for others her lack of thoroughness will keep her from going to the top, and if she marries and keeps her own home, they often work to her husband's financial detriment. The money which he might otherwise save he all too often must spend to replace things which her carelessness ruined.

The mother with no money often laments that she can not give her children "a start." Let her teach them to work honestly, which means thoroughly, and she will have given them the best "start" a human being could have.

DEBORAH.

WHERE LIES THE BLAME?

BY ELLA E. ROCKWOOD.

WIDESPREAD awakening to the fact that the nation is in the grip of a vice so vile as to be almost unbelievable is calling out many ideas as to the cause. Investigations to the end of determining this are not lacking for support from all right-thinking people and it is devoutly to be hoped that not only the source, or sources, but also a remedy may be found.

A low wage among working girls may be in part responsible, yet it would be unjust to place the blame wholly with employers.

Environment plays an important part in the welfare of girls as well as of everybody else in the world. Conditions and circumstances entirely aside from any pecuniary consideration are alone responsible for many of life's failures. A girl kept under the guidance of wise parents may never go wrong while the same individual without that wise oversight which any young person should have during adolescence might turn out very differently. Remove all restraint and it requires a level head indeed, to preserve blameless the life of a young person who looks at the world as a place to have a good time. And restraining influences are sometimes needful for those who have not the excuse of youth, those who are as we express it, "old enough to know better."

All who have arrived at years of maturity must realize that it is dangerous to allow too much liberty and freedom of action during the formative period, for it is then that mistakes are most liable to occur.

Lax methods of parental government are at the bottom of many a wrecked life, and the man who pays an insufficient wage is not the only one to blame for the moral downfall of his girl employees. He is right in charging that the parents have a prior responsibility in the case. It is for them to know where and with whom their daughters spend their hours of employment, those idle, recreative hours which are by far more dangerous than the hours of honest labor.

In the case of the girl who yields to the lure of the tempter, away back at the beginning should have begun the training

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Remarks about Nourishing Food.

"A physician's wife gave me a package of Grape-Nuts one day, with the remark that she was sure I would find the food very beneficial, both for my own use and for my patients. I was particularly attracted to the food, as at that time the weather was very hot and I appreciated the fact that Grape-Nuts requires no cooking.

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"Now I am always well and ready for any amount of work, have an abundance of active energy, cheerfulness and mental poise. I have proved to my entire satisfaction that this change has been brought about by Grape-Nuts food.

"The fact that it is predigested is a very desirable feature. I have had many remarkable results in feeding Grape-Nuts to my patients, and I cannot speak too highly of the food. My friends constantly comment on the change in my appearance. I have gained 9 pounds since beginning the use of this food."

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is High and so is the Price of Cattle.

For years the Province of ALBERTA, (Western Canada), was the Big Ranching Country. Many of these ranches today are immense grain fields, and the cattle have given place to the cultivation of wheat, oats, barley and flax, the change has made many thousands of Americans, settled on these plains, wealthy, but has increased the price of live stock.

There is splendid opportunity now to get a FREE HOMESTEAD OF 160 ACRES (and another as a pre-emption) in the newer districts and produce either cattle or grain. The crops are always good, the climate is excellent, schools and churches are convenient and markets splendid in Manitoba, Saskatchewan or Alberta. Send at once for literature, the latest information, railway rates, etc., to

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1000 PIANOS to be sold from factory direct to you; as a starter we offer you a beautiful \$300 Piano for only \$200, a snap. For particulars address at once Box 227, Brighton, Mich.

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which would have formed a bulwark of defense. Ignorance stands a poor show when the appeals of affection or passion are to be met and dealt with. Forewarned, many a girl might have withstood temptation and thereby maintained her purity. For forewarned means being forearmed against any foe.

Too many mothers hesitate to talk with their daughters concerning this question. They have the idea that to do so robs them of their innocence. Vain delusion! Instead it gives others an opportunity to poison the mind by misrepresentation and evil suggestion. For the girl is usually told by her older mates long before the parent awakens to the necessity of doing so.

Of one thing I have long been convinced. I am sure fewer girls would fall into evil ways if properly warned of the consequences before the temptation arrives. At least they would be better prepared to withstand it.

FOR THE COOK.

Date Pie.

One large cup of dates, stoned; put in a kettle with enough water to cover and cook until soft; then add one egg, one small tablespoon flour, two tablespoonfuls sugar, one cup of rich milk and a small piece of butter; bake with one crust. When cooked, beat the whites of two eggs, put on top and brown in the oven.

Green Butter Sandwiches.

Chop watercress, parsley or nasturtium leaves very fine and stir into the butter. Other green butter sandwiches may be made by taking three tablespoonfuls of cooked cold spinach, two tablespoonfuls of butter, one tablespoonful of capers, chopped very fine. Put all these ingredients into a mortar and pound to a smooth paste, adding salt and paprika to taste. The spinach should be passed through a sieve before using; then when the mixture is thoroughly blended pass through a sieve again and spread on the bread, using one slice of bread spread with this and one merely buttered with butter that has been beaten to a cream.

"1, 2, 3, 4" Cake.

One cup of butter, two cups of sugar, three cups of flour, four eggs, nutmeg. Bake until a delicate brown.

Chocolate Buns.

One cup sugar, two tablespoons of butter, creamed, half cup of cold water, one and one-half cups flour, one teaspoon of baking powder, pinch of salt, two eggs, four tablespoons chocolate, one teaspoonful vanilla; bake in moderate oven.

Lemon Icing.

One cup powdered sugar, juice of one lemon, beaten until perfectly smooth. It may be necessary to add a little water in order to make it soft enough to spread smoothly.

HOME QUERIES.

Household Editor:—How do you tell when fat is hot enough to fry fried cakes?—Cook.

When the fat begins to smoke drop in a bit of bread. If it browns in one minute, the fat is hot enough. This test applies to any uncooked food you wish to fry.

Household Editor:—Which is best for my family, oatmeal or a wheat breakfast food?—Anxious Mother.

That food is best for your family which they can best digest. You can tell what that is better than anyone else. Oat meal contains more protein and fat than wheat, but its excess of fat often makes it more indigestible than wheat preparations. It is safe to say that more people can digest wheat easily than can digest oatmeal. However, your family, or some member of it, may prove the exception to this rule.

Household Editor:—For the sake of an argument, will you please tell me which is right and why: "She lit the lamp," or "she lighted the lamp?"—D. A.

Either form is correct, as "light" is both regular and irregular. "She lighted the lamp," the regular form of the verb, is given preference by one authority, but either is correct.

HOME-MADE FURNITURE POLISH.

One ounce of beeswax, half an ounce of castile soap and one pint of turpentine. Pare the soap and wax, put them into a quart bottle and add the turpentine. Let it remain for 24 hours and shake the bottle to mix the ingredients. Next day shake well again and fill the bottle with water. On the following day it should be of the consistency of thick cream, and is then ready for use.

SHORT CUTS TO HOUSEKEEPING.

A stiff scrub brush is a great convenience on wash day for scrubbing the obstinate dirty places on wristbands, collars, overalls, and even kitchen aprons.

—Mrs. R. B. C.

Have you ever cut squares of butter paper and kept them hanging within easy reach to grease the tins on baking day?

—R. B. C.

When a fibre water pail begins to leak a coat of varnish over the inside will render it again impervious to moisture and give it a new lease of life.—E. E. R.

San silk is much nicer for darning than darning cotton. It wears better and one can darn faster with it.—A. E. L.

To prevent frosting from becoming hard too soon, and to give it a nice flavor, add a piece of butter about the size of a hickory nut to the frosting as you make it.—Mrs. J. J. O'C.

Small screw eyes which may be purchased at the hardware store for five cents a dozen are small conveniences that help toward neatness and despatch. The butter bowl, the broom, the mop, the scrub brush, the fly spatter, a ruler, etc., may be hung by them.—Mrs. R. B. C.

Encourage a close friendship between the family cat and the fowls in the poultry yard. Teach puss that chickens are not to be chased and that she must on no condition venture inside the nests. When the chickens have learned not to fear her she can prowls about at her pleasure and rats and mice will give the chicken coop a wide berth, to the great saving of mashes, grains and even eggs.

—L. M. T.

We have observed that many of the insect pests troubling ferns may be collected and trapped by cutting a potato in two, burrowing out a hollow in one of the cut surfaces and placing the piece, cut end down, on the soil about the plant. The tender raw potato appeals to the appetites of the pests about which they gather, when they can be caught and killed.

FASHIONS BY MAY MANTON.

Our large Fashion Book—containing 92 pages illustrating over 700 of the season's latest styles, and devoting several pages to embroidery designs, will be sent to any address on receipt of 10 cents.



No. 7666—Girl's side plaited sailor dress, 8 to 12 years. With body and skirt in one, round or square collar, long or short sleeves; 2½ yds. 36 in. wide with ¾ yd. 27 in. wide for collar and shield, 5 yds. of braid is needed for 10-year size.

No. 7662—Girl's apron with yoke back, 4 to 8 years. With high or square neck, long or short sleeves, with or without pockets and sash ends; 2½ yds. 36 in. wide is needed for 6-year size.

No. 7658—One button semi-princess dress, 34 to 44 bust. With five-gored skirt and over-lapping fronts that may be closed at either side; 5½ yds. 36 in. wide, with ¾ yd. 27 in. wide for trimming, is needed for medium size.

No. 6838—Boy's blouse suit, 2 to 6 years; 2½ yds. 36 in. wide, with ¾ yd. of contrasting material any width if belt is seamed at center back, 1¼ yds. without seam is needed for 4-year size.

No. 7472—Boy's suit, 2 to 8 years; 3¼ yds. 36 in. wide, ½ yd. 27 in. wide for collar, 4 yds. of braid is needed for 6-year size.

The above patterns will be mailed to any address by the Fashion Department of the Michigan Farmer on receipt of ten cents for each.

The Kitchen Sink Needs



The sink, the taps, the kitchen cutlery, the cooking utensils, the floors and the woodwork—all need Old Dutch Cleanser, if you wish them kept spotless and hygienically clean. Old Dutch Cleanser routs out the grease, grime, water stains and rust in a jiffy. Does it without a fuss or a muss. Does it economically—a little goes a long way. Keeps the hands soft and white—free from kitchen stains.

Many uses and full directions on large Sifter Can—10c.

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Install a NEW PERFECTION Oil Cook-Stove, Madam, and immediately transform your kitchen into a City Kitchen, with all the convenience and efficiency afforded by gasoline or gas but with one-third to one-half less expense. The handy Cabinet Shelf makes it an all-the-year-round cook-stove.

New Perfection Wick Blue Flame Oil Cook-stove

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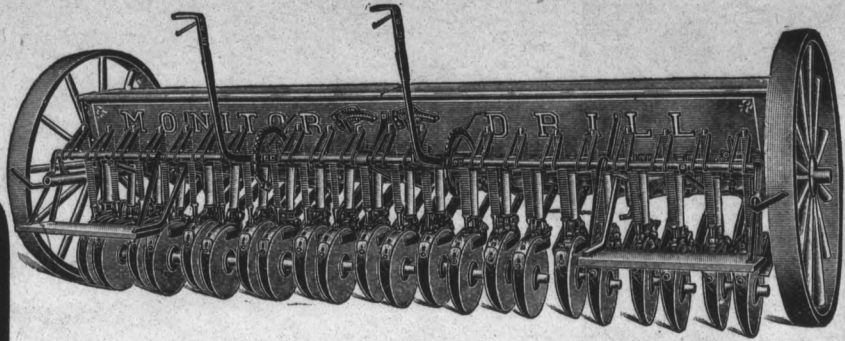
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THE MONITOR WAY IS THE ONLY RIGHT WAY

It deposits the seed on the downward turn of the disc—at the bottom of the furrow—in two rows, one inch apart and covers it with moist soil and not dry top earth as is done by other drills.

Owing to its uniform depth the seed all comes up at the same time—ripens evenly, insuring better grade—increased yield with less seed—it pays for itself.

The MONITOR DRILL cannot be clogged in any soil, mud, gumbo or in weedy or cornstalk ground, and its draft is one-third lighter than any other.

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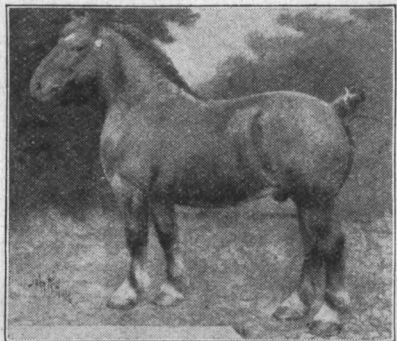


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TWO PERCHERON STUDS, CHEAP.

One imported 13-year-old, weighs 1800 lbs., in breeding condition. One registered five-year-old, weighing 2000 in show fit. Both horses are black with star. Sound, big boned and getters of big, uniform colts, registered in F. S. of A. J. C. Butler, Portland, Mich. Bell phone

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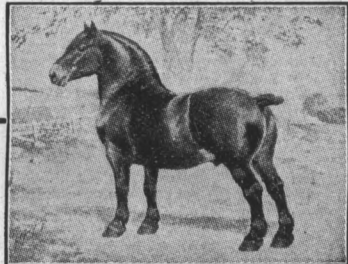
Sire Olbert. Sire of dam—Calypso. A black weighing 1800 lbs. Bred by the Michigan Agricultural College, and owned by

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We have given more than a quarter century to importing breeding and distribution of the Belgian horse. We handle no other breed and believe we have now in this new importation of stallions and mares a class of horses that will please you, and all are for sale at prices not equalled by anyone in the business when merit is considered. Will be pleased to have you ask about them and to visit us at any time.

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(Stallion Service Book, 10 cents.)

