

MICHIGAN FARMER

AND
LIVE STOCK
PUBLISHED WEEKLY.

JOURNAL.
ESTABLISHED 1843.

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

VOL. CXXXVI. No. 24.
Whole Number 3552.

DETROIT, MICH., SATURDAY, JUNE 17, 1911.

\$1.00 A YEAR.
\$2.75 FIVE YEARS.

FARM NOTES.

Canada Thistles.

Please answer me through you paper the best way to get rid of Canada thistles. I have a five-acre lot in grass in which the thistles are very thick.

Presque Isle Co.

H. G.

A great many inquiries regarding the eradication of Canada thistles have been received during the past few weeks. In every case the inquirer has been advised that the best means of eradicating the pest is by thorough culture, which will prevent the growth of the plants above ground for a few weeks during the growing season, since no plant can survive this treatment. Of the crops which are best adapted to grow on ground that is badly infested with Canada thistles, root crops are first in order, for the reason that these have to be thinned and hoed by hand anyhow, and the labor which may properly be charged to the eradication of the thistles is thus greatly reduced. Where a cultivated crop is being grown on infested land which it is desired to clear of the pest, hand hoeing will be necessary to keep the thistles out of the hills or rows, where the cultivator cannot reach them.

But for those who have not planted cultivated crops on the badly infested fields, there is a much cheaper method for the eradication of the thistles. If they are plowed under when they commence to bloom, after the plants have attained nearly or quite their normal growth, they will start less vigorously than where plowed under earlier in the season. Then a thorough summer fallowing will nearly eradicate them. The writer was talking with a Gratiot county farmer just recently who has had repeated experiences in the eradication of thistles by this method, and in every case where it was followed he got practically a clean job. In one field which he now has sowed to alfalfa the thistles formerly grew so rank that practically nothing else could be produced on the land, but one season's treatment as above advised eradicated them so completely that he found only two thistles growing in the field at a recent close examination. He has another field sowed to oats and peas this year, a part of which is so badly infested with thistles that he will plow the whole crop under and summer fallow for the purpose of eliminating the thistles, and at the same time he will incidentally improve the mechanical condition and fertility of the soil by the crop plowed under for green manure.

A good many farmers who have allowed fields to become badly infested with thistles attempt to grow crops in them without sufficiently thorough culture to keep them in check, in which cases results are certain to be unprofitable. The writer has in mind a field regarding which a farmer asked his advice last year, where the thistles had been allowed to get such a start in his corn that it was impossible to check their growth so as to give the corn a chance to make good. This same field is in oats this year, but the oats have been practically smothered out by the thistles over a considerable portion of the field. This is certainly an unprofitable proposition, and in all such cases it will pay to take the necessary steps to eradicate the thistles.

Handling Clover for Best Results.

I am sending you two roots of clover; one is dead and the other is nearly so. Can you tell me what it is that has killed the clover? About three-fourths of the field is dead; in places for four rods square there is not a live root. The field has only been cut once for hay. Any information will be appreciated.

Oscoda Co.

R. E. L.

The roots of clover mentioned in the above inquiry afforded no clue to the cause of their failure to make a growth

this spring. However, in most cases in this section of Michigan, clover cannot be expected to make a good stand for more than one year. While it is not strictly a biennial, it very often dies after it has produced for one year, especially after it matures seed. The fact that the clover died out in patches to a noticeable extent may be due to the fact that it was more exposed to unfavorable conditions in spots in the field. These conditions may have been exposure for want of a sufficient covering of snow in spots, or perhaps due to standing water or ice, or the causes may have gone back still further and the result be due to the condition of the soil, or the effect of last season's drought, or perhaps to too close grazing in places if the clover was pastured after the hay was cut last year. In fact, it is not always easy to deter-

mine the cause of conditions such as are described. At times the clover root borer is prevalent in sections of Michigan, and destroys the two-year-old clover, but there was no evidence of this insect pest in the specimens sent, so the result must have been due to natural causes which cannot be analyzed without knowing all of the conditions, if at all. But this experience brings up a point which merits the attention of every farmer, and that is that the best results from every standpoint are secured by handling the clover crop in a short rotation, which leaves it to occupy the land only one year. By this means the greatest possible value of the clover crop to the land will be realized. Where the

clover is mowed for the second year, especially if seeded with timothy or other grasses, the stand is always weakened, and the other grasses appropriate the nitrogen and mineral plant food stored in the dead roots of the clover plants, and when the sod is plowed down less benefit is derived from the accumulated plant food by succeeding crops, and less vegetable matter is added to the soil to increase its content of humus and benefit its mechanical condition. For these reasons it is the better practice to use clover in a short rotation where practicable, although, of course, occasions will arise where it is desirable to cut it a second year, such as the failure of a seeding. But it is better to let even such a contingency interfere with the regular crop rotation as little as possible, if we aim to get the best results, both in the yields

a difficult proposition to prevent their depredations until the ground has been cleared of them by cultivation for two or more years. Some farmers claim to have had excellent results by applying salt to destroy them and keep them in check. However, it would seem to be much the better plan to apply the salt broadcast and work it into the soil, if it is to be applied at all, than to sow it in the rows with the beans. Salt, if applied in sufficient quantities, will destroy vegetation with as much certainty as it will insect pests, hence the wisdom of the caution above advised. Of course, it is possible that the application of even a small quantity of salt as suggested in this inquiry might prove distasteful to the wireworms and to some degree keep them away from the young bean plants, yet hunger is a compelling necessity, and we doubt whether this would prove an adequate protection for the plants. The best course would seem to be to plant plenty of seed, and in case the beans are taken, devote the land to some crop which is distasteful to the worms, such as buckwheat or rape to be used as forage for sheep or hogs. However, it would be worth while to experiment with salt in the row as suggested, on a small area to determine by a comparative test whether there is any virtue in the plan or not.

CONSERVATION OF SOIL MOISTURE.

Conserving or holding the moisture contained in the soil is a subject which has not occupied the farmer's mind in years as it has, or ought to have had, during the recent drought in this section of the state. Not in years has there been so small an amount of rainfall during April and May. Thus it stood the farmer in hand to save all the moisture that the soil contained before the drought began. Of course, no one knew that the rainfall would be so light as it was and consequently a good many farmers plowed and plowed for days as usual, and hoped and waited for the much belated rain to appear. But the ground dried out, as usual, and they planted in the dust, with not the best results.

There are very few fields upon which crops of any kind in any climate, can be brought to maturity with the maximum yields the soils are capable of producing, without adopting means of saving the soil moisture. There are fields, it is true, where, at times, the moisture in the soil is too great, and drainage becomes necessary; but even under these conditions it will usually be found advisable to adopt measures for conserving the moisture.

In aiming to control soil moisture three distinct lines of operation are followed, based upon as many different aims. First, to conserve the moisture already in the soil by different ways, times, and frequencies of tillage and by application of mulches.

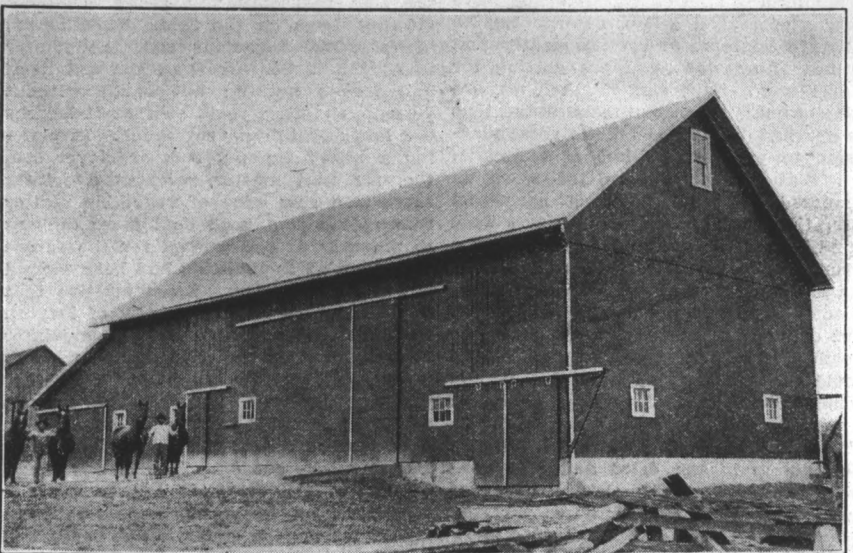
Second, to reduce the quantity of water in the soil, by frequent stirring, by ridging or firming the surface and by surface or under drainage.

Third, to increase the amount of water in the soil by increasing its capacity for water and by irrigation.

We will now take up the first part, or the conserving of the moisture already in the soil. There are many, many ways. Early fall plowing of ground where winter grain is to be sown and tilling it to hold the moisture is a very good thing and is practiced by a good many farmers, who realize the value of this way of doing. When ground is plowed late in the fall, just before freezing, it then acts during the winter and early spring as a mulch, diminishing the loss of water by surface evaporation. The rough surface



Farm Home and Main Barn of Jacob Kniebes, of Berrien County, Mich.



of crops grown and the conservation and improvement of the fertility of the soil.

Wireworms.

I have a field that is infested with wireworms that I intend planting to beans. This was new land last year. What would you say about drilling salt with beans? Please inform me through your paper.

Saginaw Co.

E. K.

As has been often stated in these columns, the best remedy for wireworms is fall plowing, which leaves the larvae more exposed to the action of the elements during the winter. The damage done by these pests is due to the fact that the larvae live in the ground for two or three years before this period of their life cycle is completed, which makes it

tends to hold the snow, therefore when the snow melts it penetrates the soil without washing.

When sod ground is to be planted to corn the earlier the ground is plowed in the spring the better. In the spring the soil at the surface is usually not only wet but also well packed, two of the most important conditions for the rapid movement of water to the surface. It is almost always noticeable that the corn ground that is plowed the earliest in the spring holds its moisture the longest, and the crop is usually better than that on a field that was plowed later in the season.

Moisture can be conserved by mulching and by frequent cultivation. The soil should be cultivated after each rain, if convenient, but a good many of us cannot do this as we would like to do on account of not having the time and help to do it. One should be very careful not to cultivate too deep or too often after the crop has nearly reached the maturing stage as corn or potatoes can be injured in this way by cutting off the feeder roots. Of course, it depends a great deal upon the season, whether wet or dry, and one must use some judgment in the matter, based upon past experience. Putting an application of manure on the soil or upon the wheat in the winter helps to hold the moisture for the clover seed in the spring, and is extremely beneficial to the growing plants.

Moisture can be conserved in the soil by reducing the quantity of water near the surface. Producing a dust mulch by stirring frequently and pressing down the soil firmly with a land roller accomplishes this in the most satisfactory way. We aim, when plowing for corn, to follow closely with the roller, especially where the soil is a sandy loam and not too much clay. This spring this has been a paying thing to do for the ground that was not rolled or floated immediately after plowing lost its moisture and was planted in the dust, the corn not coming up good and even as it ought to do in order to have an even stand. This will be more noticeable in drilled corn than in hilled corn, as each stalk is seen by itself. A field of corn in the hill always looks larger than a field of drilled corn, because in the hilled corn you notice only the tallest stalks.

Draining the water from the surface or by laying tile and draining it from beneath places the soil in a condition to hold moisture better for the growing crop.

Subsoiling places the soil in a position to increase its capacity for water but this method is not generally practiced in this region. Irrigation is carried on in the west but we do not have to irrigate here, although it would be an advantage if we have as dry a spring next year as we did this. Within the last four days we have had plenty of rain and it now stands us in hand to hold as much of this as we can for future needs as we will probably need it during the next three months.

Jackson Co. CHAS. GOLDSMITH.

FERTILIZER FARMING.

In a recent issue of the Michigan Farmer, Mr. Lillie says that he hauls his barnyard manure to the fields that are within one-half mile of the barn, and uses commercial fertilizer on lands that are further away. How much does he use per acre, and is he able by this means to build up the fertility of the land without using much or any manure? If so, what rotation does he follow on this land? I would like to have Mr. Lillie answer these questions in the Michigan Farmer. I am using a considerable amount of high grade fertilizer each year, as I consider the high grade goods cheaper than low grade fertilizers. But my neighbors claim that it runs the land and costs too much, and that manure is cheaper and better. I have an outlying farm and have not manure enough to go around.

J. S.
For a number of years I have been convinced that it did not pay to haul the barnyard manure to the fields the farthest away from the barn, and I have not done it, because I did not produce, even with my large stock, a sufficient amount of stable manure to cover all of the land anyway, and so I have resorted to commercial fertilizer. As I have stated many times in the Michigan Farmer, I bought a run-down farm, did not keep any live stock on it, drew all of the crops to the farmstead, and relied entirely upon commercial fertilizer. That was a number of years ago when I was experimenting. I can take the same farm today and make good money from the very beginning, make more than I did then, simply because I did not have faith enough in commercial fertilizer at that time to use it in sufficient quantities and in a regular system. But I took that farm and

by using commercial fertilizers on wheat seeding to clover, keeping the field into clover simply one year then plowing down for corn; then growing oats after the corn, and wheat again after the oats; and using fertilizer on the corn, on the oats, and on the wheat, I gradually built up the soil so that when I sold the farm I could raise better crops without any commercial fertilizer than I did in the first place with commercial fertilizer. Now at the present time I am attempting to bring up some land that I recently purchased that has not received any stable manure for years. Some of it never received any. I have about the same rotation of crops but I am using larger, heavier applications of commercial fertilizer. I am using 300 to 400 lbs. and in some instances 500 lbs. of commercial fertilizer on wheat and seeding this wheat to clover, then I cut one crop of clover, if the season is favorable I will take a crop of seed, then the land is plowed for corn and I have been using 300 lbs. per acre of fertilizer but I am satisfied this is not enough and shall use 500 lbs., after the corn the land is sown to oats with 300 to 400 lbs. of fertilizer per acre and then plowed for wheat. I am raising profitable crops and am increasing the fertility of the land. The land is getting better every year.

COLON C. LILLIE.

COMPARATIVE VALUE OF HEN MANURE AND NITRATE OF SODA.

What is the comparative value of nitrate of soda at \$2.50 per cwt. and poultry manure at 50c per barrel? New York. B. F. M.

Nitrate of soda contains 17 per cent of nitrogen, or 17 lbs. of nitrogen per 100 lbs., which at the market price of 15c per lb. would be \$2.55, or \$51 per ton. This product runs uniform in analysis so that we can figure that one ton of nitrate of soda is just as valuable as another ton. But with hen manure the case is different. There are no two tons alike. The value of it depends largely upon the food which the fowls consume and also upon the per cent of moisture which it contains. Hens which are fed a ration which is highly nitrogenous will produce a manure which contains more ammonia and is therefore worth more for fertilizer than a ration which is largely carbonaceous and contains less ammonia. And hen manure varies in moisture content considerably though, of course, not as much as the manure from other animals. Fresh hen manure contains about 50 to 60 per cent of moisture while sun dried or air dried hen manure contains from four or five to eight or 10 per cent of moisture. Therefore, it is next to impossible to answer this question with any degree of accuracy, and besides, we do not know the weight of the 50c worth. How much does a barrel of hen manure weigh? Buying hen manure at 50c per barrel is a good deal like buying a pig in a bag. You don't know what you are getting, and this is about the same way in buying any kind of manure. You have no way of analyzing it or determining its moisture content, and consequently you do not know what you are getting for your money. Supposing this hen manure to be ordinary fresh hen manure and that plaster had been used on the roost platforms to prevent the loss of ammonia, and that the hens were fed a ration composed of equal parts of corn and oats, this sort of hen manure has been found by analysis to contain three-fourths of one per cent of nitrogen and 0.22 of one per cent of phosphoric acid, and 0.23 of one per cent of potash. 0.75 of one per cent of nitrogen at 15c a pound would be worth \$2.24, and the phosphoric acid would be worth 31c, and the potash would be worth 22c, making a ton of hen manure worth \$2.75.

Take another little illustration. Where the manure is sun dried and only contains 4 1/4 per cent of moisture, this manure was found to contain two per cent of nitrogen, 0.85 of one per cent of phosphoric acid, 0.35 of one per cent of potash, and at the same price for ingredients a ton would contain \$6 worth of nitrogen, 63c worth of phosphoric acid, 31c worth of potash, or a total of \$6.94 for the ton. Here we have two instances where a ton of hen manure varies in price from \$2.77 to \$6.94. If we would average the two it would make a ton of hen manure worth approximately \$5 per ton. Nitrate of soda is worth \$50 per ton if hen manure is worth \$5 per ton. Now, will a barrel of hen manure weigh 100 lbs. or will it weigh more? If it weighs 100 lbs. on the average and you pay 50c a barrel for the hen manure you would be paying at the rate of \$10 per ton.

COLON C. LILLIE.

HABIT AS A FACTOR IN METHODS OF FARM WORK.

I was born and reared in Michigan, but this spring desiring to take a little trip for experience, I traveled around a little and took a job on a farm near Dayton, O., at \$30 per month and board. But \$30 per month is not attractive to me the way they farm here. They all use left hand plows, with no wheel or jointer, and they use only one line to drive three horses to plow or harrow. This was the awkwardest work I ever tried to do. The horses are hitched close and one has to lift up on the handles and practically carry the weight of the plow, with the result that sometimes one will plow nearly a foot deep. In plowing down clover that was just heading out for the tobacco crop, the clover plants showed between every furrow. I got a chain and put on the plow to do a better job, and he made me take it off, saying there was no need of making the horses drag that extra weight. I told him that in Michigan we would consider a farmer who plowed that way about 1,000 years behind the times. But they will not believe me, and I would like to have Mr. Lillie write me a letter on this subject, or an article in the Michigan Farmer.

J. E. MILLER.

Our friend seems to have dropped into a new agricultural world where the system of doing farm work is entirely different from anything that he is used to. Undoubtedly, after he gets accustomed to doing the farm work in this way it will not seem so awkward, but without any question, in many ways he is right. Now, so far as a left hand plow is concerned, while I never saw one and know nothing about them from actual use, I can understand that after one got used to a left hand plow he could plow just as well as he could with a right hand plow. I can see that it would make no particular difference. It would be much on the same principle as milking a cow on the left hand side instead of the right hand side. Now, after one got used to it, and the cow got used to it, it would make absolutely no difference. The only reason one could give why everybody milks the cow on the right hand side is simply because it is custom, and that is the way with a left hand plow. But when it comes to a jointer and a wheel, without question both of these adjustments to the plow are valuable. One object in plowing is to turn down the green growing clover, stable manure that has been applied to the surface, the accumulation of weeds, stubble, and that sort of thing, and get it down to the bottom of the furrow of the tools used in tilling, also to bury it so that it will decay and furnish plant food for future crops, and to destroy the growing weeds and crops that you plow down so that they will not grow and interfere with the coming crop. Now, to effectively plow down anything of this sort, the jointer is certainly helpful. It turns a little furrow of its own, rolling the standing clover, or rye, or weeds, or stubble, so that it falls into the furrow ahead of the big furrow and the big or main furrow entirely covers it up, leaving nothing but clean earth on top. In this way you get a complete plowing down on the field. Then again, in plowing tenacious sod, the jointer turns this little furrow of the sod itself and leaves nothing but earth without very much grass roots so that it lessens the labor of tilling very much. In plowing a heavy timothy sod, or clover sod, too, for that matter, without a jointer there is a raw edge of vegetable matter that makes it a good deal more difficult to properly fit the ground for the future crop than as though this had been plowed down with a jointer. I am positive that if the farmers in the vicinity of Dayton in this neighborhood would use a jointer that they would be well satisfied with it. They would never go back. The only place, to my way of thinking, where one would be justified in using a colter is in new land where there are fresh roots that must be cut off. In such instances, of course, the colter is a great advantage, but on improved land, free from roots of trees the colter is not necessary. One positively cannot do as good plowing with a colter as he can with a jointer.

Where one has a uniform soil, that is, where the soil is just the same over the entire field to be plowed, and with a plow that is long on its land side, if it is properly adjusted, one can do a very good job of plowing without a wheel. But on land that is not uniform, where we have clay and sand, or heavy and light soil in the same field, and the plow is running from one to the other, it is almost impossible to do a good job of plowing without a wheel. You can't adjust a plow so that it can be readily handled by any plowman, to plow different kinds of soil without varying the depth and the

wheel entirely does away with this. By setting the plow so that it tends to run into the ground and then having the wheel to keep it out, you can keep the plow at a uniform depth very much easier than without one. How much easier for the plowman to hold the plow with a wheel when it is properly adjusted than it is without one. He doesn't have to give his whole attention to governing the depth of the plow and as a wheel is a very inexpensive part of a plow there is no reason why one should not be on every plow, and if a man will plow a spell with a wheel and then take it off he will soon put the wheel back on the plow.