SOME fine young registered Clydesdale Stallions for sale from 1 to 4 years old. In the spring some will make ton horses with lots of quality and good action. Must be sold before the first of April. F. A. PETZ, Capac, Michigan.

Farm Commerce.

Possibilities of a Farmers' Packing House

By I. MOTES.

OUR present wasteful method of marketing farm products, necessitating a horde of middlemen, is really the farmers' fault, for by judicious co-operative selling they could weed out nine-tenths of the middlemen, get better prices for their stuff and enable consumers to live more cheaply. It is strange that farmers have neglected to unite for co-operative buying, shipping and selling, for to no other class is organization so necessary.

Ideal Conditions for Butchering.

Perhaps in no other commercial activity which farmers might engage would co-operation work so much to their advantage as in the conducting of small packing houses. There is no sense whatever in shipping cattle a thousand miles to slaughter them, and then perhaps ship some of them back in the form of dressed beef into the country where they were fed. Aside from the saving in expense, and aside from the matter of keeping the price of meat down to a reasonable figure for the consumer's benefit, thus enabling him to buy more meat, this co-operative butchering by farmers would give us better meat. Loading and shipping long trains of excited, feverish cattle hundreds of miles, during which they are tormented with thirst and with the rate at which they travel, as well as with the strangeness of the experience, then dumping them out of the cars at the stock yards into pens and perhaps chasing them from one pen to another, and finally crowding them wildly down a long chute where the butchers with murderous knives wait to take their lives, all has a tendency to injure the quality of the meat.

Every hunter knows that venison is sweeter and better if a deer is still-hunted and shot in the woods, than if it is shot in front of hounds after a hot chase which has thrown it into a fever of excitement. Not only does the venison still-hunted, taste better, but it keeps better, for when a deer has been chased by hounds a long time and then killed the temperature of its body has been raised so high that it requires but a short time for the meat to spoil when butchered in the woods, with no immediate means of icing it. Of course, beef is put in cold storage as soon as dressed, and there is no opportunity for it to spoil, but there is no doubt about the meat's being damaged by the feverish condition beef cattle have been thrown into by being shipped to market.

The ideal place to kill cattle and other food animals is on the farm where they were fattened. It is impracticable, of course, to have a packing house on every farm, but conditions under which all animals are to be killed should approximate those on a good farm. The animals should not be rendered frantic and feverish by long railway journeys. They should be raised and fattened within a short driving distance of the packing house, and they should be driven on foot to the slaughtering place and allowed to remain there in pastures or groves, and well fed a few days before they are killed. If all food animals were killed under these conditions our meats would taste better, and be better in every way. It would not take so much saltpeter and other preservatives to cure meat if animals were killed when they are in a normal condition.

Economy in Isolated Establishments.

Instead of having great packing houses in Chicago, St. Louis, Kansas City, Omaha, and other large cities, there should be small ones conducted by farmers' associations in every large town which has an ice factory. Meat could then be butchered much cheaper than at present, and the saving in freight would benefit both the seller of live stock and the consumer of meat, for a part of the saving in freight would go to the farmer in increased prices for his stock, and a part to the consumer by lowering the price of packing house products, while the railroads would do more business than now, in handling a larger quantity of it, for if meat were cheaper the people would be able to buy more.

A thickly settled community of well-to-do farmers surrounding a good-sized town could surely induce their merchants to establish an ice-factory if there was not one already in operation, the farmers taking part of the stock. This ice factory need not be near the business center. It could be located on the outskirts of town where insurance rates were low, and where land was cheap. There should of course be a cold storage plant near the ice factory. The beeves, calves, hogs and sheep could be killed on surrounding farms, if need be, within two or three miles of the warehouse then hurried to town and put in cold storage.

The farmers owning a controlling interest in the ice factory could dictate the price at which ice should be sold to them, and owning a controlling interest in the cold storage warehouse they could dictate the prices to be charged near-by farmers for dressed beeves or quarters, hogs, etc., kept in their vaults. These individual farmers could then kill a beef or hog at home whenever they wished, and put it in cold storage and use it for home consumption, or sell a part of it to local butchers, just as suited the requirements of the owner's family.

A Good Location.

Such an enterprise could be conducted successfully if established a mile or two in the country, for with good rock roads a haul of a mile or two with a load of ice or dressed beef would be a matter of no more moment than a drive of the same length along macadamized city streets. Certainly the ideal place for a slaughter house would be in the country a mile or two, with the ice factory and cold storage warehouse on that side of town. This would rid the town of the packing house odor, and it would be of great benefit to the farm on which it was located.

Perhaps nothing would build up a poor, run-down farm quicker than the establishment of feeding pens and a small slaughter house on it, for the refuse, waste matter in the carcasses of beeves and other animals could be turned back to the soil to its tremendous advantage. Dried blood is one of the finest fertilizers, being largely nitrogen. It is also fine as stock feed, so it might bring a price as stock feed which would make its use as fertilizer too expensive, but there would be waste matter which could be utilized in no other way, and this could be applied to the land.

It would pay any farmer with a good deal of cattle and some poor land, even though living near a packing house, to slaughter his cattle on his own place and then haul the dressed beef to the cold storage warehouse a mile or two away, rather than drive his cattle to the packing house and have them killed there. In the former case he would get the benefit of a large portion of refuse matter turned back to his soil, while at the same time he would be benefited by the nearness of the cold storage plant.

A Superior Product.

A small packing house of this kind could supply all the wants of local butchers, which would be of considerable volume in a town of 5,000 to 25,000 people, and it would be convenient for farmers killing an animal occasionally for home consumption. Such a packing house limiting its output to local needs and local offerings of cattle, etc., for butchering, could be run cheaply, and whether it slaughtered 50 cattle a day or a half-dozen, it would be a dividend paying institution.

In the butchering of hogs the small packing house and its near-by cold storage warehouse would be a great convenience to farmers and the local grocers and meat market men, for it would make possible the killing of hogs under about the same conditions as obtain now on the farms of intelligent hog raisers. Any man knows that country-cured hams, shoulders and bacon are better than the same grade of meat from present day packing houses. These packing house products are too heavy with saltpeter and other preservatives to please the good judge of meat. A middle-aged man cannot help

thinking that present day packing house products are not as good as they were 25 and 30 years ago. Some allowance must be made for a man's heartier appetite in his youthful days, but even taking this into account we cannot help thinking that more salt-peter is used now than 30 years ago, and that more brown sugar was used then than now. Who can forget sugar-cured bacon and hams he ate 30 years ago, when a boy or a young man? If such meat is cured now in the great packing houses it doesn't reach the average consumer.

The farmers' packing house could cure its bacon, hams, salt pork and other products of the hog more nearly like they are cured by the intelligent hog raiser on his farm in winter, and with a cold storage plant near by the killing could be done at any season. A farmer having a half-dozen or a dozen hogs could drive them to the near-by packing house and sell them, whereas now he must have a car load in order to ship to the packing house in the city.

With the small packing house close by a farmer could regulate the number of his hogs to the amount of his feed. If his supply of feed ran low in January he could sell off his largest and fattest hogs a dozen or so a week, thereby conserving his feed. If a farmers' association owned a cold storage warehouse the hog raiser with a limited amount of feed could put all the meat possible on his hogs by the first of January and then kill them and keep the bacon in storage until later in the winter.

It pays, where a farmer has plenty of home-grown feed, to carry his fattening hogs through until February or March, perhaps, before killing them or sending them to market, but if your feed is running short it might be better to force your hogs forward during November and December, when they can run in the corn and potato fields, orchard, pasture and other fields, and then kill them and keep the bacon for a fancy price in the spring, carrying nothing through February and March, except brood sows and boars. These early killings of medium-sized hogs make better, plumper, sweeter hams and thinner, more streaked breakfast bacon sides than the heavy meat killed later in the winter.

IMPROVING BUSINESS ETHICS.

How an improved standard of business ethics may be promoted in the public and private produce markets of the state and country, was brought to our attention by an incident occurring on the Detroit Eastern Market last Tuesday morning. An officer of the market attracted a crowd of interested producers as he made a careful measurement of a new type of crate that one of the producers was offering apples in. The crate measured less than a bushel, and while the owner apparently had purchased the crate, with others, innocently of the fact that they were not up to standard in holding capacity, he was prohibited from using them for the displaying of produce for sale on any of the public markets of Detroit. The officer kindly advised the farmer to return the crates to the manufacturer, requesting that crates of the proper size be given in exchange. What this particular man will do with the crates we are not aware; but the lesson to those who saw the incident and repetitions of like incidents before others, will impress upon the minds of sellers an anxiety not to be caught with short measures. And sooner or later this state of mind will be brought to the attention of manufacturers, who are constantly watchful to produce things that people wish to buy, and these manufacturers for business reasons will make and advertise their crates and measures to be standard—all of which, together with the better satisfaction and the appreciation of the buying public, must hasten the time when honest measure and honest weights will be quite universal.

ITEMS ON MARKETING FARM PRODUCTS.

Over 50 of the leading fruit growers of Mason county met at Ludington recently and discussed the need of a cannery in that city. Prospects are bright for establishing such a plant there.

Wish Protection Against American Fruit.

The Fruit Growers' Association of British Columbia has appealed to the Canadian parliament for protection against the competition of American fruit, asking that the tariff be raised from 15 cents a box to 20 cents, the latter being the tariff on Canadian fruit shipped into the United States. The western states have

found quite an outlet for much of their inferior fruit in the great Canadian north-west and have put considerable fruit that would not carry to the eastern states, into that territory. The British growers feel that they have a better right to the trade and have made the appeal to their government for a higher protected market.

Hope to Improve Marketing Conditions in St. Louis.

An organization has been affected by producers about the city of St. Louis, Mo., for the purpose of bettering conditions for the distribution of their products. They organized a marketing bureau by which they hoped to bring the producer in closer touch with the consumer. The preliminary formalities, together with the election of officers, were completed March 21.

Florida Dealers Have Finally Gotten Together.

At last the Florida citrus handlers who for a number of years have been waging an expensive competitive warfare, seem to have gotten together. Last week a meeting of the many interests was held at Tampa at which time a central bureau for the collection and dissemination of crop and market news, was established and a movement for the general advertising of Florida fruit, as well as for reducing the number of middlemen through whose hands the fruit must pass, was launched. By the latter move the members of the new association hope the purchaser may be given better service and the producer more money for his product. The members seem determined to make the bond of organization strong enough that the concern may stand the stress of severe opposition.

Butter Market Affected by Flood.

Quotations for butter run up to the sensational price of 43 cents in New York city during and immediately following the floods in the central states, but are now gradually settling back to its former level around 34 cents. The floods preventing shipments from the west, caused a temporary shortage and the inability of other eastern markets to get supplies from producing sections forced the demand here above what the local call would have mounted it. The incident had the advantage of cleaning up much inferior butter that remained in the hands of dealers. There is still a scarcity of good grades.

CROP AND MARKET NOTES.

Livingston Co., April 4.—The weather the later part of March and thus far in April has been very unfavorable for farmers. So much rain has prevented them from getting on the ground and very little has been accomplished. Recent heavy winds have done considerable damage to small buildings, orchards, etc. Wheat and new seedling has come through the winter in fine condition. Fat stock has been selling at almost prohibitive prices. Not much grain moving to market. Help will be very scarce this season. Farmers are offering the highest wages for good help.

Emmett Co., April 5.—Snow went about the middle of March; much rain during the last half of the month. Streams are swollen and fields flooded, with bad wash-outs in the roads, in many instances. Wheat and rye came through looking well, also clover seedlings. No farm work in progress, and it will be impossible to do anything in the way of fitting ground for crops for some time, even though there is no more rain.

Kalkaska Co., April 7.—Weather continues unfavorable for farm operations, freezing and thawing, with occasional flurries of snow, causing considerable damage to clover. Fall grain in a normal condition. Farm products not bringing satisfactory prices with the exception of meats and butter-fat. Stock in good condition, owing to an abundance of cheap feed and reductions in holdings.

New York.

Genesee Co., March 27.—Rain for nearly a week. Nearly all the cold weather came during February and March. A splendid quality of ice was obtained last month. On the whole, a very open winter. Physicians and veterinarians kept busy. Grain looks very good, considering that it had only a few weeks of protection during the winter. Auction sales plentiful. All kinds of live stock selling very high. Farms not changing hands much now. Land in most cases is being held much above actual value. Prices of produce uncertain. Many farmers not making good. Following are the prices offered by dealers, not the retail prices: Butter, dairy, 26¢/28¢; butter, creamery, 37¢; pork, dressed, 10¢; pork, live, 7½¢; eggs, fresh, 18¢/20¢; chickens, live, 15¢ per lb; turkeys, live, 20¢ per lb; ducks, live, 18¢ per lb; lambs, dressed, 14¢; wheat, \$1; oats, 40¢; potatoes, 45¢; beans pea, \$1.90 per bu; beans, medium, \$1.90; beans, red kidneys, \$1.95; beans, red marrow, \$2.05; hay, timothy, choice, on track \$17.50; No. 1 clover mixed, \$12.50; 13; oat and wheat straw, \$9.50; fat steers, \$7.25; fat cows, \$6.75; choice fat heifers, \$7.25.

You should read in next week's issue of The Farmer a suggestive article relating how a community of farmers' successfully conducted a co-operative laundry.

FOR SALE—Black Percheron Stallion Brigadier Reg. No. 2352. Foaled 1897 wt. 1600 lbs., will take good work in part payment of a bargain if taken soon. WM. BIRD, St. Johns, Michigan.

Married Man—with one or more sons to work on dairy farm. All temperate. Steady employment. GEO. STRONG, South Rockwood, Michigan.

BREEDERS' DIRECTORY.