I have understood before, that in some sections of the country people are in the habit of driving three horses with one single line. Not only that, but in some instances they drive a pair of horses with one single line and when they cultivate or plow corn with a single horse they only have one line. I cannot understand why people should stick to such practices as this. And I cannot understand why the first man in the first place should ever devise such a practice as this, because you can certainly drive a horse better with two lines than you can with one line. By properly adjusting the two lines on a three-horse team by having two extra straps or common tie reins that run from the buckle in the lines either way to the third horse and taking a little pains in adjusting the length of these lines one can get a set of lines on a three-horse team so that they can guide the horses just as readily as they would guide a pair of horses. Some people use the two lines on the two outside horses and then tie the center horse to the outside horses. I think this way is better than a single line and yet it is not as well as to have the properly adjusted three lines with the two extra reins. Some of my men on the farm are continually tying the third horse to the two outside horses and driving them in that way. Of course, one reason is that they lose the cross reins, but I wouldn't drive a three-horse team one single day without these extra reins, properly adjusted, then each horse has the same pressure on the bit and you can guide them just as nicely as you can a pair of horses. I suppose that this practice of driving three horses with a single line comes from the old army practice of driving three or four pairs of mules where it is possibly impracticable to drive the leaders with a pair of lines. Here the man rides the rear wheel mule and drives the head mule with a single line and the whip, but the whip is quite as important as the single line and, of course, after one gets used to driving in this way he can do a fairly good job, but you can't do it as nicely. It is not as easy for the horses as to have a pair of lines. Of course, with a little patience one could teach a horse to turn in either direction by a certain jerk. For instance the horse will learn that two short jerks mean turn to the left and one short jerk means turn to the right, but for all ordinary purposes where different men are driving horses, a bit in the mouth with a line on either side so that you can pull the way you want the horse to go is much more intelligently understood by the horse and he will respond to it much more quickly than any other way.

The old saying is that "Habits are the better part of one's self." We are all creatures, not only as individuals but as communities. As individuals we get in the habit of doing things in a certain way because we have seen other people do them in that way; we have contracted the habit, and it is hard to break it off. And so with communities. They get in the habit of doing certain kinds of work in certain ways and it clings to them generation after generation on the same principle that the habit clings to the individual. And it requires some effort on the part of the individual or on the part of the community to get rid of certain habits. Of course, in a general way this is a good thing because the co-operative judgment of a community is considerably merited, but on the other in any particular farm practice is con-hand, when we find out from the experience of others that some of the things that we have been doing are not done as well as they are done in other sections, then it should be our duty to at least give the new ways or different ways a trial. I feel sure that if our farmer friends in Ohio would use the wheel and jointer on the plow and would let our friend fit up his three-horse team properly with lines they would be well pleased with the results.

COLON C. LILLIE.

LIVE STOCK

THE BROOD SOWS.

No matter what particular breed of swine we may have, and no matter how excellent a breeding boar we may select, we can attain no marked success if we have unproductive and poorly managed brood sows. The effects of mismating are so difficult to breed out of a herd that it is of great importance that we have good sows to begin with. There is no infallible rule for selecting young sows that will prove especially good breeders, but there are numerous points which are well worth considering.

Short, straight legs, strong pasterns, a moderate amount of bone, smooth, evenly covered shoulders, a wide, deeply fleshed back, well sprung ribs, deep sides and well-rounded hams are important qualifications in the market hog and should be looked for in the brood sows. Uniformity of type is perhaps the most valuable single characteristic in the sow herd. A mixed lot of uneven pigs are not pleasing to the eye nor satisfactory in the feed yards. The only basis for the selection of animals that are uniform in type is the use of well-bred sires and dams that have been bred with that object in view. This explains why we should stick close to one breed and select breeding animals that possess these desired characteristics until we have established a fixed type and prepotency in our herds.

As a breeding proposition, "the boar is half the herd," but the influence of the sow is greater than that of the boar for she is not only an influential force in furthering the plans of the breeder and improving the type of the herd, but she supplies nourishment for the pigs during the first few weeks of their lives, consequently she must have a sufficient number of well-formed teats to provide sufficient nourishment and feeding room for large litters. A sow cannot rear a litter of thrifty pigs in excess of the number of her well-developed teats, for each pig has its own teat to which it invariably goes at every nursing period.

Size, quality and finish constitute a marked feature of a good brood sow. Depth of chest and abdomen are specially important. Drawn up flanks and narrow chests must be avoided. Intelligent eyes, broad forehead, clean and trim throat, moderately thin neck, smooth and deep shoulders, wide and straight back and ample room for the vital organs provided by a good width and depth of chest, well sprung ribs and straight, deep sides are some of the most important characteristics of good brood sows. Length of body is frequently emphasized as a valuable point in a brood sow, but this does not seem to be necessary if the body is roomy and not too much inclined to fatness. It will do no harm to select sows that are specially long, provided they have quality in proportion to their length, but it is a mistake for us to sacrifice quality and keep a bunch of loose-jointed, long-coupled, slow maturing sows. The influence of length of body on a sow's fecundity is by no means a settled question. The most sensible way of selecting prolific sows is to keep a record of the herd and use it as a basis of selection in determining which sows to keep over for breeders.

Disposition.

A kind and gentle disposition is one of the most important and valuable characteristics of a good brood sow. A sow that will not permit herself to be handled, that is nervous and irritable, always ready to raise a disturbance at the slightest provocation, will have a litter of scary pigs that will hide and squeal if any attempt is made to handle them. The gain in weight in young pigs in proportion to the food consumed, is in inverse ratio to the amount of unnecessary exercise they take, and a restless, uneasy sow with a scary litter, always jumping out of the nest every time we go near them, will prove a poor investment as compared with a more quiet disposition and temperament.

A fallacious belief held by many swine breeders and feeders is that sows that have small litters produce the best and most vigorous pigs. However, practical experiments have upset some of the theories of these breeders and feeders. The sow with vital energy to produce a large litter of well-formed pigs, if properly fed, will endow the pigs with a corresponding degree of thrift and vigor. This has been proven by continuing the

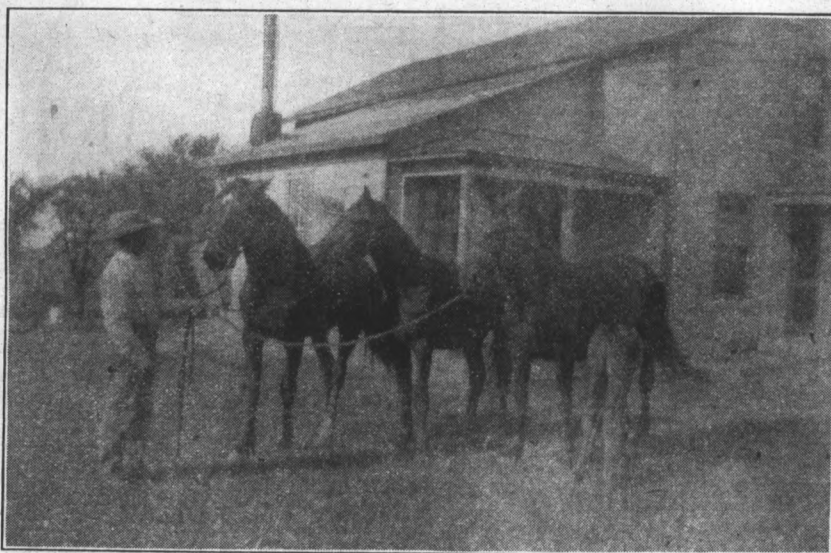
observation over a longer period where the pigs from both sows have had exactly the same food and treatment.

Whether we are to raise pigs for breeding purposes or for feeding on our own farms the economical management of the brood sows is of great importance. If we can dispose of our young stock for breeding purposes and secure fair prices it will probably pay best to make the breeding of pure-bred swine a feature of our business. It will then pay us to select our breeding swine with reference to the demands of the trade we are supplying and to invest liberally in the best class of breeding animals to improve our herds.

Two Litters a Year.

Whether we are breeding registered swine or feeding out our pigs for pork, I have never been able to understand the grounds for the claim so often made that it is unprofitable to attempt to get more than one litter a year from each sow. I know from actual experience that the difference between substantial profit and decided loss has been my ability to handle my sows so as to produce two litters a year at the desired time. Some of the best animals I have ever handled have been fall farrowed pigs and some of the most profitable pigs I have ever sent to market have been fall pigs that have been carried through the winter in good condition and marketed either in June at about 225 pounds or during the early fall at heavy weights after they had been grown largely upon forage crops during the summer and fed corn for a few weeks during the late summer and early autumn months.

Breeding sows to farrow two litters a



A Twenty-year-old Brood Mare, with her 14th, 15th and 16th Colts at Side.

This mare, the property of Claude Newman of Clinton county, raised her first colt at three years of age, and has produced a colt every year since, except one, making an unusual record.

year and at the right time requires careful management. We breed our sows to farrow their first litter late in February or early in March and plan to have the pigs weaned in time to breed them to farrow again early in September. If the sows are well fed after the pigs are born, and if the pigs are taught to eat solid food and drink milk at an early age they can be safely taken from the sow at seven or eight weeks of age. The whole litter can be removed within four or five days. The prolonging of the milk flow too long will make the fall litters come too late to secure a good start before the winter comes. The average sows will breed within a week after they are removed from their litters. This will bring the fall litters at about the right date. Should some of the sows fail to get with pig for a fall litter they may be carried over and bred again for a spring litter or fattened and sold. We always keep over enough sows so that we can spare those that do not get with pig at the right time.

In the feeding of the sow herd we should plan to utilize waste foods, forage and pasture crops, fallen fruits, roots and vegetables. Not that these foods are sufficient for the sow's diet but because they furnish the needed variety, bulk and succulence. The sow is not fattening and is therefore only required to assimilate sufficient food to maintain her condition and produce a litter of pigs in six months. A good prolific sow should be kept as long as she produces good sized litters of strong, vigorous pigs. There is decided economy in keeping fully-matured sows rather than breeding from young gilts.

New York.

W. MILTON KELLY.

FEEDERS' PROBLEMS.

The Feeding Value of Millet Hay.

Will you please inform me through the Michigan Farmer what you consider the feeding value of millet for horses and stock. What kind would you advise sowing and is the month of June too late to sow same?

Kent Co.