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For Sale—Horses, cattle, sheep, swine and poultry, nearly all breeds. Sires exchanged. South West Michigan Pedigreed Stock Ass'n., David Woodman, Sec'y-Treas., Paw Paw, Mich.

Aberdeen-Angus.

Herd, consisting of Trojan Eras, Blackbirds and Prides, only, is headed by Egerton W. the GRAND CHAMPION bull at the State, West Michigan and Bay City Fairs of 1912 and the sire of winners at these Fairs and at THE INTERNATIONAL, Chicago, of 1912. WOODCOTE STOCK FARM, Ionia, Mich.

AYRSHIRES—One of foremost dairy breeds: young bulls and bull calves for sale. Berkshire swine. All pure bred. Michigan School for Deaf, Flint, Mich.

GUERNSEY BULL CALVES, YORKSHIRE PIGS. Good Stock.

HICKS GUERNSEY FARM, Saginaw, W. S., Mich.

10 Reg. Guernsey Bulls, ready for service. Large Yorkshire hogs, the best yet. Come or write. JOHN EBELS, R. 10, Holland, Mich.

HEREFORD BULLS FOR SALE Also Poland China Hogs. ALLEN BROS., Paw Paw, Michigan.

HATCH HERD HOLSTEINS—Choice sires from ARO dams. Reasonable prices. HATCH HERD, Ypsilanti, Michigan.

CHOICE Bull Calves from A. R. O. dams. Sired by our herd sires whose dam and sire's dam each made over 30 lbs. in 7 days. E. R. CORNELL, Howell, Mich.

A FEW CHOICE Holstein Friesian Bull Calves for Sale. A. R. O. Stock. GREGORY & BORDEN, Howell, Michigan.

FOR SALE—HOLSTEIN BULL CALF Born June 5, 1912, sire a son of the King of the Pontiacs from a daughter of Hengervold De Kol. Dam of calf, an A. R. O. daughter of Saddle Vale Concordia Paul DeKol, her dam a 20 lb. imported cow. ED. S. LEWIS, Marshall, Mich.

Purebred Registered HOLSTEIN CATTLE The Greatest Dairy Breed Send for FREE Illustrated Booklets Holstein-Friesian, Assn., Box 164, Brattleboro, Vt.

"Top-Notch" Holsteins. Yearling bulls all sold. Choice bull calves from 2 to 7 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices. McPHERSON FARMS CO., Howell, Michigan.

Service Bulls and Bull Calves

Sired by Johanna Concordia Champion, whose sire's dam and dam's dam average 34.06 lbs. butter in 7 days, average fat 4.67%. Also cows and heifers bred to him. I can offer you bulls at bargain prices. Try me and see, and do it quick. L. E. CONNELL, Fayette, Ohio.

Bigelow's Holstein Farms

Breedsville, Mich. Have for sale several fine young bulls out of cows with high official butter and milk records. Send for circular.

FAIR LAWN FARM

Offers the following young **Holstein Friesian Bull Prince Sarcastic**—Fine in form and breeding. Beautifully marked. Sure to please you.

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LONG BEACH FARMS, HOLSTEIN BULL CALVES

WORLD RECORD STOCK, from \$75 to \$250 Augusta, (Kalamazoo Co.) Mich., F. S. Kenfield, Prop.

HOLSTEIN BULLS—well bred, at reasonable prices. H-Barred Rock Chickens from 15 years breeding. Good layers eggs 15 for \$1. W. B. Jones, Oak Grove, Mich.

REGISTERED HOLSTEIN HEIFER CALF two weeks old, dark markings, very nice extra good breeding, one hundred dollars delivered at your express office, write for pedigree. Hobart W. Fay, Mason, Mich.

THREE FINE REG. HOLSTEIN HEIFERS for sale, bred June. Nicely marked and from very choice stock. Will take four hundred dollars for the three. They are coming two years old. J. B. Steere, Stanton, Mich.

BULL CALVES

Offered by YPSILAND FARMS, Ypsilanti, Mich. Home of Milk and Butter State Champions.

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

FOR SALE, CHEAP—Choice Jersey Bull calf born Oct. 5th, 1912. A nice, growthy fellow from a dam producing over 500 lbs. butter in 9 months. C. S. BASSETT, Kalamazoo, Mich.

For Sale—Registered Jersey Cattle, tuberculin tested; ed. bulls and bull calves; heifer and heifer calves; cows with Register of Merit and Cow Testing Association records. IRVIN FOX, Allegan, Mich.

Lillie Farmstead Jerseys (Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

Jerseys—Bulls ready for service, bred for production. Also cows and heifers Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

Dairy Bred Shorthorns—No stock for sale at present. J. B. HUMMEL, Mason, Michigan.

Dairy Shorthorns—Large Cattle—Heavy Milkers. Milk Records of all cows kept. No stock for sale at present. W. W. KNAPP, R. No. 4, Watervliet, Mich.

Scotch Shorthorn Bulls and Heifers For Sale. W. W. KNAPP, Howell, Michigan.

SHEEP.

7 REGISTERED HAMPSHIRE 1 fine Ram, 3 Ewes & 3 Lambs, all for \$50 C. D. WOODBURY, Lansing, Mich.

Loicesters—Yearling and ram lambs from Champion flock of Thumb of Mich. Also select Berkshire swine. Elmhurst Stock Farm, Almont, Mich.

"OXFORDOWN SHEEP"—Descriptive and illustrated article sent free. PARSONS, "The Sheep Man of the East," R. No. 1, GRAND LEDGE, MICH.

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2½ miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. COOK.

SHROPSHIRE & DUROCS KOPE-KON FARM, Kinderhook, Michigan

HOGS.

Durocs & Victorias—A Desirable Bunch of Sows of Either Breed for the April and May M. T. Story, R. R. 48 Lowell, Mich. City Phone 55.

Quick Maturing Berkshires—Best breeding; best type. Satisfaction guaranteed or money refunded. C. S. BARTLETT, Pontiac, Mich.

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O. I. C.
SOW WEIGHED 932 LBS.
AT 23 MONTHS OLD
IONIA GIRL

I have started more breeders on the road to success than any man living. I have the largest and finest herd in the U. S. Every one an early developer, ready for the market at six months old. I want to place one hog in each community to advertise my herd. Write for my plan. "How to Make Money from Hogs." G. S. BENJAMIN, R. No. 10 Portland, Mich.

O. I. C. SWINE Write me for price on Spring Pigs, pairs and trios, not akin. Have a number of service males of good type. Write me describing of your wants. A. J. GORDEN, R. No. 2 Dor, Mich.

O. I. C. Extra choice bred gilts, service boars and spring pigs, not akin from State Fair winners. Avondale Stock Farm, Wayne, Mich.

O. I. C's—all sold. Orders booked for April and May pigs of the choicest breeding. C. J. THOMPSON, Rockford, Michigan

O. I. C's—All sold, will book orders for March pigs. ALBERT NEWMAN, Marlette, Michigan

O. I. C's—Bred sows, March pigs pairs and trios. Buff Rock Eggs \$50.15. FRED NICKEL R. 1, Monroe, Michigan.

O. I. C.—Boars all sold. A few gilts of extra quality, bred or open. GEO. P. ANDREWS, Dansville, Ingham Co., Mich.

O. I. C's—All ages, growthy and large. Males on young stock. H. H. JUMP, Munith, Mich.

O. I. C.—1 extra quality last March gilt Wt. 385 lbs. due to farrow April 14th, price \$125. Bred to Scott No. 1, Grand Champion. If interested write, Otto B. Schulze, ½ mile west of depot, Nashville, Mich.

DUROC-JERSEYS—Fall and Spring boars from prize-winning strains. Sows all ages. SPECIAL BARGAIN in summer pigs. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

MALES ALL SOLD BUT ONE—Fancy fall gilts for sale. JOHN MCNICOLL, Station A, Bay City, Mich. Route 4, Box 81.

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POLAND CHINAS—Both Western and Home Bred. Either sex, all ages. Prices right. W. J. HAGELSHAW, Augusta, Mich.

Large Type P. C.—Largest in Michigan. Bred gilts all sold, have some good Sept. and Oct. pigs that have size, bone and quality. Write your wants or come and see. Expenses paid if not as represented. Free delivery. W. E. Livingston, Parma, Mich.

BIG TYPE POLAND CHINA BOAR—Cheap or will exchange for sow. A few light weight gilts left. ROBERT NEVE, Flersom, Michigan.

POLAND CHINAS—Either sex, all ages. Something good at a low price. P. D. LONG, R. No. 8, Grand Rapids, Michigan.

P. C. BOARS AND SOWS—large type, sired by Expansion. A. A. WOOD & SON, Saline, Michigan.

LARGE Yorkshires—Choice breeding stock, all ages, not akin, from State Fair prize-winners. Pedigrees furnished. W. C. COOK, R. 42 Box 22, Ada, Mich.

Stop Raising Short Bodied Pigs—long ones weigh more, Yorkshire boars produce these. For sale. WATERMAN & WATERMAN, Ann Arbor, Mich., Meadowland Farm.

Yorkshire Swine—Aug. farrowed gilts for sale. Weanling pigs ready May 1st, akin to Champion York and 2nd best carcass at I. L. S. Breeders' Swine Show at E. Lansing, Jan. 1913. GEO. McMULLEN, Grand Ledge, Michigan.

Lillie Farmstead YORKSHIRES Spring bred gilts all sold. Gilts bred for next August farrow. September pigs either sex, pairs and trios not akin. Orders booked for spring pigs. COLON C. LILLIE, Coopersville, Mich.

Mention the Michigan Farmer when writing to advertisers.

Markets.

GRAINS AND SEEDS.

April 9, 1913.

Wheat.—Cash wheat and May developed strength the past week and the average prices ruled 3c above those for the previous week. The advance was gradual, reaching its highest point on Monday, following which a slight reaction occurred, due to the government crop report which placed the growing crop of the United States at 11 points above the crop conditions for the same time in 1912. Among the considerations operating to produce higher values was the arrival of the period of greatest danger to the growing crop, not only from unfavorable weather, but also from insect pests. There is some talk already of the appearance of the chinch bugs in Kansas and other western states. More or less acreage will also be abandoned because of winter killing and the recent floods. The position of the cash deal has shown some improvement and in the northwestern states the movement of grain from the farms to primary elevators has fallen off considerably and foreign markets continue to show strength. One year ago the price for No. 2 red wheat was \$1.01½ per bu. Detroit quotations for the past week are:

	No. 2	No. 1		
	Red.	White.	May.	July.
Thursday	1.09	1.08	1.09½	93½
Friday	1.10	1.09	1.10½	94
Saturday	1.10½	1.09½	1.10½	94
Monday	1.12	1.11	1.12	94½
Tuesday	1.11½	1.10½	1.11½	93½
Wednesday	1.12	1.11	1.12	94½

Chicago, (April 8).—No. 2 red wheat, \$1.04@1.08; May, 92c; July, 90½c per bu. New York, (April 8).—No. 2 red, \$1.13 f. o. b. afloat; May, 99c; July, 87½c per bu.

Corn.—Prices improved here in harmony with those of wheat. Wet weather continues to prevail over a large portion of the corn belt and roads are in bad shape so that farmers are unable to deliver corn in any quantity. The stocks in country elevators have, as a result, been largely reduced. Primary receipts Monday amounted to 446,000 bu. One year ago No. 3 corn was selling at 76½c per bu. on the local market. Detroit quotations for the past week are as follows:

	No. 3	No. 3		
	Corn.	Yellow.		
Thursday	54	55		
Friday	53½	54½		
Saturday	54½	55½		
Monday	54½	55½		
Tuesday	55	56		
Wednesday	55½	56½		

Chicago, (April 8).—No. 2 corn, 56@56½c; No. 2 yellow, 56@57c; May, 55½c; July, 56c per bu.

Oats.—This deal advanced with wheat and corn. There has been fairly liberal selling of oats in some of the larger markets. Reports from France show the condition of the winter oat crop there to be substantially the same as a year ago. One year ago the local price for standard oats was 60½c per bu. Detroit quotations for the past week are as follows:

	Standard.	White.		
Thursday	37½	36½		
Friday	37½	36½		
Saturday	37½	36½		
Monday	37½	36½		
Tuesday	38	37		
Wednesday	38	37		

Chicago, (April 8).—No. 2 white, 37@37½c; standard, 36@36½c; May, 35½c; July, 34½c per bu.

Beans.—Beans lost the 5c advance made a week ago, during the past week but regained this loss again on Tuesday. Trading is not active. Beans were selling on the local market a year ago at \$2.42 per bu. Immediate and prompt shipment are now quoted at \$1.95; May, \$2 per bu.

Chicago, (April 8).—No change has occurred in bean quotations at this point. The market is slow. Pea beans, hand-picked, fancy, quoted at \$2.20@2.25; do. choice, \$2.05@2.10; prime, \$1.80@1.85; red kidneys, \$1.75@2.25; white kidneys, \$2.60@2.75 per bu.

Clover Seed.—The past week has been a really active one in the clover seed deal, and because of the lively demand prices have gone up over a dollar for common seed. Alsike shows an advance of only 25c per bu. Cash seed is now quoted at \$13.25 and prime alsike at \$12.75 per bu.

Toledo, (April 8).—Common seed shows a substantial advance in price, cash being exchanged at \$13.70 per bu. and April at \$13.50; prime alsike, cash, \$12.50 per bu.

Timothy Seed.—This deal is unchanged with trade moderately active. Prime spot sold Tuesday at \$1.70 per bu.

Toledo, (April 8).—Cash timothy seed rules a little lower than last week, now being quoted at \$1.70 per bu; Sept., \$1.95 per bu.

Rye.—This cereal rules a fraction higher than last week. The government crop report indicates the condition of the growing crop for the first of April to be but one-half point above the condition on the first of April, 1912. No. 2 rye is now quoted at 60½c per bu.

Chicago, (April 8).—No change in quotations; No. 2 rye, 60½@61c per bu.

Barley.—Chicago, (April 8).—Quotations for this grain range from 46@68c per bu., the highest figure being 3c above the top limit for last week.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ¼ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.60; second, \$5.20; straight, \$4.90; spring patent, \$5.10; rye flour, \$4.60 per bbl.

Feed.—Detroit jobbing prices in 100-lb. sacks are as follows: Bran, \$23; coarse middlings, \$23; fine middlings, \$27; cracked corn, \$22.50; coarse corn meal, \$22.50; corn and oat chop, \$22 per ton.

Hay.—Poor roads have reduced offerings and prices are improved with the demand fair. Carlots on track at Detroit are: No. 1 timothy, \$14@14.50; No. 2, \$11.50@12.50; light mixed, \$13@13.50; No. 1 mixed, \$11@12.50 per ton.

Chicago.—Market higher, largely due to cutting off of deliveries. Choice timothy \$18@18.50 per ton; No. 1, \$15.50@16.50; No. 2 and No. 1 mixed, \$14@15; No. 3 and No. 2 mixed, \$10@11; clover, \$5.50@10.50; alfalfa, choice, \$17@18; do. No. 1, \$15@16 per ton.

Straw.—Steady. Carlot prices on wheat and oat straw on Detroit market are \$8.50 per ton; rye straw, \$8@10 per ton.

Chicago.—Higher. Rye, \$8.50@9.50; wheat straw, \$6@6.50; oat straw, \$6.50@7 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—The expected decline in values began early this week and the drop was sharper than had been anticipated, Elgin showing a loss of 3c. All markets were affected, but as stocks were cleaned up readily at the lower range a rallying tendency soon asserted itself. Locally, all grades of creamery are 3c lower but other kinds are unchanged. Detroit jobbing prices rule as follows: Fancy creamery, 33c per lb; firsts, 31½c; dairy, 24c; packing stock, 22c.

Elgin.—Market firm at 32c.

Chicago.—In this market all kinds are quoted lower, and dealers' anxiety to meet the views of buyers is due to the fact that a considerable proportion of the offerings are unsatisfactory as to quality. Feeling is steadier, however, than earlier in the week. Quotations are: Extra creamery, 34c; extra firsts, 33@33½c; firsts, 31@32c; seconds, 29@30c; dairy extras, 32c; firsts, 28c; seconds, 25c; packing stock, 12@24½c as to quality.

New York.—This market came back strong after Monday's drop, and is now firm at a good advance over last week's figures. Quotations are: Creamery extras, 37c; firsts, 35½@36½c; seconds, 34@35c; state dairy, good to prime, 32@34c; common to fair, 27@31c; packing, 20@24c as to quality.

Eggs.—Everywhere eggs appear to be in a stronger position than a week ago, due to continued good demand for immediate consumption and to the disposition of buyers to store surplus offerings. Locally prices have improved slightly during the week. At Detroit current offerings, candled, and cases included, are quoted at 18c per dozen.

Chicago.—This market is very firm despite increasing receipts. All grades are fractionally higher and fresh gathered stocks, packed for storage, are in good demand. Miscellaneous receipts, cases included, are quoted at 17@17½c; do., cases returned, 16½@17½c; ordinary firsts, 16½@17c; firsts, 17½@17½c; storage packed, firsts, 18½c.

New York.—Firm; values practically unchanged. Fresh gathered extras, 20½@21c; firsts, 19½@20c; fresh gathered, storage packed, firsts, 19½@20c; western gathered, whites, 19@21c.

Poultry.—Receipts limited and feeling firm in all markets. Locally there has been no change from the extreme values which ruled last week. Quotations are: Live.—Spring chickens, 17½@18c; hens, 17½@18c; No. 2 hens, 15c; old roosters, 12c; turkeys, 19@20c; geese, 15@15½c; ducks, 18@20c per lb.

Chicago.—Last week's advance on fowls and spring chickens did not hold. Demand sufficient to absorb all offerings at steady prices. The quotations on live are: Turkeys, good weight, 15c; others, 10c; fowls, good, 17c; spring chickens, 17c; ducks, large, fat, 18c; do., thin, ordinary, 15@16c; geese, full feathered, 12c; do., plucked, 8@10c per lb; guinea hens, \$4 per dozen.

Cheese.—All kinds lower. Wholesale lots, Michigan flats, new, 13½@14c; old, 16½@17c; New York flats, new, 16@16½c; old, 18@18½c; brick cream, 14@14½c; Limburger, 18@19c.

Veal.—Detroit.—Prices recovering from a marked drop late last week, due to an oversupply. Fancy, 13@14c; common, 11@12c.

Chicago.—Market improving, a slump late last week having placed values on a materially lower level. Fair to choice, 80@110 lbs., 11@12c; extra fancy stock, 12½@13c; fair to good chunky, 10½@11½c.

WOOL.

Boston.—There is very little to say regarding the wool market due to the fact that dealers here are winding up the season to get their bins ready for the new clip. Thus far little attention has been given to the 1913 product, presumably because future conditions of the market are more uncertain than ordinary and also because farmers are holding their crop at a good figure. Sales from the stores here were small this past week, most of them being remnants. Prices were about steady with former values. At the English auctions at London sales were active and the offerings sold readily at steady prices for most grades.

FRUITS AND VEGETABLES.

Apples.—Trade is improving at last week's values. Detroit quotations now are: Fancy, per bbl., \$2.50@3.50; ordinary, 75c@1.50 per bbl.

Chicago.—Fancy grades are steady while lower kinds are sold at buyers' prices. Standard winter varieties, \$2@4.50 per bbl.

Potatoes.—With a majority of the large markets showing an improvement in the potato deal last week, the local market took on a little better spirit but since a weaker tone developed from an increase of supplies. Values remain unchanged. Michigan stock in car lots, 43@45c per bushel.

Chicago.—Although better conditions prevailed last week, heavy supplies Monday depressed the trade and brought lower values. Fancy Michigan stock, 43@45c per bu; best Wisconsin, 40@45c; Minnesota, 43@45c.

New York.—Plentiful and easy. Western stock, \$1.85@2 per 180-lb. bag.

DETROIT RETAIL PRICES.

Detroit Eastern Market.—In most lines this market was as satisfactory as it has been for some time past. The amount of produce was well up to the average volume for the season and prices are fair. Apples are ruling a little higher with the best grades being sold at around \$1.25 per bu. and from there down to 50c. Potatoes are steady at 55c for good quality. Cabbage is plentiful at 20c per bu. Other quotations: Carrots, 25c; parsnips, 25c; celery root, 40c; turnips (small), 40@50c; rhubarb, 25@35c per bunch. Loose hay is selling slowly at \$16@18 per ton.

Grand Rapids.

The annual report of the city market superintendent shows total receipts for the past year were nearly \$9,000, a gain over the previous year despite bad weather and light crops, of \$378. The market will reopen April 15, many stalls already having been taken. Dairy butter is 1c lower this week. The egg market is steady owing to the large demand for storage purposes. No. 2 red wheat is worth \$1.04; oats, 36c; corn, 55c; beans, \$1.50. Potatoes are in better demand, though prices are not much higher, ranging from 30@35c. Hay is steady at \$10@13 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

April 7, 1913.

(Special Report of Dunning & Stevens, New York Central Stock Yards, East Buffalo, New York.)

Receipts of stock here today as follows: Cattle, 140 cars; hogs, 100 double decks; sheep and lambs, 75 double decks; calves 1,600 head.

With 140 loads of cattle on our market here today, and 28,000 reported in Chicago, we have to report an active cattle market at strong 10@15c per cwt. higher on all good grades than last Monday. Everything well cleaned up at the finish.

We quote: Best 1350 to 1500-lb. steers, \$8.80@9.15; good prime 1200 to 1300-lb. do., \$8.75@8.85; good to prime 1100 to 1200-lb. do., \$8.25@8.50; coarse, plainish, 1100 to 1200-lb. do., \$7.25@7.85; medium butcher steers, 1000 to 1100, \$7.25@8; light do., \$6.75@7.25; best fat cows, \$6.50@7.25; butcher cows, \$5.25@6; light do., \$4.50@5; trimmers, \$3.75@4; best fat heifers, \$7.75@8.50; medium butcher heifers, \$6.75@7; light do., \$6@6.40; stock heifers, \$5.25@5.50; best feeding steers, dehorned \$7.25@7.50; fair to good do., \$6.75@7; prime export bulls, \$7.25@7.50; best butcher bulls, \$6.75@7.25; bologna bulls, \$5.75@6.50; stock bulls, \$5@5.50; best milkers and springers, \$6.50@8; common to fair kind do., \$4@5.

We had a liberal supply of hogs today, footing up 100 double decks. Fair receipts at all western markets, and with just a limited demand here, market was but little changed from the close of last week. Packers did not pay over \$9.50 for anything, while shippers bought their light grades at \$9.50@9.55; pig weights up to \$9.60; roughs, \$8.25@8.50; stags, \$7.50@8. Trade closed rather quiet and about 25 double decks going over unsold, mostly on hold orders. Our market about in line with other points, still it will be a hard fight with the number of holdovers to get much reaction for a few days.

The sheep and lamb market was active today; prices about steady with the close of last week. Most of the choice lambs selling from \$9.40@9.50; heavy lambs, \$8.60@8.75. Look for about steady prices the balance of the week.

We quote: Choice lambs, \$9.40@9.50; cull to fair do., \$7.50@9.25; yearling wethers, \$8.50@8.75; yearling ewes, \$7.50@8; wethers, \$7.50@7.75; handy ewes, \$7.25@7.50; heavy ewes, \$7@7.25; cull sheep, \$3.50@5.50; bucks, \$4@5.25; veals, choice to extra, \$10@10.50; fair to good, \$6@9.50; heavy calves, \$4.50@6.

Chicago.

April 7, 1913.

Cattle. Hogs, Sheep.
Received today23,000 40,000 20,000
Same day last year..18,973 41,879 19,107
Received last week..39,651 167,803 82,316
Same week last year..40,880 104,135 88,777

Cattle opened very slow this week, with too liberal a supply for Monday, and prices were off 10c generally, some lots looking 15c lower. Today's hog market was a lively one, prices being a dime higher for the best light weights, with heavy hogs showing less advance. Hogs sold at \$8.70@9.40. The average weight of hogs marketed last week was 241 lbs., compared to 232 lbs. a month ago, 221 lbs. a year ago, 237 lbs. two years ago and 226 lbs. three years ago. Sheep and lambs were in strong demand at firmer prices, and it was thought that before the day closed some prime offerings might sell higher.

Cattle have been received in such small numbers in recent weeks that slaughterers last week took hold much better than usual, competing with each other for fair supplies, and prices pursued an upward

course, nearly all kinds sharing in the advance of 25c or more. A large share of the beef steers crossed the scales at \$8@8.80, with choice to fancy heavy beefs bringing \$8.80@9.20, while the commoner class of light steers went at \$7.25@8, with good to prime yearlings taken at \$8.40@8.85. There was the customary strong demand for fat female cattle, with sales of butchering cows and heifers at \$5.10@8.50, while cutters brought \$4.50@5, canners \$3.50@4.45 and bulls \$5.50@7.60. There were good buying orders on the market for stockers and feeders, but many of them went over unfilled, as the limited offerings resulted in putting values higher than most country buyers were willing to pay. With feeders of much weight bringing from \$7.30@8.25 and stockers held at \$6.50@8 for inferior to prime offerings, many stockmen regard prices for desirable stock as altogether too high, and most of them do not feel like stocking up with an inferior class of cattle. Stock feeding heifers are wanted, and a good many would be purchased but for the limited numbers offered, prices ranging from \$5.60@6.60. Calves were marketed much less liberally than a year ago and sold much higher than in most former years, although much lower than a short time ago, coarse heavy to prime light vealers fetching \$4.75@9.25, with late sales at \$8.75 for the best. Milk-ers and springers had a very limited demand at \$5.00@85 per head for ordinary to choice cows, with inferior cows mostly sold for slaughtering. The prospects for the cattle market appear good for high prices, because of the unusually small number in feeding districts, but warm weather may be expected to check the call for heavy beefs.

Hogs keep on mounting higher and higher week by week, with frequent sharp advances in prices, the market being governed by the shortage in the country's supply at a period when hog meats are in unusually large demand on account of the extreme dearthness of beef and mutton. The insatiable requirements of the fresh pork trade absorb the greater part of the hogs, especially those of light and medium weights, and the result is that the packers are unable to increase their depleted stocks of lard and cured meats, this applying to all the western storage points. The official statement of Chicago stocks of provisions shows that they aggregated on April 1 only 112,178,312 lbs., compared with 113,213,939 lbs. one month earlier and 167,827,539 lbs. a year ago. Of course, reactions are inevitable from time to time, and sharp breaks last week followed the rise that carried prime light hogs to \$9.70, the highest point yet reached since the market began its upward course. The hogs of choice light weight suitable for closing up into fresh pork continue to go highest of all, with selected pigs of strong weight also bringing high values, while medium weight hogs sell next to those of light weight, with heavy packing lots lowest of all. As the week advanced prices broke fast because of the greatly increased receipts, many delayed consignments showing up, and Saturday's sales ranged at \$8.55@9.30 compared with \$8.85@9.40 a week earlier, pigs closing at \$6.75@9.10 and stags at \$9.15@9.40.

MICHIGAN CROP REPORT.