B. V. O.

While millet hay has a fairly high feeding value for cattle and sheep it is not a good horse feed, its use often proving deleterious, if not dangerous, to horses where it is fed as the exclusive roughage for any considerable period of time. This fact has been established both by experience and carefully conducted experiments. During the winter of 1891-92 an ailment of horses was prevalent in North Dakota which was called "millet disease" for the reason that practically all of the animals suffering from it had been previously fed millet as a roughage. About ten per cent of the animals affected died, which made the trouble of such importance that it was made the subject of a special investigation by the experiment station of that state. Experiments were made in the feeding of millet to a number of horses, these experiments being continued with one animal for a period of two years. The results of the test are given in Bulletin 26 of the North Dakota Experiment Station, as follows:

"By feeding her (a mare) millet (hay) for about three months, she would become so lame in the joints of the hind legs that it was almost impossible for her to walk, and on discontinuing the feeding of the millet she would gradually recover, until at the end of three or four months she would again be in a normal condition. As soon as that condition was

reached, would again feed millet until the mare was in such a condition that she could hardly stand, then again quit feeding millet. We have alternated with millet and other hay, for nearly two years. In the meantime the horse has suffered in condition and does not at all resemble her former self. She is valueless as far as work is concerned, and is only kept for experimental purposes. We are able at any time to demonstrate the effect from feeding millet, by allowing her to have millet exclusively as coarse food for a portion of two months."

With regard to the general effects produced by the exclusive feeding of millet hay in these experiments, and as ascertained by correspondence with a large number of veterinarians and horse owners in that state who had observed similar results, the bulletin says:

"Our experiments have thoroughly demonstrated that millet, when used entirely as a coarse food, is injurious to horses: First, in producing increased action of the kidneys. Second, in causing lameness and swelling of the joints. Third, in producing infusions of blood in the joints. Fourth, in destroying the texture of the bone, rendering it softer and less tenacious, so that traction causes the ligaments and muscles to be torn loose."

It is entirely probable that the results noted in North Dakota as described above were aggravated beyond the usual effects of feeding millet, and that there may be a difference in the seasons or in the soil on which the millet is grown, but these results should make every horse owner use care in the feeding of millet, especially about using it as an exclusive

(Continued on page 633).

THRIFTY STOCK

PAYS
MORE MONEY

GIVES
MORE SATISFACTION.

NO STOCK CAN THRIVE IF PESTERED
WITH LICE, TICKS, MITES, FLEAS,
SCAB, MANGE, AND OTHER SKIN
DISEASES.

TO CLEAN OUT THESE
PARASITES, GUARD AGAINST
CONTAGIOUS DISEASES,
CLEANSE, PURIFY, AND
DEODORIZE. USE

**Kreso
Dip No. 1**

BETTER THAN OTHERS, BECAUSE, IT IS

STANDARDIZED.

UNIFORM, DEPENDABLE, EFFICIENT. ONE
GALLON OF KRESO DIP NO. 1 MAKES 60
TO 100 GALLONS OF SOLUTION (DEPENDENT
UPON WHAT USE IS TO BE MADE OF IT)

A REAL NECESSITY ABOUT
HORSES, CATTLE, SHEEP, SWINE,
DOGS, GOATS AND POULTRY.

FOR SALE BY ALL DRUGGISTS.
WRITE FOR FREE CIRCULARS. ASK FOR LEAFLET
DESCRIBING A NEW CEMENT HOG WALLOW IF YOU
ARE INTERESTED.

PARKE, DAVIS & CO.

DEPARTMENT OF ANIMAL

INDUSTRY.

DETROIT, MICH.

U.S.A.

Horse Owners Should Use
GOMBAULT'S

Caustic Balsam

The Great French Veterinary Remedy.
A SAFE, SPEEDY AND
POSITIVE CURE.



Prepared
exclusively
by J. E.
Gombault
ex-Veteri-
nary Sur-
geon to the
French
Government
Stud

SUPERSEDES ALL CAUTERY OR FIRING
Impossible to produce any scar or blemish. The
safest best Blister ever used. Takes the place
of all liniments for mild or severe action. Removes
all Bunches or Blemishes from Horses or Cattle.

As a **HUMAN REMEDY** for Rheumatism,
Sprains, Sore Throat, Etc., it is invaluable.
that one tablespoonful of
WE GUARANTEE CAUSTIC BALSAM will
produce more actual results than a whole bottle of
any liniment or spavin cure mixture ever made.
Every bottle of Caustic Balsam sold is Warranted
to give satisfaction. Price \$1.50 per bottle. Sold
by druggists, or sent by express, charges paid, with full
directions for its use. Send for descriptive circulars,
testimonials, etc. Address
THE LAWRENCE-WILLIAMS CO., Cleveland, Ohio

MINERAL HEAVE REMEDY

NEGLECT
Will Ruin
Your Horse
Send to day
for only
PERMANENT
CURE

**CURES
HEAVES**

\$3 PACKAGE

will cure any case or

money refunded.

\$1 PACKAGE

cures ordinary cases.

Postpaid on receipt of

price. Agents Wanted.

Write for descriptive booklet.

Mineral Heave Remedy Co., 463 Fourth Ave., Pittsburg, Pa.

ABSORBINE

Will reduce inflamed, strained,
swollen Tendons, Ligaments,
Muscles or Bruises, Cure the
Lameness and stop pain from a
Splint, Side Bone or Bone Spavin.
No blister, no hair gone. Horse can be
used. \$2 a bottle delivered. Describe
your case for special instructions and
Book 2 E free.

ABSORBINE, JR. the liniment for mankind.
Reduces strained, torn ligaments, enlarged glands,
veins or muscles—heals ulcers—allays pain. Price
\$1.00 a bottle at dealers or delivered.
W.F. YOUNG, P.D.F., 268 Temple St., Springfield, Mass.

VETERINARY

CONDUCTED BY W. C. FAIR, V. S.

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

Warts.—I have a yearling heifers whose neck is well covered with warts. These warts made their first appearance last winter. D. D., Grand Rapids, Mich.—Give one teaspoonful powdered sulphur at a dose in feed night and morning and apply acetic acid once a day.

Impaction—Light Milker.—One of our cows came fresh three months ago; she gave a large mess of milk for two months, then she commenced giving much less; now she gives only a quart or two at each milking, but appears to be in perfect health. F. L. C., Holland, Mich. Give her 1 lb. doses of Epsom salts daily until her bowels move freely, also give 1/2 oz. powdered nitrate of potash at a dose in feed twice a day. It is possible that she holds up her milk.

Influenza.—I have a calf ten weeks old that has been dumpy for the past week; shows an inflamed condition of eyes and nostrils and has a poor appetite. B. H., Fairview, Mich.—Give 5 grs. quinine at a dose three times a day and feed the colt laxative food or grass.

Rickets.—I have a hog that was crippled when walking for some time and is now running in pasture. This hog is fed some corn and middlings with grass. C. E. R., Alamo, Mich.—Give your hog 10 grains salicylate soda at a dose in feed three times a day.

Abscess.—One week ago I wrote you regarding a horse that had a bunch on shoulder; since then it opened and discharged pus; there is also another bunch on opposite shoulder the size of a teacup. Our local Vet. lanced him. I would like to know the best way to treat a case of this kind. O. P., Standish, Mich.—First of all, it is important to give the horse rest, this removes the cause. Open abscess and inject in some peroxide-hydrogen, then apply one part tincture iodine and eight parts water, making two or three applications only, then inject abscess with one part carbolic acid and 20 parts water, or dissolve 1 oz. sugar of lead, 3 ozs. sulphate of zinc and 1/2 oz. carbolic acid in a quart of water and apply twice a day after using dioxygen or peroxide hydrogen.

Wind Gall—Blocked Quarter.—I have a two-year-old colt that has a wind puff which feels much like a bog spavin, but it does not cause lameness. I also have a cow that is troubled with a blocked udder, only one quarter being affected. H. A. S., Milan, Mich.—Apply one part iodine and eight parts lard to puff every two days and apply one part fluid extract belladonna and two parts alcohol to blocked udder twice a day.

Thrush—Cracked Heels.—I have a horse that is troubled with thrush and another that is troubled with scratches. F. R., Burt, Mich.—Apply peroxide hydrogen to suppurating frog twice a day; ten minutes after using it dust in calomel then apply a piece of oakum to keep out dirt and your horse will soon get well. Kindly understand that filth and wet is the principal cause of thrush. Apply the following lotion to heels twice a day: Dissolve 1/4 lb. acetate of lead, 3 ozs. sulphate of zinc and 2 ozs. of carbolic acid in a gallon of water and you will find this a useful remedy for cracked heels.

Asthma—Roarer.—Since last fall my 15-year-old horse has had a sort of obstructed breathing and shows it only when exerted, but when allowed to stand still two minutes he breathes almost normal. His health is seemingly not affected. C. W. W., Remus, Mich.—Your horse has throat trouble; drugs will not relieve him, but a surgical operation performed by a competent veterinarian might relieve him very much.

Founder.—I have a brood mare that soon began to show soreness and stiffness after she had her colt. She does light work and her colt is only three weeks old. E. M. H., Elsie, Mich.—Give her a dessertspoonful of nitrate of potash and a teaspoonful colchicum seed in feed night and morning. Also apply one part turpentine, one part aqua ammonia and five parts olive oil to coronets in front three times a week. If her feet are much too hot, stand her in wet clay one hour night and morning.

Bunch on Fetlock.—Last winter my four-year-old mare cut her fetlock, the joint swelled badly and a bunch grew in wound; now the joint is swollen and a bunch where wound healed. I might say that nearly all the stocking in joint goes down when she has exercise. J. M. D., Dryden, Mich.—Give horse 1 dr. iodide potassium at a dose in feed twice a day. Also apply iodine ointment to joints three times a week.

Indigestion—Asthma.—My cow was in good condition last spring and gave a good big flow of milk; now she gives a pint at each milking. She breathes short and quick. Our local Vet. says she has either wolf in the tail or hollow horn and he bled her, but she is no better. J. C. B., Standish, Mich.—No such ailments as wolf in tail and hollow horn; it is a condition, the result of other ailments. Give her 1 oz. fluid extract gentian, 1 oz. fluid extract cinchona and 2 drs. fluid extract lobelia at a dose in a pint of water as a drench three times a day.

Cure That Lam Horse Without Risking A Penny

We Take All The Risk, And Protect You With A \$1000 Guarantee Bond



WE want to show you that there isn't any affliction causing lameness in horses that can't be cured, no matter how long standing. We will do this for you absolutely free. Fill out the "Free Diagnosis Coupon" and send it to us at once.

It means money to you to relieve your horse of its misery at once. Ask us—and you will get the best and most reliable diagnosis absolutely free. All you have to do is to fill out the "Free Diagnosis Coupon," mark just where your horse has a swelling, sore or any one of the big number of possible causes for lameness, and send it to us. We will then give the coupon to our trained Veterinary Specialist for his expert diagnosis. This diagnosis is invariably correct. We then inform you of the cause of your horse's lameness and the remedy that will absolutely cure him. We do all this for nothing.

Be Positive, Know What You Are Doing and know that you are treating the right spot in the right way. Don't disfigure your horse and reduce his market value. Write to us. Get our "Free Diagnosis." You paid good money for him when he was sound. What is he worth to you now, or anyone else when he has a Spavin, or Ringbone, Thoroughpin, Curb, Capped Hock, Shoe Boli, Sprung Knee, Ruptured Tendons, Sweeney, or any one of a hundred different causes of lameness that your horse might be heir to. You know that he isn't worth 50 per cent, no—not 25 per cent of his original value.

He Asks You To Please Send This

Relieves Cases Formerly Considered Incurable

No matter how long your horse has been lame, or what the nature of his lameness, you can absolutely rely upon Mack's \$1,000 Spavin Remedy. We know of many cases where owners have paid out big fees and had valuable animals tortured with "firing," "blistering" and other good-for-nothing methods and as a last resort tried Mack's \$1,000 Spavin Remedy, and were amazed at the painless, positive, quick and permanent cure.

Nearly Every Mail Brings Us Letters Like the Following:

"The remedy you sent me cured the two horses that the hoof was coming off. The mule's foot was nearly off when I got the medicine, but in five days the mule was able to walk on it. The horses are working every day, and have been since using your remedy the third day. It is the best medicine I ever saw for the foot. Our Vet. said those horses would not be able to work in 12 months, but he sees his mistake now. I recommend your medicine to every one as I know it is all O. K." Yours truly, Ludowici, Ga., Dec. 7, 1910.

"I am pleased to tell you that Mack's THOUSAND DOLLAR SPAVIN REMEDY has proved far beyond my expectations. My horse had been lame with side bones on each side of foot for about eighteen months, and I had thought of shooting him at different times. I tried to work him but he would go so bad he would hop along on three legs. My neighbors told me he would never be of any use as they had had horses with the same trouble. I tried other remedies without success, but am working him now and he is sound, and have tested him well. I recommend your Mack's \$1,000 SPAVIN REMEDY to all." Yours truly, Summerland, B. C., Dec. 4, 1910.

Your Druggist Will Obtain Mack's \$1,000 Spavin Remedy For You if you ask him. Price \$5.00 per bottle. If he refuses, remit \$5 to us and we will see that your order is filled without delay. Every bottle is absolutely guaranteed, and is accompanied by our \$1000 Warranty Bond, which insures you that your money will be refunded if the remedy fails to do all we claim for it, as stated in our guaranty.

McKALLOR DRUG COMPANY Distributors Binghamton, N. Y.

FREE DIAGNOSIS COUPON



On picture of horse mark with an X just where swelling or lameness occurs, then clip out coupon and mail to us with a letter, telling what caused the lameness, how long horse has been lame, how it affects the animal's gait, age of horse, etc. We will tell you just what the lameness is, and how to relieve it quickly. Absolutely no charge. Write today.

Free Book "Horse Sense"

Send us the Free Diagnosis Coupon, get absolutely free a copy of our book "Horse Sense." Describes and illustrates diseases of horses' limbs, shows correct name for every part of horse and tells valuable facts every horse owner ought to know.

ABERDEEN-ANGUS.

Herd, consisting of Trojan, Erice, Blackbirds and Prides only, is headed by Egerton W. a Trojan Erice, by Black Woodlawn, sire of the Grand Champion steer and bull at the International in Chicago, Dec., 1910. He is assisted by Undulata Blackbird It.

WOODCOTE STOCK FARM, Ionia, Mich.

TOP NOTCH HOLSTEINS

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

McPHERSON FARMS CO., Howell, Mich.

30 As Choice Holstein Cows

as you will find anywhere in Ohio or Michigan. I hope to sell 15 before Alfalfa haying time. You can have your choice of one or 15. A few good bulls and bull calves. L. E. CONNELL, Fayette, Ohio.

HOLSTEIN-FRIESIAN Cattle and Duroc Jersey swine. Bull calves for sale from A. R. O. Cows. E. R. CORNELL, Howell, Michigan.

HOLSTEIN BULL CALVES For Sale—From A. R. O. dams. Sire has 75% of the blood of the sire of Grace Fayne 2nd's Homestead. E. COLLIER, Fowlerville, Mich.

Holstein Bulls—Cows with a 11.12 dam and 25-lb. g. dams prize for less than \$200. Also 3 more at bargain prices. LONG BEACH FARM, Augusta, Kalamazoo Co., Mich.

FOR SALE—Reg. St. Lambert Jerseys, Cows and Bulls from high producing stock. C. A. BRISTOL, Fenton, Michigan.

FOR SALE—Holstein Bull 2 years old \$125. Bull Calves 6 months to 1 year \$50 to \$100. Bred heifers \$150 to \$200. Oldest herd in Ind. Send for Photos and Pedigrees. W. C. JACKSON, 715 Rex St. South Bend, Ind.

HEREFORDS—Both sexes and all ages for sale. Also Poland-China hogs. ALLEN BROS., Paw Paw, Mich.

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

JERSEY BULLS—Reg. Ages from six months to maturity. Dams high producers. Prices right. W. E. SHELDON, Litchfield, Mich.

LILLIE FARMSTEAD JERSEYS.

HERD BULLS; Vidas Signal St. L. No. 58197. Jubilee's Foxhall, No. 82299. Bull calves sired by these great bulls, and out of splendid dairy cows, many of them in test for register of merit. Also a few heifers and heifer calves for sale. Write for description and prices. Satisfaction guaranteed, or money refunded.

COLON C. LILLIE, Coopersville, Michigan.

Register of Merit Jerseys. Official yearly lot of young bulls from dams with official records of 483 pounds and upwards of butter. T. F. MARSTON, Bay City, Michigan.

DAIRY SHORTHORNS of the Best Milking Families. All milk weighed and records kept. A young bull 5 months old for sale. Dam of Sire has averaged 55 pounds per day for 4 mos. W. W. KNAPP, R. D. 4, Watervliet, Mich.

REGISTERED JERSEYS For Sale—Some combining the blood of St. Louis and Chicago World's Fair Champions by HERMAN HARMS, Reese, Mich.

FOR SALE—Choice Shorthorn Cow due July 10, also choice double standard Polled Durham Bull. L. W. SUTHERLAND, Oxford, Mich.

Dairy Bred Shorthorns—Only one bull left. 7 mos. old. Price \$55 cash or good note. J. B. HUMMEL, Mason, Mich.

FOR SALE—Registered Shorthorn Cattle, both sexes not akin, JOHN SCHMIDT, R. No. 4, Reed City, Mich.

SHEEP.

Oxford-Down Sheep and Polled Durham cattle for sale. J. A. DE GARMO, Muir, Mich.

Oxford Down Sheep—Good Yearling Field Rams and ewes of all ages for sale. I. R. WATERBURY, Highland, Michigan.

Reg. Rambouillets—I have 100 ewes, among them all of my youngest and best, also 85 ewe and ram lambs. Live 2 1/2 miles east of Morris on G. T. Road. Address J. Q. A. COOK.

HOGS.

Durocs & Victorias—Growthy Spring Boars & Gilts of choicest breeding from Prize Winners. M. T. STORY, R. 248, Lowell, Michigan.

BERKSHIRE PIGS combining the blood of the Masterpiece and Premier Longfellow families—the world's best breeding Price \$15. C. D. WOODBURY, Lansing, Michigan.

BERKSHIRES—Young boars ready for service at farmers prices. H. W. WIGMAN, Lansing, Michigan.

Berkshires—Ten gilts bred to the wonderful Duke Pontiac Chief, to farrow in April or May. No better breeding. C. S. Bartlett, Pontiac, Mich.

BERKSHIRES—Registered boar pigs, excellent individuals, breeding unsurpassed. Price \$15. C. C. COREY, New Haven, Mich.

BERKSHIRE Yearling now bred for July farrow, also two fall gilts and choice lot of March farrowed. (Pigs eith. sex.) A. A. Pattullo, Deckerville, Mich.

DAMS BROS., Litchfield, Mich., breeders of Imp. Chester White and Tamworth swine, service boars, sows, and either breed. Shorthorn Cattle, Buff Rock, Buff Wyandotte, W. Orpington, Chks. all breeding stock leading winners

O. I. C. Swine—Bred gilts, males weighing from 150 to 250 lbs. Price and type right. Geo. P. Andrews, Dansville, Ingham Co., Mich.

O. I. C.—March pigs with quality and best pedigree. Order now and get first choice. C. J. THOMPSON, Rockford, Michigan.

O. I. C's For Sale—Best quality, large growthy type, either sex, pairs not akin, some fine bred gilts, choice lot of fall pigs all ages. OTTO B. SCHULZE, Nashville, Michigan.

CHESTER WHITES—Sold out but still in the business of raising Chesters and Holstein cattle. Both Phones. W. O. WILSON, Okemos, Mich.

FOR SALE—Three Chester White Boars, right in every way, farrowed Jan. 15th. Dam, a Grand Champion and sired by The Victor, winner of nine first prizes. Address, BONNIE BRAE FARM, Algonac, Michigan.

O. I. C's, Bred sows all sold. 33 choice Mar. & April farrowed pigs either sex pairs not akin Reg. n buyers name. Fred Nickel, R. No. 1, Monroe, Mich.

O. I. C. March Pigs and Sows' to farrow Aug. & Sept. H. W. CLARK, R. F. D. 4, Brighton, Michigan.

O. I. C's.—All ages, 25 young and 2 yearling sows, safe in pig. Price for a short time \$22 to \$30. H. H. JUMP, Munith, Michigan.

O. I. C.—Choice registered pigs 8 to 16 weeks old, from World's Fair Winners. Glenwood Stock Farm, Zeeland, Mich. (Phone 94.)

O. I. C. Choice Spring Pigs, either sex. Pairs not get first choice. All pigs shipped on approval and Reg. free. HARRY T. CRANDELL, CASS CITY, MICH.

O. I. C. SWINE—My herd is chiefly strain both males and females. Get my price before you buy. Will register free of charge in purchaser's name. A. J. GORDEN, R. No. 2, Dorr, Michigan.