Wheat.—The condition of wheat on April 1 in the state was 82, in the southern counties 83, in the central counties 79, in the northern counties 80 and in the Upper Peninsula 94. The condition one year ago was 84 in the state, 79 in the southern counties, 88 in the central counties, 90 in the northern counties and 94 in the Upper Peninsula.

The average depth of snow on March 15 in the state was 2.97 inches, in the southern counties 1.22, in the central counties 1.28, in the northern counties 3.44 and in the Upper Peninsula 17.54 inches.

On March 31 the average depth of snow in the state was 0.91, in the southern counties 0.09, in the central counties 0.04, in the northern counties 0.07 of an inch and in the Upper Peninsula 10.19 inches.

The number of days protection to wheat by snow in the state was 11, in the southern counties 9, in the central counties 10, in the northern counties 13 and in the Upper Peninsula 27.

In answer to the question, "Has wheat during March suffered injury from any cause?" 113 correspondents in the southern counties answered "yes" and 110 "no," in the central counties 67 answered "yes" and 41 "no," in the northern counties 47 answered "yes" and 37 "no," and in the Upper Peninsula 3 answered "yes" and 14 "no."

The total number of bushels of wheat marketed by farmers in March at 77 flouring mills is 51,804 and at 87 elevators and grain dealers 28,528 or a total of 80,332 bushels. Of this amount, 54,732 bushels were marketed in the southern four tiers of counties, 16,805 in the central counties and 8,795 in the northern counties and Upper Peninsula. One hundred and twenty-five mills, elevators and grain dealers report no wheat marketed in March.

Rye.—The average condition of rye in the state is 87, in the southern counties 88, in the central and northern counties 85, and in the Upper Peninsula 95. One year ago the condition in the state was 89, in the southern counties 86, in the central counties 90, in the northern counties 92 and in the Upper Peninsula 94.

Meadows.—The average condition of meadows in the state, southern and central counties is 90, in the northern counties 87 and in the Upper Peninsula 96. The condition in the state one year ago was 87, in the southern counties 83, in the central counties 91, in the northern counties 93 and in the Upper Peninsula 94.

Live Stock.—The average condition of horses in the state is 96. Cattle, sheep and swine 95.

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 10, 1913.

Cattle.

Receipts, 1124. Market active and 15@25c higher than last week.

We quote: Best dry-fed steers, \$8.25 @ \$8.50; steers and heifers, 1000 to 1200, \$7.60 @ \$7.85; do. 800 to 1000, \$7.50 @ \$7.75; do. that are fat, 500 to 700, \$6.50 @ \$7.50; choice fat cows, \$6.50 @ \$7; good do., \$6 @ \$6.25; common do., \$4.50 @ \$5; canners, \$3.75 @ \$4.25; choice heavy bulls, \$7; fair to good bolognas, bulls, \$6 @ \$6.50; stock bulls, \$5.50 @ \$6; choice feeding steers, 800 to 1000, \$7 @ \$7.50; fair do, 800 to 1000, \$6.50 @ \$6.75; choice stockers, 500 to 700, \$6 @ \$6.75; fair do, 500 to 700, \$5.75 @ \$6.25; stock heifers, \$5 @ \$5.50; milkers, large, young, medium age, \$6 @ \$7; common milkers, \$3.50 @ \$5.

Bishop, B. & H. sold Sullivan P. Co. 1 cow weighing 900 at \$5.50, 3 do av 950 at \$5.50, 2 bulls av 835 at \$6, 2 steers av 945 at \$7.50, 23 do av 927 at \$7.25, 2 do av 840 at \$7.25, 2 bulls av 730 at \$6, 4 cows av 895 at \$6.75, 1 do weighing 1040 at \$5.50; to Newton B. Co. 12 steers av 727 at \$7, 12 do av 946 at \$7.20, 2 do av 885 at \$7.50, 2 do av 885 at \$7.50, 5 cows av 870 at \$5.75, 2 cow and bull av 950 at \$6.50, 1 cow weighing 1120 at \$6.75; to Thompson Bros. 4 canners av 850 at \$4, 4 cows av 782 at \$4.75, 2 do av 815 at \$4; to Mich. B. Co. 1 do weighing 1100 at \$6, 1 bull weighing 1910 at \$6.50; to Goose 1 cow weighing 1000 at \$4.50, 3 steers av 666 at \$6.90; to Austin 3 stockers av 460 at \$6, 1 bull weighing 550 at \$5.50; to Sullivan P. Co. 3 butchers av 640 at \$6.50, 1 cow weighing 1090 at \$5.50, 3 bulls av 1320 at \$6.50, 3 steers av 690 at \$7, 4 do av 962 at \$7.75; to Hammond, S. & Co. 3 cows av 937 at \$5.50, 26 cows av 1034 at \$6.35, 11 steers av 968 at \$7.65, 4 cows av 1080 at \$6.75; to Breitenbeck 7 do av 900 at \$5.50; to Thompson Bros. 2 cows av 1095 at \$6.50, 2 steers av 1000 at \$7.75, 13 do av 723 at \$7, 2 cows av 910 at \$4.20.

Spicer & R. sold Sullivan P. Co. 3 steers av 1057 at \$8, 1 cow weighing 820 at \$4.25, 3 cows av 993 at \$5.75, 2 heifers av 750 at \$7; to Newton B. Co. 22 steers av 725 at \$7; to Rattkowsky 4 do av 1130 at \$7.30; to Kull 5 cows av 1078 at \$5.50, 2 steers av 565 at \$6.50; to Hammond, S. & Co. 5 do av 828 at \$7.35, 2 cows av 1010 at \$6.35, 2 bulls av 825 at \$6.35; to Nagle P. Co. 13 steers av 1010 at \$7.90; to Hammond, S. & Co. 4 do av 795 at \$7.40; to Mich. B. Co. 15 do av 1092 at \$8, 5 do av 886 at \$7.75.

Roe Com. Co. sold Kamman B. Co. 16 steers av 896 at \$7.50, 10 cows and bulls av 1147 at \$6.65, 9 steers av 1086 at \$7.75, 1 do weighing 550 at \$6; to Hammond, S. & Co. 2 cows av 915 at \$4.60; to Parker, W. & Co. 23 steers av 1130 at \$8.25, 22 do av 935 at \$8; to Mich. B. Co. 19 do av 1079 at \$8; to Newton B. Co. 6 cows and bulls av 1060 at \$6.75, 7 cows av 914 at \$5, 12 do av 960 at \$6.75.

Haley & M. sold Thompson Bros. 2 steers av 660 at \$6; to Sullivan P. Co. 4 cows av 960 at \$6.25, 1 canner weighing 780 at \$4.25, 4 butchers av 570 at \$5.35, 2 cows av 930 at \$6.30, 1 do weighing 900 at \$5, 10 steers av 982 at \$7.45; to Mich. B. Co. 9 do av 861 at \$7.80, 1 do weighing 940 at \$7.25; to Nagle P. Co. 2 do av 1100 at \$7.85, 1 bull weighing 1150 at \$6.75; to Mich. B. Co. 12 butchers av 735 at \$7.10, 3 do av 830 at \$7.10, 6 steers av 708 at \$7, 19 do av 820 at \$7.50, 2 cows av 850 at \$5, 7 butchers av 750 at \$6.10, 11 do av 694 at \$7.35, 3 do av 577 at \$6.50, 2 cows av 925 at \$5, 2 canners av 785 at \$4.25, 1 bull weighing 940 at \$6; to Thompson Bros. 1 canner weighing 470 at \$4; to Sullivan P. Co. 4 cows av 955 at \$5.25, 2 cow and bull av 930 at \$6.50, 3 steers av 920 at \$7.50, 2 cows av 1120 at \$6.25, 8 do av 1045 at \$6.10, 2 do av 865 at \$5, 3 do av 987 at \$5.35, 4 steers av 820 at \$7, 3 cows av 943 at \$5.35, 2 canners av 770 at \$4, 1 steer weighing 890 at \$6.25; to Hammond, S. & Co. 3 butchers av 907 at \$6.50; to Kull 15 steers av 931 at \$7.65; to Mason B. Co. 6 do av 633 at \$6.50, 16 do av 817 at \$7.50, 1 do weighing 770 at \$6.75; to Sullivan P. Co. 5 heifers av 790 at \$6.50.

Glenn sold Mich. B. Co. 3 bulls av 1370 at \$6.50, 2 heifers av 855 at \$7.25, 2 cows av 1035 at \$6.25.

Lowenstein sold Hammond, S. & Co. 12 cows av 1097 at \$6.15.

Groff sold same 1 cow weighing 1250 at \$6.50, 1 bull weighing 1520 at \$6.50, 2 heifers av 760 at \$6.50, 4 butchers av 800 at \$5.50.

Weeks sold Parker, W. & Co. 2 cows av 890 at \$5.50, 10 butchers av 665 at \$6.70.

Veal Calves.

Receipts, 822. Market \$1 lower than last week; trade slow on common grades. Best, \$9.50 @ \$10; common, \$6.50 @ \$7.50; milch cows and springers strong.

Spicer & R. sold Parker, W. & Co. 1 weighing 190 at \$12; to Applebaum 2 av 125 at \$9, 3 av 120 at \$9.50, 1 weighing 130 at \$9, 2 av 120 at \$9.

Roe Com. Co. sold Rattkowsky 3 av 180 at \$6.50; to Nagle P. Co. 3 av 150 at \$10.

Haddrell sold Newton B. Co. 3 av 120 at \$9.

Glenn sold Mich. B. Co. 2 av 115 at \$9. Haley & M. sold Mich. B. Co. 1 weighing 330 at \$7, 12 av 135 at \$10.25; to Patrowsky 6 av 140 at \$10.25, 8 av 140 at \$10, 6 av 130 at \$8; to D. Goose 7 av

145 at \$10, 1 weighing 220 at \$6; to J. Goose 1 weighing 170 at \$6.50, 1 weighing 150 at \$10, 5 av 125 at \$10, 1 weighing 130 at \$6.50; to Mich. B. Co. 6 av 140 at \$10, 17 av 150 at \$8.50, 5 av 105 at \$8, 14 av 140 at \$10.25.

Bishop, B. & H. sold Applebaum 19 av 115 at \$9.25; to J. Goose 10 av 146 at \$9.50, 1 weighing 360 at \$6.50, 2 av 125 at \$10, 3 av 230 at \$5, 1 weighing 170 at \$8; to D. Goose 15 av 135 at \$9.50, 1 weighing 130 at \$10, 2 av 185 at \$10; to Nagle P. Co. 4 av 120 at \$8, 25 av 135 at \$10; to Sullivan P. Co. 14 av 130 at \$9; to Rattkowsky 2 av 140 at \$8, 3 av 150 at \$10; to Burnstine 8 av 150 at \$9.50, 8 av 140 at \$9.50, 4 av 105 at \$8, 18 av 135 at \$10; to McGuire 2 av 125 at \$9, 13 av 130 at \$9.50, 2 av 145 at \$10, 10 av 141 at \$10, 2 av 120 at \$8, 2 av 125 at \$8.

Sheep and Lambs.

Receipts, 1997. Market 25@35c higher than last week. Best lambs, \$9 @ \$9.25; fair to good lambs, \$8.50 @ \$9; light to common lambs, \$7 @ \$8.25; yearlings, \$8 @ \$8.50; fair clip sheep, \$6.50 @ \$7; clip culs and common, \$4.50 @ \$5.50; clip yearlings, \$8.

Bishop, B. & H. sold Swift & Co. 228 lambs av 82 at \$9.40; to Nagle P. Co. 604 do av 80 at \$9, 28 do av 70 at \$8.60; to Bray 112 do av 75 at \$8.75, 95 do av 80 at \$9.25, 36 do av 70 at \$8; to Sullivan P. Co. 9 do av 55 at \$8, 4 sheep av 90 at \$4.50, 15 lambs av 55 at \$6.25; to Parker, W. & Co. 25 sheep av 45 at \$7.10; to Mich. B. Co. 13 do av 77 at \$8.50; to Newton B. Co. 36 do av 76 at \$8; to Coetello 5 clip lambs av 47 at \$5; to Mich. B. Co. 1 buck weighing 130 at \$5.50, 2 lambs av 60 at \$7.50, 1 buck weighing 130 at \$5.50, 1 sheep weighing 170 at \$7.50, 25 lambs av 75 at \$9, 174 do av 80 at \$9.25, 1 sheep weighing 150 at \$6.50, 4 do av 130 at \$5, 87 do av 109 at \$7; to Sullivan P. Co. 15 lambs av 85 at \$9.25, 19 do av 50 at \$7; to Barlage 14 do av 70 at \$8.54.

Spicer & R. sold Sullivan P. Co. 37 lambs av 90 at \$9.

Haley & M. sold Patrowsky 1 sheep weighing 100 at \$6, 1 lamb weighing 90 at \$9, 9 do av 45 at \$7.

Jackson sold Parker, W. & Co. 6 sheep av 115 at \$4.50, 16 lambs av 110 at \$3.75.

Roe Com. Co. sold Mich. B. Co. 122 clip lambs av 75 at \$8.20; to Hayes 17 do av 65 at \$7.

Glenn sold Mich. B. Co. 59 lambs av 65 at \$8.50, 14 do av 55 at \$7.

Hogs.

Receipts, 3995. None sold up to noon; looks as follows:

Range of prices: Light to good butchers, \$9.25 @ \$9.30; pigs, \$9.35; mixed, \$9.25 @ \$9.30; stags one-third off.

Haley & M. sold Parker, W. & Co. 140 av 160 at \$9.30, 230 av 200 at \$9.25, 90 pigs av 145 at \$9.35.

Spicer & R. sold same 250 av 160 at \$9.30, 250 av 200 at \$9.25.

Bishop, B. & H. sold Hammond, S. & Co. 1010 av 200 at \$9.25, 510 av 150 at \$9.30.