Duroc Jerseys For Sale—A few sows bred for summer farrowing and spring pigs both sex. M. A. BRAY, Okemos, Michigan.

DUROC-JERSEYS—Bred Gilts and spring pigs for sale. CAREY U. EDMONDS, Hastings, Michigan.

DUROCS—25 Bred Sows, of high quality. 10 Excellent Boars ready for service. 75 Fall Pigs both sex. Write or come and see. J. C. BARNEY, COLDWATER, MICHIGAN.

PEDIGREED Duroc Pigs For Sale—About 5 months old, weight about 100 lbs. Express charges prepaid. Give us an order. HAWKS & HAWKS, Goshen, Ind.

Bargains—P. C. Boars ready for service, fall boar pigs. Prize winning African & Embden Geese. Z. KINNE, Three Oaks, Mich.

POLAND-CHINAS—Booking orders for spring pigs. WOOD & SONS, Sallie, Michigan.

Spring Pigs either sex. Fall sows, L. W. Barnes & Son, Byron, Shiawassee Co., Mich.

I PAY THE EXPRESS on DUROC JERSEY Bred Sows, Boars, and Pigs. JOHN H. BANGHART, Lansing, Michigan.

Three Extra Good Fall P. C. Boars By Next In Line. 32 spring male pigs ready to ship. I ship C. O. D. and furnish pedigree promptly. If you want good as the best, write me for prices.

WM. WAFFLE, Coldwater, Michigan.

Butler's Famous Wonders—The big Poland-China, without a peer, combining, size, bone, quality. We're headquarters for everything in Poland-Chinas. Herd boars, brood sows, yearling pigs, always for sale. Registered Jersey Bulls of all ages for sale, our prices are low. J. C. Butler, Portland, Mich. Bell Phone.

BIG TYPE POLAND CHINA BOARS, also fall and early spring pigs. B. P. Rock eggs \$1.00 per 15. ROBERT NEVE, Pierson, Michigan.

LARGE TYPE P. C. Largest in Mich. Sept. & Oct. J. pigs weigh 250 to 300 lbs. Sired by two largest boars and from largest sows in State. Come and see and be convinced. W. E. Livingston, Parma, Mich.

FOR SALE PURE BRED Both sexes. Price reasonable. MURRAY-WATERMAN CO., ANN ARBOR, MICH.

Lillie Farmstead Yorkshires—Holywell Oak Lodge blood predominates. Large Herd. Three service boars. Pairs and trios, not akin. Boars ready for service. A fine lot of spring pigs. Gilts bred for August farrow. The best hog on earth. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

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

"PEER-HO" Fly Nets

The "PEER-HO" assortment of Fly Nets is the largest in the United States. You can get any style with price to correspond.

We particularly recommend the "PEER-HO" Unedda Nets. These are durable, slightly and well fitted. The lashes will not tangle.

If your dealer does not have them, we will send him our descriptive list and will be glad to send one to you also.

Pierson & Hough Co., Detroit, Mich.

DIP For Hogs, Sheep & Cattle Milk Oils the best and cheapest, destroys absolutely scab, ticks, lice, mites, etc. 1 Gallon makes 100 Gallons most effective disinfectant. Get our 28 page Catalog—free for the asking. Agents Wanted. F. S. BURCH & CO. 64 W. Illinois St., Chicago, Ill.

Hay Caps

Stack, Implement, Wagon and Covers. Water-proof or plain canvas.

Plant Bed Cloth. Water-proof Sheet, etc. HENRY DERBY, 123 L Chambers St., New York.

HEAVES

CURE GUARANTEED. Dr. Frank's Remedy Co., Detroit, Mich., will tell you how FREE. Write postal today.

Ridging Castration a Specialty. Write for circular. Work guaranteed or no pay. Am a graduate of Farmer Miles School of Veterinary Surgery. HENRY H. PERRY, V. S. R. F. D. No. 1, Morenci, Mich.

PIGS FOR SALE.

I keep about 2400 cholera proof brood sows and am selling fine grade

Yorkshire, Poland-China, Duroc and Tamworth Weaned Pigs at \$3 each.

ALVAH BROWN'S PIG FARM, GRAND RAPIDS, MICH.

BREEDERS' DIRECTORY.

CATTLE.

Holstein Friesian Cattle—BULL CALVES, Grandsons of Canary Mercedes, W. B. JONES, Oak Grove, Michigan.

(Continued from page 631).

roughage ration for horses. In all of these cases where bad results followed the feeding of millet it was used as the exclusive ration for a considerable length of time, and where it is fed at all this should not be done, especially if any deleterious symptoms become apparent. No unfavorable results have, however, ever been noted from the feeding of millet hay to other farm animals.

The common millet is most generally used for a forage crop in this state, although the German and Japanese millets are grown to some extent. Millet is usually seeded during the last days of May or the first of June, at the rate of about one-half bushel per acre. The plant does best on rich, well drained sandy loam, and poorest on heavy, wet soils. For sowing this late in the season the common variety, which is smaller and earlier than the others mentioned, will be most suitable.

WIRE CUTS.

Farm animals are frequently cut with wire. When the injury is severe it will pay to employ a veterinarian to dress the wound. Where the services of a competent veterinarian can not be obtained, the farmer will have to handle the case himself, and this advice is for the farmer in this predicament.

The first thing to get right is the correct point of view. By this I mean to remember that remedies used are for the purpose of assisting nature and not to cure the disease. This thought, if kept in mind, will eliminate innumerable nostrums, suggested by enterprising neighbors, and insure an opportunity for the wound to heal without harmful interference. We are still much interested in the "fountain of perpetual youth," and in the realm of medicine the laity are groping blindly in the dark, seeking the "where" instead of thoughtfully inquiring the "why."

The ordinary wound will heal if not interfered with. This interference may be from germs, parasites, meddling with the wound, on the part of the man or the animal itself.

The first thing to do, of course, would be to stop the hemorrhage. This can be accomplished by a tight bandage of clean, white muslin, applied either over the wound or above it. A thread may be run under the artery by using a needle, and tied. Do not use flour, dirt, cobwebs or anything of that sort on the wound; they are unnecessary and may produce a dangerous infection.

Having checked the bleeding, remove the clots of blood and cut off the ragged edges of tissue with clean shears. A pan of antiseptic solution should be provided. Place the knife, shears, etc., in this solution, and wash the hands before beginning to dress the wound. See that there is good drainage from the wound and do not tie the wound up with covering of any kind.

In about one week it may be well to change to dry dressing. In the meantime it will be well to get in communication with some veterinarian who will advise you in the case from this time on.

I did not mention sewing up the wound for the reason that in ragged cuts it is better not to do so.

Remember that the principal thing is to get the wound healthy at the start and then it will heal with very little interference.

Col. Agri. College. G. H. GLOVER.

FOOT ROT IN SHEEP.

Not every case of foot lameness in sheep is due to foot rot, but in the majority, where the whole or a large proportion of the flock exhibit signs of lameness and disintegration of foot structure, and especially where it commences between the claws, the disease is specific.

The indications then are the prompt removal from the flock and isolation of those first found affected, and the treatment of the feet of the remainder to destroy the virus and protect them against infection, which is known to take place through the skin between and round the claws.

The usual method of treatment in cases of foot rot is to pare the hoof of the affected sheep, which is often done a great deal too freely, and to apply a dressing of some proprietary or home-made preparation. An example of the latter is a mixture of equal parts of butyr of antimony and compound or aloetic tincture of myrrh, applied on a feather, after all overgrown, loose, underrun, or decayed horn has been removed. It is, however,

most desirable to avoid over-paring, as the too drastic use of the knife results in the springing up of profuse fungoid granulations from the denuded surface which are difficult to repress.

It is essential to remove all loose horn and give free vent to pus, but equally essential to preserve all horn that is sound. Where, however, the flock is of any considerable size, individual treatment is a troublesome and costly business, and something of a wholesome character is desirable. It is not only slow but laborious work to treat each foot separately, but as it entails turning the sheep more or less on its back, it cannot be good for the animal, and in the case of ewes in lamb, is probably a fruitful source of abortion.

The following summary of directions may be of service:

Bath of wood or concrete, 16 feet long and eight inches wide, (12 inches is unnecessarily wide), sides sloping out, ends three inches deep, provided with cross pieces or grooves to prevent slipping, side fences close boarded and to slope out so as to admit sheep walking easily through.

Solution to consist of one pound copper sulphate in one gallon of water, or, if prevention only is aimed at, half this strength. Time to be allowed for thorough solution. Copper sulphate to be bought under a guarantee of 98 per cent purity, and, if possible, to be powdered, not in large crystals.

Sheep, if badly affected, to have hoofs pared before the animals are put through the bath. A day when the grass and soil are dry to be selected.

Sulphate of copper and most substances used being poisonous, a cover for the bath to prevent the stock drinking the solution is an advantage. In any case, the bath must be well fenced in.

If ewes with lambs at foot are treated they should be put through very quietly, to prevent the solution getting on to the teats, and thus into the mouths of the lambs.

The solution should be of sufficient depth to cover the feet as the sheep are driven through it.

To prevent the sheep from jumping out of the trough it is necessary to place hurdles at the sides.

Another method of treating foot rot on a large scale is by driving the sheep over a floor thickly strewn with powdered quicklime, but this offers no advantages over the employment of a sulphate of copper or arsenical solution.

Canada. W. R. GILBERT.

LIVE STOCK NOTES.

Reports from Wyoming are that grass is unusually good on the ranches, and lambing is on a large scale. As the ewes have an abundance of choice grass, they are well supplied with milk, and this helps to make the lambs develop very fast. The season is far in advance of a year ago.

Western packing goes forward at the rate of 560,000 hogs a week, compared with 455,000 a year ago, and since March 1 to latest accounts western packers had slaughtered 6,825,000 hogs, showing a gain of 2,000,000 hogs compared with a year ago and of 555,000 compared with two years ago.

Many cattle that should be fed from one to two months longer are coming to market, their owners being uneasy regarding the future, and many have to be sold for prices not very much higher than are paid for good feeders. Where owners have plenty of pasture lands and corn, such cattle should be kept back until they become fat.

Small herds of cattle are now the rule in southwestern South Dakota, most of the former big concerns having gone out of business, now that there is no room left to pasture their stock. They sold off their cattle last year, and there will be a very small supply for marketing this year. The few cattle left came through the winter in good condition, the season having been wonderfully mild and devoid of snow. It will not be long before a man owning as many as 500 head of cattle will be a rare exception.

The heavy losses of hogs in transit for the Chicago market during the recent hot weather is causing country shippers to use more caution in marketing such live stock. Such weather in May was never seen before and in addition to the many big, heavy old sows that died in the cars, there were many that died after being unloaded at the stock yards. When extremely heavy hogs are shipped to market owners should select as cool a time as possible.

Travelers in Texas report a transformation scene in the cattle feeding industry of that enormous state, many ranchers owning high-grade Hereford, Shorthorn and Angus cattle. These cattle in many instances are superior in quality to the average of the cattle owned in such states as Illinois, Indiana and Iowa, the breeding-up process having been going on steadily for years, and this applies especially to the region within 100 miles of Fort Worth. The Texas cattle feeders have one great advantage over feeders in the middle west, for they can fatten cattle much more cheaply by feeding cottonseed and hulls at home cost, without

paying for long freight hauls. Grass is excellent, and the cattle are given cottonseed meal on grass once daily. Good land can be purchased in that region for \$40 to \$45 an acre.

For the next few weeks plenty of beef cattle are assured for the market, of the country, and this is true of the east, as well as of the west, as Pennsylvania and other eastern states have been feeding unusually large numbers. Kentucky and other western sections are feeding a great many cattle at the big distilleries, and many of these have been contracted by packers and eastern slaughterers. In the course of a few weeks the southwestern grass cattle will be headed marketward, and later there will be supplies from northwestern ranges, but these will be scarcer than in former years.

The consumption of smoked hog meats is now on a large scale, while there is a liberal demand for fresh pork products. The southern demand for cured hog meats is steadily growing, and liberal quantities are going across the water to European countries, especially to England. The best hog sellers are those on the bacon order, these being scarce. Keeping back hogs after they weigh much over 225 lbs. seems to be bad policy.

Sheep and lamb feeders have been a good deal taken back by the wild fluctuations that have taken place in values in recent weeks. Conditions have changed materially, and now that most of the Michigan and Ohio fed stock has been marketed, slaughterers are obliged to depend mainly upon spring lambs and stock fed on grass. Southern spring lambs are being marketed in fast increasing volume.

The wool trade has shown marked improvement recently, and some good sized transactions are reported at various points. Clips have been sold in Wyoming for 10@15½¢ per pound for inferior to prime grades. In contrast to the light wool of a year ago, the Wyoming spring clip is heavy this year. The Nevada clip has been marketed at 13@14¢, and some trading is reported at 12@14¢ in southern Colorado. Perhaps half of the wool in the Soda Springs district of Idaho has been contracted before being shorn, at 15@17¢, largely at 16¢. Medium wool is bringing 15¢ in Ohio.

C. A. Tyler, secretary of the American Hampshire Sheep Association, believes that Michigan farmers should raise far more sheep instead of depending on other parts of the country for feeding lambs, and he believes that trying to produce mutton and wool from the same animal is not profitable. He adds that alfalfa should be grown, and that with more clover and alfalfa hay and less corn, mutton production will cost less.

Texas breeders of leading beef breeds of cattle have had a large demand for a year past from Texas, as well as from Alabama, Louisiana and Mississippi, for pure-bred sires. Many southern farmers realize that constant crop production has seriously injured their lands and that the time has come when stock feeding is imperatively necessary to restore the land to its former productivity. Stockers and feeders in the south, as well as in other parts of the country, are commanding very high prices, and farmers find that breeding and maturing cattle is the right thing to do.

A Chicago grain and provision commission firm that does a heavy business on the Board of Trade of that city, especially in provisions, calls attention to the recent enormous exports of lard and other hog products. "Last week's lard exports were double those of a year ago," the firm says, "and the bacon exports were almost three times as large as at the same time last year. At this rate it is taking around 400,000 hogs a week that must come to this and other markets to supply the export demand for lard, let alone the domestic trade. It is safe to say that such a tremendous volume has never been equaled at this season of the year and it has seldom been equaled at any season, and the whole business, as we view it, is on the most legitimate and competitive basis. It is a natural condition growing out of two years of high prices and scarcity, and we believe, with these prices, or even a cent a pound higher, trade will continue to expand. The New York reports for the last week on lard exports give over 50 foreign ports to which lard was shipped, and this leaves out all other Atlantic ports, but shows the almost universal demand for American lard."

Ranchers in Arizona and other parts of the southwest are developing these semi-arid tracts of territory, and many are raising angora goats, which are extremely useful for clearing the land of brush. These goats feed on the dry brush of the desert and cost nothing for feed, while their long, silky hair brings from 30 to 40 cents per pound. They are sheared twice a year, while their meat and milk are said to be of superior quality.

Early in May, J. H. Bonderson, of Nebraska, who is a fancier of Hereford cattle, as well as a progressive farmer and stock feeder, marketed in Chicago 40 head of coming three-year-old Herefords and Shorthorns of 1,404-lbs. average at \$6.50 per 100 lbs., the highest price paid in that market since the middle of April. The steers were put in the feed lot Oct. 15, and made a fine gain in weight on ear, snapped and shelled corn, with clover hay as roughness, with some oats for about six weeks.

The opening of the grass season has been arousing many farmers to a determination to utilize their luxuriant pasturage in grazing stock, and country buyers in the Chicago market have been purchasing a good many good-mouthed cows, bidding against canner and cutter buyers, and at times going so far as to encroach on the killers' purchases of the fleshier grades of both cows and heifers. There has been a demand for backward cows showing beef strains.

OHIO

The Hay Press YOU Want

Write postal for all facts. Let us prove "Ohio" Superiority. It's the baler you want because it is simple-powerful-efficient; non-breakable Feeder mounted on rocker shaft. Automatic relief spring clutch takes up all strain in heavy charges; smooth and silent action—no jar—no jerks. Speed up to 35 strokes per minute. The only Press made with Automatic Block Dropper—controlled by foot button—gives you free use of both hands—prevents accident or injury to operators—avoids delays because you don't miss feeds.

Capacity Practically Unlimited

Friction clutch pulley keeps the "Ohio" under perfect control—starts and stops it quick. Get our free book and study the details of these and other valuable features. Write postal now.

Address, The Ohio Cultivator Co., 106 Ohio St., Bellevue, Ohio.



THE PAPEC

BLOWS AND THROWS

Here's the only blower ensilage cutter that can be depended upon to do good work under all conditions.

PAPEC PNEUMATIC ENSILAGE CUTTER

Cuts and elevates silage with less power than any other cutter. Easy to set up and operate; no wood to twist and warp; elevates over 50 feet without clogging. Write for booklet, "How to Prepare Ensilage," FREE.

PAPEC MACHINE CO., Box 50, Shortsville, N. Y.

Distributing Points:

Toe do, Ohio, Columbia, Ohio, Indianapolis, Indiana.



KILLS ALL TICKS ONE DIPPING

64 years experience prove truth of this statement. Every tick and nit absolutely destroyed if you use

Cooper Dip

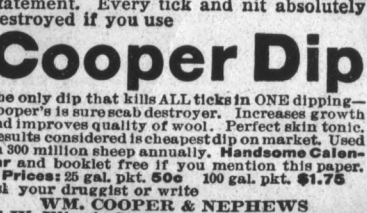
The only dip that kills ALL ticks in ONE dipping—Cooper's is surest destroyer. Increases growth and improves quality of wool. Perfect skin tonic. Results considered is cheapest dip on market. Used on 300 million sheep annually. Handsome Calendar and booklet free if you mention this paper.

Prices: 25 gal. pkt. 50¢ 100 gal. pkt. \$1.75

Ask your druggist or write

W. M. COOPER & NEPHEWS

64 W. Illinois Street Chicago, Ill.



NEWTON'S HEAVE

COUGH, DISTEMPER AND INDIGESTION CURE

The first or second \$1.00 can cures Heaves. The third can is guaranteed to cure or money refunded.

Makes the Horse Strong and Willing to Work. CURES HEAVES BY CORRECTING THE CAUSE which is Indigestion. Send for booklet "Horse Troubles." Explains fully about the Wind, Throat, Stomach and Blood. Newton's Sassafras for colic, auditor mare in foal.

A GRAND CONDITIONER AND WORM EXPELLER

\$1.00 a can at dealers, or express prepaid

THE NEWTON REMEDY CO., Toledo, Ohio



Write for Ensilage Facts

Why you should feed silage, and why you should cut it


Blizzard Ensilage Cutter

which saves one man's time and wages. Runs on least power. Has improved wind elevator, adjustable knives, self-feed table. Wears longest. Is guaranteed. Write for "Evidence" and "Why Silage Pays." Latest catalog included if you will ask for it.

All free. A postal card will bring them. Write today.

Jos. Dick Manufacturing Company

1439W. Tuscarawas St. Canton, Ohio



HARRIS

STEEL CHAIN HANGING WOODLINED STANCHIONS

AND SANITARY STEEL STALLS.

Send for our catalog which shows photographs of some of the most up-to-date barns in the country. You will be convinced that we make the very best there is at the lowest price.

THE HARRIS MFG. COMPANY

316 Cleveland Ave., Salem, Ohio.



Keep the Sparrows out of your Barn Door HANGER

Be rid of these pests and end your hanger troubles for all time by using

Louden's Bird Proof Hangers

Always on the job—can't be clogged in any way, by bird's nests, trash, snow, sleet or ice.

It's the only **DOUBLE FLEXIBLE** Barn Door Hanger made—its track is flexibly hung to the wall and swings out, releasing all accumulated trash.

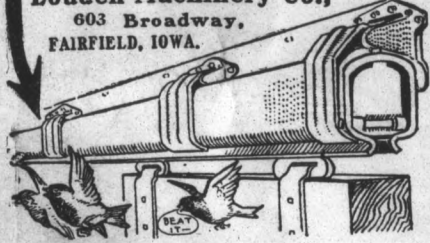
Made of the best steel, absolutely rust-proof, and will give a life-time of perfect service.

Modernize YOUR barn with Louden's Perfect Barn Equipments—Louden's Junior Hay Carrier and Balance Grapple Fork; Louden's Feed and Litter Carriers; and Louden's Sanitary Steel Stalls and Stanchions. They are all money makers on every farm. See them at your dealer's. If he hasn't them write direct to us.

Catalog and valuable booklets sent FREE if you send us your dealer's name. Write today.

Louden Machinery Co.,

603 Broadway,
FAIRFIELD, IOWA.

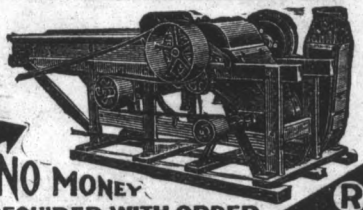


**\$15.95 AND UP-
WARD**

AMERICAN SEPARATOR

This Offer Is No Catch!