Roe Com. Co. sold Sullivan P. Co. 10 av 205 at \$9.35, 125 av 190 at \$9.30, 200 av 200 at \$9.25.

Bishop, B. & H. sold Newton B. Co. 196 av 180 at \$9.25, 47 av 150 at \$9.30.

LIVE STOCK NOTES.

The Texas cattle feeders are depending largely on cottonseed meal and hulls for fattening their stock. Cotton is the main crop, with kafir corn grown, the soil being best fitted to the kafir variety.

Bologna bulls have been bringing in the Chicago market the highest prices on record, sales ranging at \$6.10 @ \$6.50 per 100 lbs., according to their grading, while fair to choice butcher bulls brought \$6.60 @ \$7 and even higher. Sausage material has been in urgent demand.

Feeding cows and heifers are having a good demand in the Chicago market, and many more than are offered could be disposed of quickly. The demand for breeding female stock of the better class is strong and constantly increasing, and some good shipments have been made recently to Ohio. Farmers are coming to the conclusion that the time to start in breeding beef cattle is here.

Hogs were never better rent payers than they are now, and many farmers regret that they are not better supplied. They have been headed upward for so many weeks that owners seem to think there is no limit to the rise in values, and there is danger that some will hold on too long. While it seems not at all unlikely that considerably higher prices will be seen later, the part of wisdom seems to be to market swine whenever they are ready to come, making them weigh at least 250 lbs. per head. Pigs and light hogs that are healthy and growing satisfactorily should be retained until well matured. They will undoubtedly return good profit for their keep and care. The country may be expected to remain greatly short of hogs for months to come, but well along in June there promises to be a considerable marketing of old sows that will help the packers to increase their land output considerably. Hogs have advanced now about \$2 per 100 lbs., and the corresponding rise in provisions tends to check consumption to a certain extent, but fresh pork is having an enormous sale. This creates a big call for the lighter hogs.

There is an unprecedented demand in the southwest for stocker cattle, and greatly inadequate offerings have put prices up to the highest level ever recorded, even thin old cows bringing prices never before dreamed of. Runty old Mexican cows have sold near El Paso recently at \$25 @ \$30 per head, and better ones are held for \$50 @ \$60. Texas cattle are greatly in demand for northern grazing and sell quickly from \$5 @ \$10 per head higher than a year ago. Several days ago a sale was made of 2,700 steers that were under two years of age at \$50 for delivery in June, and a Pennsylvania man has made a purchase of cattle aggregating in value \$1,400,000, which is spoken

of as the largest sale ever made in San Antonio. These cattle are intended for pasturing in the territory tributary to Kansas City, Omaha and Chicago, there being 18,000 yearlings costing \$30 per head and 20,000 two and three-year-olds. Everywhere farmers are restless, being deeply anxious to buy cattle to fatten, and by the time that the pastures are well started the demand will naturally become still greater. As has been the rule all along for many weeks, supplies of well-bred stocker and feeder cattle are greatly inadequate and sell so high that paying the extreme prices is regarded as dangerous by conservative stock feeders.

Reports from Idaho are that lambing has begun in some parts of the state, and flockmasters are having good luck with their lambs. Farmers are beginning to feed more sheep than heretofore, figuring that it pays much better to feed their alfalfa hay than to ship it out. The freight rate on hay has increased so much in recent years that less hay is shipped out of Idaho than formerly.

Conditions in the Chicago market for beef cattle are peculiar, the popular demand centering strongly on a medium class of cattle that do not come too high to suit the beef trade. High costing steers can be sold to only a limited extent, and they would not be selling anywhere near their present prices were it not for their extreme scarcity. The greater part of the beef steers now coming on the market are sold within a range of about 75c per 100 lbs., with cattle fed from 60 to 90 days dressing much better than in former years. This is accounted for by the great abundance and cheapness of corn and other feed and the unusual inducement afforded by the high prices for fat stock to make them good in quality. Venturesome stockmen are paying fancy prices for heavy feeders, with late sales as high as \$8 @ \$8.25, while finished beef cattle were selling around \$8.50 @ \$9.

There are powerful reasons for the boom in hogs, with the Chicago packers taking since January 1, about 200,000 fewer hogs than for the same period last year. Of late, each succeeding week it has been the highest hog market of the year. A good April rise in prices is expected. A fall in prices is the last thing hoped for concerning the future of the market.

So far as can be seen now, everything points to a good wool market, and firm prices for the clip seem certain. In the Boston market recent sales have been made of fleece at 24 @ 34c per pound, territory at 15 @ 26c; Texas, lots at 15 @ 24c and California at 14 @ 24c. Growers in Utah are reported as holding out for better terms, while shearing in Arizona is progressing, and sheepmen are asking 20 @ 21c for the clip, eastern buyers refusing to pay these figures. Reports from Glasgow state that there is a strong demand for wool at advanced prices, while the opening of the second series of auctions in London was at a further rise in prices that amounted to from 5 @ 6 per cent.

Clipped lambs are showing up in the markets in gradually increasing numbers and sell well, or otherwise, according to their weight, just as is the case with woolled stock, heavy weights being strongly discriminated against by buyers. Wool taken from Wyoming wethers has been sold in the Chicago market recently for 22c per pound, and several big clips of lamb wool have been sold at feeding stations near that city at the same price.

Veal is now classed as a luxury, with recent sales of prime light-weight live veal calves in the Chicago market as high as \$12 per 100 lbs. The calves hail from the dairy districts, and a 125-lb. vealer has been bringing as much as a Texas cow did 15 years ago. There was a large demand for choice veal for the Easter holiday trade, with not near enough offered to satisfy the demand. Throughout the western country farmers are saving their calves for the restoration of the beef cattle industry.

The west and southwest have more hay than they can use, and stockmen of Nebraska and Wyoming are long on hay and short on cattle. Where cattle are owned, hay feeding is being carried on extensively, but winter herds are the smallest ever known since the cattle industry became firmly established, and late reports say that contracts for spring delivery of stockers are only large enough to replace a fraction of the range supplies.

Sheepmen in the country around San Angelo, Texas, are counting on one of the largest lamb crops known during the three months beginning with the middle of March. It is stated that over 150 miles of wolf-proof fences have been constructed in that region this season, and stockmen throughout the Concho country are engaged in restocking their big ranges with both sheep and goats.

Sheep and lambs have continued to sell at much higher prices in the Chicago market than in other years, even after sharp breaks in prices for prime lambs from the highest figures of the season. Maintaining values for handy weight lambs, which are the great favorites with the slaughterers, is apt to be a difficult matter when the quotations climb to \$9 @ \$9.25 per 100 lbs., or even higher, even with the greatly inadequate offerings, and much of the time of late fat wethers, ewes and yearlings have shown firmness when lambs were on the down grade. This is partly attributable to the great preponderance of lambs in the offerings, but is largely due to the fact that the retail marketmen of the country have but a limited call for fancy cuts of lambs, because of the high prices they are compelled to ask, while their customers ask for mutton of good quality, which is offered at lower figures, although even mutton is away up over former years. Prior to Easter there was a

strong demand for prime lambs for the trade at that time, and owners had in many cases been holding their best flocks for that time. Since then there is no unusual demand, and so long as present high prices remain there will not be anywhere near a normal demand. However, most of the sheepmen are in comfortable financial circumstances and are not obliged to hurry up shipments, but take their own time and ship conservatively, taking caution against overstocking the market.

When his policy of buying hogs on a rising market was questioned by a bearish fellow packer, the late G. F. Swift once replied: "I never made a dollar on the hogs I didn't kill." For months the living packers in Chicago stood back and operated cautiously, trying to prove that the country had plenty of hogs back, but the opposite was the fact, and meanwhile eastern packers secured a liberal share of the hogs received in that big market. Meanwhile a short crop of spring pigs is expected, and considerable time will be necessary to bring back the hog supply of the country to its normal position. The country is shooting ahead wonderfully in population all the time, while it is raising less hogs than some years ago. Farmers should save every good brood sow and lose no time in raising hogs for the market.

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The Waterfall.

By Howard Dwight Smiley.

Mr. Bagley, ticket agent and telegraph operator for the P. D. & Q. railroad at Bingham, stepped out onto the station platform and gazed anxiously about.

The depot at that hour was deserted and Mr. Bagley walked to the end of the platform and peered up the street toward the village.

"Pshaw," he muttered to himself in a disappointed tone. "Just when something important comes up and I can't get away myself, there is never another soul within shouting distance."

A youthful whistle interrupted his soliloquy and he wheeled about to see approaching from the other direction a small boy who dragged his feet wearily through the dust of the road. The youngster, apparently obsessed by the heat and monotony of the day, seemed to be bravely trying to drive off the oppression by whistling a tuneless air.

"Hi there, Johnny," yelled Mr. Bagley. "Come here. I've got a job for you."

The boy paused, pushed back his straw hat and gazed at Mr. Bagley resentfully. "What do you want?" he demanded crossly.

"I want you to skedaddle down to the Eagle office and tell Pete Higgins to come down here right away. I'll give you five cents if you hurry."

"I'm on," answered Johnny promptly. "Give me the five cents first."

"There you are," said Mr. Bagley as he tossed out the coin. "Now go like Nancy Hanks, will you?"

Johnny at once proceeded to give a fair two-legged imitation of the famous mare by disappearing down the street in a small whirlwind of dust.

Ten minutes later Mr. Peter Higgins, owner and editor of the Bingham Weekly Eagle, arrived at the depot on his bicycle.

"What's the row this time?" he inquired, as he dismounted from his wheel on the shady side of the depot where Mr. Bagley was awaiting him.

"Of course, you understand that this is liable to cost me my job if it gets out," began the agent dubiously, "but being a citizen and taxpayer of Bingham and interested in the welfare and progress of the town, I felt called on to bring your attention to a very important, not to say deplorable, move about to be made by the predatory monied interests that are invading our little city."

"Any information imparted to me will be held in strictest confidence—at least, so far as anyone discovering the source of such information," the editor assured him.

"Of course I knew that, but I just wanted to tell you," Mr. Bagley apologized, as he produced a slip of yellow paper from his pocket. "Here's a telegram that came a few minutes ago, addressed to that civil engineer, Osgood, who has been around town for the past two weeks in the interest of the new electric road. It seems to contain considerable information and as Mr. Osgood went away on the 12:45 for a couple of days' business trip to Batavia, and other points along his proposed road, as he informed me when he bought his ticket, I knew there wasn't any hurry in getting it up to the hotel where he stops. Just look it over and tell me what you think."

Mr. Higgins perused the telegram with interest. It read:

Mr. Chas. Osgood, Care Hotel Walker, Bingham, Michigan.

Waterfall will solve traffic problem. Everything O. K. now. Will be with you Monday to complete arrangements for power plant.

GENE CLARK.

"So they are going to build a power plant on the site of the old waterfall," said Mr. Higgins musingly. "Well, well, who would ever have thought it?"

"But we ain't going to let them, are we?" Mr. Bagley burst forth indignantly.

"Why not?" asked Mr. Higgins, in surprise.

"Why, ain't that waterfall the chief beauty spot of the whole town?" exclaimed the agent. "There isn't another town this side of Niagara got as pretty a waterfall as ours! Right in the principal part of town, too!"

"By jove, I believe you are right!" exclaimed the editor. "When you come to think of it, that waterfall is a mighty big acquisition to our town. It certainly shouldn't be despoiled to the detriment

of the community and the gain of the trusts."

"Of course it shouldn't! We ought to do something about it right away!"

"I'll go right down and see Clyde Cortright," said the editor. "He will tell us what to do."

Clyde Cortright, city attorney for the town of Bingham, was in his office when Mr. Higgins arrived and the latter lost no time in apprising him of the situation.

"We've got to do something to prevent this," he concluded.

Mr. Cortright smiled and shrugged his shoulders.

"I can't see what you are going to do to prevent it," he said.

"Why, stop them, of course. The town owns that property, and—"

"But the town doesn't own it," interposed Mr. Cortright. "The Missoula Interurban Company bought up that property several months ago for the purpose of erecting a waiting room."

"Why that's so," exclaimed Mr. Higgins. "I had forgotten."

"Yes," nodded Mr. Cortright, a trifle wearily. "Everybody forgot it but me, I guess. The trouble with this town is that it is too dead or indifferent to take advantage of its opportunities. An outlay of a few hundred dollars would have made that property into one of the prettiest little parks in the state; but this town is altogether too mercenary; that waterfall has been here much longer than the town, and it is indeed a very pretty piece of scenery, but there isn't a citizen in the town who has shown even enough interest to cut down the weeds on the lot. They deserve to lose it."

Mr. Higgins admitted that there was much truth in this—from an editorial point of view. "I'll write that up," he decided. "The people need to be awakened."

"You'll have to get a hump on yourself," said Mr. Cortright dryly. "That telegram Bagley took the liberty to show you states that they will conclude arrangements for erecting a power plant next Monday. If you do anything with them at all you will probably have to either buy back the property at a big advance in the price, or furnish them with a better site for their plant."

Mr. Higgins' paper went to press a day earlier than usual in order to meet the pressing emergency. The front page was embellished with a five-deck scare head, three columns wide, topping a red-hot article which detailed at great length the outrage about to be perpetrated upon the town by a soulless corporation, and urged strongly that something be done immediately to stop it.

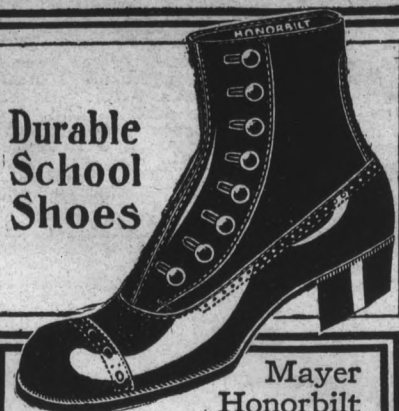
The article had the desired effect. Within three hours after the paper was off the press an indignation meeting was called at the town hall in which nearly every citizen participated, and where various ways and means were discussed for averting the tragedy. It was Mr. Cortright who offered what seemed to be the only plausible suggestion.

"Gentlemen," said he, when called upon to air his views, "it should be quite evident to you that the advent of an electric road into our town is of inestimable benefit to the property owners and tradesmen. We should really try to lend a hand toward making everything as convenient as possible for the company, instead of opposing it. It will be necessary, I understand, to erect an electric power plant at this point, and if that is the case we can hardly blame the company for selecting what seems to be the most advantageous place."

"Since this matter has been brought to my attention I have given it considerable thought and it seems to me that the old Perrin mill site on the Kalamo river would be a much more desirable place for the plant than would the waterfall. As many of you know, there is a sandstone outcropping at that point which runs across the country at right angles with the river in such a manner as to form natural sandstone abutments on each bank and a hard stone bedrock, making the site an exceedingly convenient place to erect a dam that would generate a much higher water power than would the waterfall."

"Now I suggest that the townspeople, if they are still interested in retaining their beautiful little waterfall, buy up the

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Perrin property and offer it in exchange for the waterfall property. You would doubtless have to make further concessions, as the waterfall property is really the most convenient place in town for an interurban depot. I further suggest that the town grant the company the privilege of erecting their depot at the end of the property with the understanding that they use the balance of the land, including the waterfall, as a public park, to be maintained at their expense, and to be properly graded and set with shade trees, shrubbery, cement walks and seats. It seems to me that they would accept this proposition, as it would be a distinct advantage to them as well as to the town."

Mr. Martin, who had come into possession of the Perrin mill site through the foreclosure of a mortgage several years before, arose promptly as Mr. Cortright concluded. He agreed substantially with everything the attorney had said, and magnanimously offered to part with the property at a price far below its real value if the town cared to buy it by popular subscription. He would set the price, he stated, at the very low figure of five thousand dollars.

The uproar that greeted this last statement surprised and grieved Mr. Martin. That his generosity should be received with such derision hurt him more than he could express, he told them. After long argument, however, he stated that he would himself subscribe two thousand dollars toward the enterprise, leaving but three thousand for the others to raise.

The others, who comprised one hundred and fifteen of the leading citizens and business men of Bingham, were literally paralyzed into action by so unprecedented a move on the part of old "Tightwad" Martin as actually letting go of so huge a sum as two thousand dollars, and within half an hour the balance of the purchase price had been subscribed in sums ranging from ten dollars up to fifty.

Mr. Charles Osgood, civil engineer for the Missoula Interurban Co., did not return to Bingham until late Sunday night. He went directly to the hotel from the depot, asked for his mail at the desk, receiving several letters and the telegram that had started the waterfall disturbance, and then repaired to his room without talking with anyone. He was therefore entirely ignorant of what had transpired during his absence from the town.

He was up at four o'clock next morning and, without waiting for breakfast, he aroused the night man at the livery barn, hired a horse and buggy and drove out of town in an easterly direction.

At 9:26 that morning two men dropped off the train from the east and at once repaired to the hotel, where they inquired for Mr. Osgood, only to be informed that he had not been seen that morning.

A few minutes later, however, Mr. Osgood drove up, turned his rig over to the hostler and entered the hotel, where he greeted the other two heartily.

"I'm sorry to have kept you waiting," he apologized, "but I have been out looking over that property and making calculations all the morning. I thought I'd better start early when there was no one around. Come right up to my room where we can talk matters over in private."

The other two followed him upstairs, but they were hardly seated in the room when there came a knock and Mr. Osgood walked to the door and opened it.

Before him stood Mr. Higgins, the editor, and Mr. Cortright, the attorney, heading a committee of about a dozen of Bingham's leading citizens.

"What can I do for you, gentlemen?" asked the engineer in surprise.

"We have called to confer with you on a matter of great importance," answered Mr. Cortright. "If you can spare a few minutes of your time we will be greatly obliged to you."

"But I am engaged with these gentlemen just now," objected Mr. Osgood.

"I understand," answered the attorney. "If I am not mistaken, they, too, are representatives of the Interurban Company, and will be interested in what we have to say."

"Very well, come in," invited Mr. Osgood, graciously.

In a very circumspect manner Mr. Cortright went over the situation. He did not state definitely that the townspeople knew the company intended erecting a power plant on the waterfall site, but he pointed out to them that while he fully appreciated that the company owned the site and could therefore do as they pleased in the matter, still the people of the town were loath to lose so beautiful a piece of scenery.

"To that end," said the attorney, "we have called on you with an offer that if you will reconsider your present plans, the city will gladly present the company with a much more desirable building site for their power plant, namely the Perrin mill site, if in return the company will agree to turn the waterfall site into a public park, with certain stipulations, it being understood that they reserve enough of the east end of the plot for depot purposes.

"If you care to accept this proposition I have with me a deed to the Perrin property, and the park contract as well, and if you have the power of attorney to act for the company we can conclude negotiations now as well as at any time."

The engineer and his companions listened to this address with silent but growing amazement. When the attorney had concluded Mr. Osgood shot a quick glance at one of the others, who gazed back at the young engineer with an expression of quizzical amusement. After a moment's hesitation he nodded and the engineer at once arose.

"Gentlemen," said he, "this is the most remarkable proposition I have ever listened to, but, as Mr. Clark, our general superintendent, seems to agree with your offer I most heartily accept it in the name of the company."

"We will be only too glad to accede to your wishes in regard to the park, and, as I have spent the entire morning in the vicinity of the Perrin mill property and fully appreciate its adaptability for a dam site, I can assure you that we will be most happy to accept it as a present from the town, and can further assure you that a large dam and power plant will be erected there with all possible expediency. Mr. Clark and I are ready to sign the papers with you at any time you say."

Mr. Cortright, with an expression of great relief, promptly produced two legal looking documents from his pocket and spread them out on the table. In fifteen minutes they had been signed and witnessed.

"It is a source of great pleasure to us to have this matter so amiably and satisfactorily settled," said Mr. Cortright. "I am sure we all thank you from the bottom of our hearts."

"It seems to me that the pleasure should be on the side of the Missoula Company," answered the general superintendent. "As a matter of fact, you seem to have anticipated our every move. We had fully intended turning the waterfall property into a park exactly along the lines that you have laid down in your contract, and we have for some time been considering the purchase of the Perrin mill property. Our Mr. Osgood has been making a quiet investigation of the site and its possibilities before putting the proposition up to the owner. It is really the only available site for a dam for fifty miles up or down the river."

If the Interurban men noticed the expressions of blank amazement that overspread the faces of the visiting committee they gave no evidence of it. Mr. Osgood now spoke, laying his hand on the shoulder of the third of the Interurban party who, until now, had remained silent and in the background.

"By the way, gentlemen," he said, "I almost overlooked introducing you to our new traffic manager. It is probable that the business men of your town will have occasion to meet him more or less in the future and it would be well for you to become acquainted. Until he took charge of the post a few days ago, traffic affairs on all our lines were in a very congested condition, but, thanks to his able management, matters in that line are now rounding out nicely and we anticipate but little trouble in the future. This, gentlemen, is our new traffic manager, Mr. B. F. Waterfall."

One might easily have heard the proverbial pin drop for a block away for several minutes after Mr. Osgood concluded his introduction. The Eagle editor was the first to recover himself.

"Waterfall will solve traffic problem!" he chanted, apparently to himself. "Waterfall will solve traffic problem! Why, sure!" Mr. Higgins brightened up, advanced to the traffic manager and seized his hand, shaking it heartily. "Pleased to meet you, Mr. Waterfall! Welcome to our town! Have a cigar! You're the most illuminating individual I've heard of since Billy Patterson got hit!"

And it is possible that the traffic manager is still wondering just what the editor meant at that.

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Advice through 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 someone else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany the letter.

Unthrifty Horses—Worms.—We have seven work horses that are fed nice, bright clover hay and oats, but none of them are thriving as well as they should. I am anxious to put them in good condition for spring work. I am certain nearly all of them are troubled with worms. L. K., New Lathrop, Mich.—Mix together equal parts by weight, powdered sulphate iron, ground gentian, ginger, fenugreek and salt and give them each a tablespoonful at a dose in feed two or three times a day. It would be no mistake to examine their teeth for some of them may need floating.

Imperfect Udder.—I would like to know what is wrong with my cows; two of them fall to give milk out of one quarter of udder, but the quarter is not inflamed or hard. C. B., Holland, Mich.—Your cows suffer from a condition of udder that is not attended with any inflammatory trouble, but the quarter that gives no milk is functionless and will be benefited somewhat by active hand-rubbing. Give them each a dessertspoonful of powdered nitrate potash at a dose in feed twice a day for ten days and hand-rub udder twice a day.

Warbles.—Some of our young cattle seem to be affected with grub in the back and I would like to know what you recommend as treatment for such cases. W. H. W., Belding, Mich.—A sharp pen knife should be used in making the holes in hide a little larger, then the grub should be squeezed out and killed, then apply boric acid to wound once a day. Give each a teaspoonful of sulphur at a dose once a day and apply tincture iodine to bunched three times a week.

Enteritis—Spasms.—Have lost several sheep which show symptoms of nervousness, twitching of the ears, eyes roll back in socket and they usually turn to the left, fall and struggle, but when lifted up they will eat. The first one took sick two weeks ago, but now appears all right, except she staggers and has rather poor use of left side. The others have all died and were not sick more than three days. The last one that died had a lamb about three hours before she died. In all cases they have spasms and fall to the left. These sheep have been fed corn silage, clover hay, corn fodder and shelled corn and have had plenty of exercise. On opening them everything appeared all right, except small intestines which were inflamed and had turned black. E. S., C., Holme, Mich.—I am inclined to believe some, if not all, the trouble comes from feeding silage. A change of feed will assist in preventing others from sickening. Mix equal parts ground gentian, ginger, cooking soda and salt and give each sheep a teaspoonful at a dose in feed twice a day.

Nodular Disease—Vertigo.—Some of my sheep have died lately showing the following symptoms: Dizziness, frothing at mouth, holding head high in air and then die. They are all in fair flesh, have been fed a little grain and cornstalks all winter, and many of them are pregnant. I am at a loss to know what causes their death. F. W. C., Schoolcraft, Mich.—It is possible that they die the result of forage poisoning, or they may die the result of nodular disease, affecting the bowels. Give 5 grs. powdered sulphate of iron, 1 gr. quinine and 1 dr. ground gentian at a dose in feed three times a day. They should be well salted and a change of food will help them.

Hogs Cough—Choking—Worms.—Several of my hogs are troubled with a cough and I would like to know what can be done for them. I thought they had a cold and I called our local Vet.'s attention to them and he prescribed for the hogs, but they are much the same as before treatment. They wheeze and choke on the first mouthful or two they take, fall back, hold head high and breathe hard. I have fed these hogs plenty of grain all winter, but they have not grown and gained in weight much, but have just about stood still and held their own. I have fed them worm medicine without good results. L. L. G., Middleville, Mich.—If you will warm their feed they will soon have less trouble, cough less, and feel better. Give each hog a teaspoonful of the following compound powder at a dose in feed three times a day: Ginger, gentian, cinchona and bicarbonate of soda, mixed thoroughly. I also believe a change of feed advisable. Their bowels should be kept open.

Deep Milking Mare.—I have a mare 12 years old that had twin colts last June; one died a few hours after it came, but I raised the other and weaned it last November. The mare is milking yet and although I have applied spirits of camphor to bag, she still gives milk. J. T., Nessen City, Mich.—Feed your mare timothy and oats, and work her daily and she will not give much milk. Milk her out partly every two or three days.

Indigestion.—My horse has had two attacks of indigestion within the past ten days and I would like to know how to prevent it. H. K., Prosper, Mich.—Care-

ful feeding has more to do with preventing indigestion than anything else; however, you had better give her ½ oz. of ground ginger, ½ oz. cooking soda, ½ oz. powdered charcoal at a dose in feed two or three times a day.

Nervousness.—I have a six-year-old mare that does not drive pleasantly when in heat and I would like to know what can be done for her. She appears to be in heat nearly one-half of the time and, of course, it is quite unpleasant to use her. T. R., Munith, Mich.—Either have her spayed or breed her.

Stifle Weakness.—I have a Percheron filly that will be three years old this spring, a bunch came on each stifle when she was two days old and she has never recovered. The cap seems to slip out then back to place without causing her much inconvenience. I blistered both legs and the treatment helped one joint but not the other. J. T., Amadore, Mich.—Her stifle trouble is the result of neglected navel; had you treated the navel at birth and for a few days following, she would have been sound today. Apply one part red iodine mercury and ten parts cerate of cantharides three times a month.

Indigestion—Weakness.—My nine-year-old mare has been in an unthrifty condition all winter, although well fed and not worked much. Our local Vet. floated her teeth. B. W., Port Hope, Mich.—Give her ½ oz. Fowler's solution, ½ oz. fluid extract gentian at a dose three times a day. Feed her all the oats and well-cured mixed hay she will eat.

Stringhalt.—I have a six-year-old horse that stood in the barn a little more than usual this winter and now when he comes out he raises hind leg high, as if stepping over something. After he walks a short distance his action is same with both hind legs. J. C. J., Sunfield, Mich.—Your horse suffers from milk attacks of stringhalt and will be benefited by having your Vet. operate on him. I have little faith in drugs for an ailment of this kind.

Brood Mare Stocks—Stopping Milk Flow.—My seven-year-old mare is due to drop her colt in a month, and she stocks in both hind legs. I would also like to know how to dry and lessen milk flow of mare that recently lost her colt. W. G. H., St. Clair, Mich.—Give your mare ½ oz. fluid extract buchu at a dose in feed three times a day. She should have daily exercise, and light work will do her no harm. Feed mare timothy hay and oats and she will not give much milk. Milk her part dry every day or two.

Worms.—I have a mare that has not been in a thrifty condition for some time and I would like to know what to give her. She has a ravenous appetite and passes a few worms. I need her to do spring work. V. G. S., Gaines, Mich.—Increase her food supply and give her a teaspoonful of powdered sulphate of iron ½ oz. ground gentian and ½ oz. Fowler's solution at a dose in feed three times a day.

Thin Mare.—I bought a mare last spring that was thin and she has never put on much flesh, although she is fed hay and oats. She is only nine years old and I would like to know how to build her up. J. C. S., Chase, Mich.—Her grinder teeth may need floating. Increase her grain ration and give 1 dr. ground nuxvomica, ½ oz. gentian and 2 drs. fenugreek at a dose in feed three times a day.

Rheumatism.—I have a brood mare due to foal soon which is dropsical and stiff. A swelling under belly leads me to believe she has dropsy. Her legs stock, she drags hind toes and wabbles in hind quarters. She has been in barn nearly all winter and had little chance to exercise. S. B. G., Newaygo, Mich.—Give her ½ oz. fluid extract buchu at a dose three times a day. Feed her some roots and exercise her daily.

Sprained Hock.—My 17-year-old horse injured leg last fall and a hunch appeared in hock joint which resembles a bog spavin. Several blotches came on legs and his kidneys did not act free enough. D. R., Central Lake, Mich.—Apply one part tincture iodine and ten parts vaseline to bunch in hock once a day. Give him a dessertspoonful of Donovan's solution at a dose in feed two or three times a day.

Leucorrhoea.—I have a mare that is 12 or 14 years old which seems to be healthy except having vaginal discharge. She throws off a sticky mucus which adheres to hips and tail and I have been thinking of breeding her. H. W. B., Parma, Mich.—Dissolve 1 dr. permanganate of potash in one gallon of tepid water and inject her daily. Give her 2 drs. powdered sulphate iron at a dose in feed three times a day. She will not get with foal until discharge ceases. She should be well fed.

Weakness.—I have a draft colt coming three years old, that had a bad attack of distemper last spring and when I work her she pants badly. E. T. R., Fenton, Mich.—Give her 1 dr. ground nuxvomica and 3 drs. Fowler's solution, at a dose in feed three times a day. He should be fed no clover or musty fodder and not too much bulky food.

Malignant Sore.—A large tumor came between fore legs of my brood mare and our local Vet. cut it out, but before long it commenced to grow again and is now discharging pus. W. S., Evart, Mich.—Apply one part iodoform and ten parts boric acid to sore twice a day. I have frequently obtained good results by injecting tincture iodine into sore daily for three or four days.

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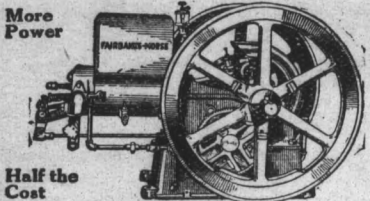
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Our Motto—"The farmer is of more consequence than the farm, and should be first improved."

INGHAM POMONA STUDIES CORN AND ALFALFA.

Threatening skies, muddy roads and washouts did not prevent a goodly number of patrons, representing nine of Ingham county's subordinate Granges from attending the March Pomona meeting held with Williamston Grange. Williamston is one of Ingham's oldest subordinates, having enjoyed an uninterrupted existence since its organization in the year 1872. About 100 Pomona members enjoyed the banquet prepared by the sisters of Williamston Grange and, after a short business session, the patrons repaired to a nearby church where an open session was held.

The master of Williamston Grange, Bro. Leon Webb, in an excellent address of welcome, referred to the opening words of the program, "The earth seems waking from her long, long sleep," and spoke of the problems and uncertainties which confront the farmer at this season. He said that present conditions in agriculture demand the inauguration of better methods, and that the farmers of this country must soon meet conditions which the people of the old world faced years ago.

"Improving and increasing the yield of corn," was the subject of an excellent address by Mr. Potts, field agent for M. A. C. In briefly covering the selection of the seed and the preparation of the seed bed, Mr. Potts declared it to be a mistake for any farmer to plant crib corn; likewise to depend entirely upon his neighbors for his seed. Neither should he secure seed from the south, as such corn is almost certain to fail to mature. Then followed a description of the points to be taken into consideration in selecting seed ears, advising that the selection be made from standing stalks in the fall and the ears carefully and thoroughly dried before extreme cold weather. He also mentioned the effective work being done by the numerous corn clubs which have been organized in almost every county in the state. This talk was supplemented by a practical demonstration of the seed testing system devised by Prof. P. G. Holden, of Iowa, which was given by his brother, E. A. Holden. It was the so-called rag doll system, which has proven very popular in the schools, being not only simple and practical, but reliable.

"Some good things from new books" was the subject of a pleasing review of current publications given by Sister E. A. Holden, which was followed by a talk on alfalfa growing in Michigan by Mr. Potts. He stated that the farm crops department at the college receives more inquiries regarding alfalfa than any other crop, and declared it a mistake for farmers to assume that alfalfa will grow upon land that will not grow other crops. The plant is not adapted to sour, wet soils, and in this connection Mr. Potts spoke of the use of lime, its action on soils, the various sources from which it may be obtained and the quantity used. He advised having the seed examined as a protection against such enemies as tumble weed, dock, etc. Sowing alfalfa with wheat or any other nurse crop, he declared has not proven very successful in this state, although some farmers have succeeded in raising quite a quantity of seed. The quality of the hay will be improved by cocking it before drawing, but this is not always possible because of scarcity of help. Alfalfa makes good pasture for hogs, and the hay is a good feed for dairy cows, fattening cattle or hogs, and even for work horses and sheep. Alfalfa clubs of ten members or more have been organized in all parts of the state. The Pomona then passed resolutions commending the excellent work of President Snyder and the faculty of the Agricultural College. Music for the meeting was furnished by Wheatfield Grange, and the next meeting will be held with Locke Grange some time in June.—Mrs. E. J. Creyts, Lect.

AMONG THE LIVE GRANGES.

A Mid-summer Rally is already being talked of by Grand Traverse patrons, the plan being to have the Granges of Benzie, Antrim, Leelanau and Kalkaska counties participate if possible.

Almont Grange, of Lapeer county, at a recent meeting voted to ask the present legislature to make legal provision for setting apart from the county road system any township that will bond itself for four per cent of its assessed valuation for the purpose of building good roads.

Hesperia Grange, of Newaygo county, recently entertained Pomona under discouraging circumstances, bad roads preventing attendance from more than a half dozen of the subordinates of the county. Illness in the home of the lecturer also threatened the success of the program, but that indefatigable worker, known to many Michigan patrons, Sister Mary Robertson, came to the rescue, with the result that an excellent program was rendered. Hesperia is one of the hustling Granges of that section of the state, it having recently organized a degree team in addition to receiving 11 applications for membership, two reinstatements and one member by demit.

COMING EVENTS.

Charlevoix Co., with Peninsula Grange, Thursday April 17.

Farmers' Clubs

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

YEARLY PROGRAMS.

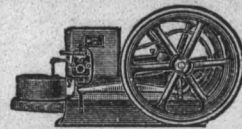
The Hadley and Elba Farmers' Club.—The yearly program of this Club is a very tastily gotten up booklet, printed on tinted paper with suitably colored ink, the cover of which simply bears the name of the Club, and the title page the name of the Club, the date of its organization, which was 1899, and the year for which the program serves. The following page is devoted to a schedule of the monthly meetings, which, from October to April, inclusive, begin at 10:30 a. m., and from May to September at 1:30 p. m., the meetings being held on the third Thursday of each month. The music for each meeting is arranged by a committee. The next page gives a list of officers and the one following it the order of business for the Club meetings. Each of the succeeding pages is devoted to the program for one month, the fiscal year beginning with February. Roll call is answered in a manner suited to the season and one or two questions are named for discussion at each meeting. Readings are also assigned to different members while the music, as above noted, is arranged for each month by a committee. Opportunity is given for the introduction of questions of the hour under the head of current events, which appears on a majority of the programs. Special features are a Children's Day in June, Michigan Day in July, a Union Picnic with the Lapeer Farmers' Picnic in August, a Club Fair in October and an Oyster Dinner in January. Altogether, this program is well calculated to maintain the interest in the monthly meetings of the Club and to serve as a reference to them throughout the year.

CLUB DISCUSSIONS.

Discuss Equal Suffrage.—The Assyria Farmers' Club, of Barry county, was very pleasantly entertained by Mr. and Mrs. George O. Kent, Saturday, March 22. On account of the very bad roads only about 75 were present. President Horton called a short business session, after which dinner was served which was up to the usual standard of excellence. The main feature of the afternoon program was an address on "Woman Suffrage," by Mrs. Wm. Charles, Jr., wife of the editor of the Bellevue Gazette, who said in part: "We have no quarrel with the men, for it is not their fault that we have never had the privilege of voting. The time has never been right; people are just awakening to their sense of duty, and there have never been women capable of taking hold of the movement. That age is coming; it is the age of progression. Men have been doing things for generations before us and no wonder they are so much more capable than women. In cities there is a large force of society women who have been wasting time and energy in frivolous pastimes heretofore, but who are now becoming awake and who will be a strong force for suffrage. If suffrage should carry this April and women are given the privilege of voting, do not think there will be a millennium and everything be so good. That is not our only cry for the ballot; we want it because it is just. And do not think this movement is working against the men; it means we will both work together and then, and not till then, will much of the trouble of the country be cleared away." This was discussed pro and con by several members and visitors and after listening to recitations and musical numbers the meeting adjourned. Ruth E. Cargo, Reporter.

Discuss Topics of the Hour.—The March meeting of the Burton Farmers' Club, of Shiawassee county, was held at "Avondale," the pleasant country home of Mr. and Mrs. M. L. Peterson. The topics: "Initiative, Referendum and Recall" were assigned respectively to Mesdames Clapp, Peterson and Garber. The ladies said woman suffrage is the only kind of politics they are interested in at present and called for help on a visiting member, Clayton Cook, who gallantly came to their aid and made the topics most comprehensive to everybody. "Pensioning School Teachers" was another topic discussed. A majority of the Clubs, it was declared, are opposed to the movement, believing in paying more wages. "Sanitation in the Rural Schools," Miss Ethelyn Peterson's maiden effort was full of good things, especially her idea about providing a more sanitary drinking apparatus than the old water pail. "Was the County Official Justified in Criticizing the Farmers' Clubs' Resolutions to Repeal the Present Tax Law?" E. B. Putman gave a most convincing and sensible talk on this subject. Explaining why this is the best and most just law ever enacted and unless the Farmers' Club had something better to offer, the official's remarks were in good form. The April meeting will be held at the home of Mr. and Mrs. Henry Schultz.—Reporter.

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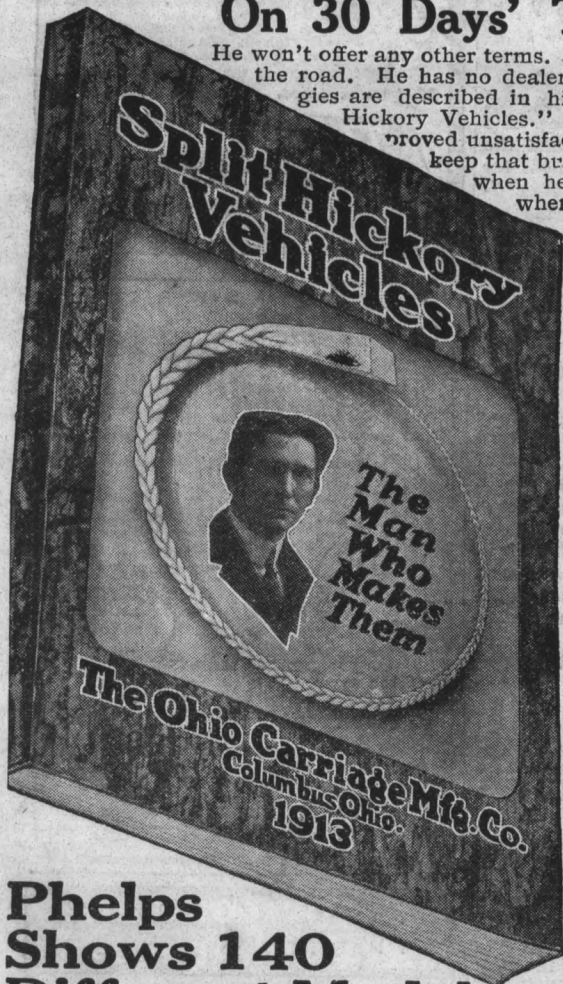
Twelve years ago when a man said he could save you \$25 to \$40 he did not have to prove it the way he has to prove it today. When you read this advertisement in this paper or in any other reputable paper, you know that the man who makes the statement has got to back it up.

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about six years ago, and it has given perfect satisfaction, and is in very good shape yet. Yours truly, J. E. PERRY. Saved \$20.00 or \$25.00. Pittsboro, N. C., May 8, 1912. H. C. Phelps, President, The Ohio Carriage Mfg. Co., Columbus, O.

Dear Sir:—I received my buggy all O. K. and like it fine, far better than I expected. I think I saved \$20 or \$25. It is just simply fine and strong. Anything that I can do for you, I will do with pleasure. Very truly yours, Wm. PERRY.