It is a solid, fair and square proposition to furnish a brand new, well made and well finished cream separator complete, subject to a long trial and fully guaranteed, for \$15.95. It skims one quart of milk per minute, warm or cold, makes heavy or light cream and does it just as well as any higher priced machine. Designed for small dairies, hotels, restaurants and private families. Different from this picture, which illustrates our large capacity machines. Any boy or girl can run it. The crank is only 5 inches long. Just think of that! The bowl is a sanitary marvel, easily cleaned, and embodies all our latest improvements. Gears run in anti-friction bearings and are thoroughly protected. Before you decide on a cream separator of any capacity whatever, obtain our \$15.95 proposition. Our own (the manufacturer's) twenty-year guarantee protects you on every American Separator. We ship immediately. Whether your dairy is large or small, write us and obtain our handsome free catalog. Address, **AMERICAN SEPARATOR CO., Box 1061, BAINBRIDGE, N.Y.**



NO MONEY REQUIRED WITH ORDER

We would sooner convince the buyer that his money was well invested before asking him to give it up. We only ask you to give our goods a chance to sell themselves. They are made so good they prove themselves a good investment without the aid of salesmen.

ROSS SILO-FILLING MACHINERY is not an experiment. It is backed by 61 years' experience—more experience than any other machinery of its kind that is made. It is known in almost every dairy and intensive farming district in the U. S., and outside of machines themselves, their owners are their best advertisements—our best salesmen.

Our large catalog tells a most interesting story about Ensilage Cutting and Silo Filling machinery. It is free. Write for it.

We also manufacture the Ross Silo
E. W. ROSS CO. Box 14 Springfield, Ohio

THE INDIANA AND OHIO Live Stock Insurance Co.

The pioneer and leader in live stock insurance.
200,000 Paid-up Capital.

Insures horses, mules and cattle against death from any cause. Special 30-day foaling policies issued. Let us show you why you can't afford to be without live stock insurance.

Home Office, 130 Main St., Crawfordsville, Ind

ALWAYS mention the MICHIGAN FARMER when you are writing to advertisers.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

THE GRADING OF CREAM.

Education of the Farmer.

(Concluded from last week.)

It has been urged that inspectors be sent through the country to instruct the farmers in the care of milk and cream. This, however, would involve much expense, and would likely result in but little good. Through the dairy districts, such as Iowa, Minnesota, Wisconsin, Illinois, Michigan, Ohio, etc., the farmers a few years ago delivered to the creameries, clean, sweet milk, which was made into a first grade of butter that brought the highest price. Many of the same farmers are today delivering cream a week old. This is not done because of lack of knowledge, but because their cream, bad as it is, is accepted by the creamery. If one creamery does not accept it another will; the farmer, therefore, is simply following the line of least resistance.

Paying for Quality.

If the creamery men would pay for cream according to its true value there would be a rapid improvement in the quality. The proportion of good table butter that would grade "extras" would probably reach 90 per cent instead of seven to 10 per cent, as is now the case. This assumption is justified by the results obtained from the introduction of the grading system in the state of Maine. The dairy authorities in that state inform us that, at one time, at least 90 per cent of the cream was sour when it reached the creameries, but that within a short time after a system of grading was established, by which sweet cream received a premium of two to three cents per pound of butter-fat, 95 per cent of the cream was sweet when it reached the creamery, and this condition still prevails. This simple system of grading has proved to be of mutual advantage to the creameries and their patrons in this section. The latter have received a price for their product several cents above market quotations, while the creameries have maintained a high standard for their finished product.

An investigation of the conditions in Maine has brought out the fact that the farmers are delivering their cream only two or three times a week during the summer months, but, as stated above, 95 per cent is sweet when it reaches the creamery. In fact, a large amount of this cream is used to supply the sweet-cream trade in the cities, and is from four to seven days old when consumed. The secret by which the Maine farmer keeps the cream sweet lies in the fact that the milk or cream is cooled immediately by being placed in ice water. The result of doing this is generally understood but not often practiced, except on compulsion or when made remunerative to the producer.

Basis for Grading.

The plan that seems to have been most successful in operation is to make two grades of cream, No. 1 and No. 2.

No. 1 cream must be sweet, with a clean flavor, and for it a premium of one to three cents a pound of butter-fat is paid.

No. 2 cream may be sour, but must have a clean flavor, and for this grade a straight price, based on quotations, is usually paid.

Cream that is not clean in flavor, and consequently not included in either of these grades, is rejected. Good butter cannot be made from such cream, and it is not profitable to either the producer or the manufacturer at any price.

The butter-fat content of cream is usually given some weight in grading, as it is desirable that cream may be of the proper consistency for churning without requiring either dilution or concentration. When cream is received at the creamery it is carefully inspected, the two grades being weighed, ripened, churned, and marketed separately. The butter made from the No. 2 cream will usually bring the quotation price, while the butter from the sweet cream, if properly made, will bring a premium over quotations. In this way the creamery can afford to pay its patrons a higher price for fresh, untainted, raw material, and so the farmer gets more substantial reward for the care he has exercised. The consumer is always satisfied to pay an extra price for a clean and wholesome

product handled under sanitary conditions.

Ice Houses and the Use of Ice.

The storage of ice can be made profitable in many parts of the country by using it to keep milk and cream in better condition. Wherever the natural product can be secured the cost of storing is so small that no one need be without ice on this account.

On the basis of a 20-cow dairy it requires about 500 lbs. of ice to cool the cream annually produced by one cow. To this amount should be added 500 lbs. more for waste, or a total of 1,000 lbs. a year for each cow. This amount is sufficient to keep the cream sweet and in good condition, so that, for a herd of 20 cows, 10 tons of ice would be required. In smaller dairies the waste would be greater and proportionately more ice would be required, while with larger ones a proportionately less amount would suffice.

There are approximately 50 cubic feet of stored ice to the ton, consequently for 10 tons it would be necessary to fill a space 10x10x5 feet. An ice house for this quantity should be built 12x12x8 feet, which would allow for 12 inches of sawdust on the sides (sufficient to keep ice under ordinary conditions), and enough space on the top for packing and covering the ice.

From investigation made of ice houses in Maine, where farmers generally store ice, it appears that only a few of them are built of new lumber. In most cases old lumber, or a discarded building, such as an old granary, corn crib, or shed, was used; in fact, any building that will hold sawdust may be used for an ice house. The amount of new lumber required for an ice house holding 10 tons of ice would be about 1,800 feet.

In building a new ice house, or using an old building for that purpose, care should be taken to provide good drainage. The ice should be packed on about 12 inches of sawdust, or if sawdust is expensive, chopped prairie hay or even oat or barley straw that has been well broken in threshing may be used in place of sawdust. Softwood sawdust is better than that from hard wood.

In a small ice house there should be about 12 inches of sawdust between the ice and walls of the house. Ample ventilation should be provided. The most efficient probably is an opening of a few inches under the eaves. This will allow free circulation of air, but will not permit the rays of the sun to shine on either the sawdust or the ice. The sawdust should be kept well packed on the sides and evenly distributed over the top surface of the ice. Sawdust will keep ice much better when dry than when wet.

SOILING CROPS TO SUPPLEMENT DRY PASTURES.

I have in mind a dairy farm which fell off in its milk production scarcely a hundred pounds all through the long, dry summer we experienced last year, because of the use of soiling crops and silage to supplement the dry and almost useless pasture. Many farmers are still ignorant of this practice. It is high time they "sat up and took notice," for in this day of enlightened farming, the old system of turning the cows out in May, and leaving them to rustle for an existence on dry, sparse pastures, won't do. Good farmers regard the cow as a milk machine and she must be kept running "full force" ten or eleven months in the year. We are all after the ever elusive dollar.

On this farm, carrying thirty average Jerseys, they began feeding alfalfa the first week in July, for there were only some twenty-five acres of pasture, rented, and even then, it was noticeably dry. Twice a day, the cows came eagerly into the barn and found their portion of wilted green alfalfa waiting for them. They were fed just what they would clean up nicely, the amount varying, of course, with the different cows. But a skilled feeder very quickly learns just how much to give each animal. The weight sheet helps here, too, for at a glance, the feeder can see just what cow he wants to "tease" to eat more.

There is quite a little skepticism concerning the growing of alfalfa in Michigan. Some have tried it once, but, failing to get a good stand the first time, through some unrecognized error, they have thrown it up. But there are many who have tried it and been very successful. On the farm in question, there were ten acres of second year growth. A fine stand. This year the owner expects to

NO SUCH THING

As Saving Money Through
Buying a Cheap Machine
Instead of the Matchless

SHARPLES

Tubular Cream Separator

The cheap machine will more than lose the price of a Tubular the first year. Many thousand users of cheap separators are discarding them for Tubulars. The cheap machines lasted one year on the average—required ten to thirty dollars repairs—and lost more in cream than the original cost.

Do you call that cheap?

Tubulars have twice the skimming force, skim faster and twice as clean as others. Dairy Tubulars contain no disks or other contraptions. Wear lifetime. Guaranteed forever by America's oldest and world's biggest separator concern. The biggest economy you can make is to buy The World's Best.

On request, a Tubular will be delivered and set up in your home, for free trial, without freight or any other expense to you. Why send any money for some cheap machine?

Separator quality is more important than first cost. Other separators taken in part payment for Tubulars.

Write for catalogue No. 132 and free trial.



30 Yrs

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

"MEN WHO KNOW"

USE THE

DE LAVAL CREAM SEPARATOR

Why should YOU experiment or take chances with anything else?

THE DE LAVAL SEPARATOR CO.

165-167 BROADWAY,
NEW YORK.

29 E. MADISON ST.
CHICAGO.

INDIANA SILOS

Now in use everywhere. Any user will tell you why **Indiana Silos** are the "best and cheapest." Let us send you the Free book that solves the high priced feed question—**"SILO PROFITS."** Our Factories are located at Anderson, Ind., Des Moines, Iowa, and Kansas City, Mo. Write for Silo Catalog Today.

INDIANA SILO COMPANY

1382 Union Building, — Anderson, Ind.

As they sometimes are. As "SAVE-THE-HORSE" can make them



MR. M. F. TRACY, OF PONTANELLO, IOWA.
UNDER DATE OF MAY 1, 1911, SAYS:—"I USED 'SAVE-THE-HORSE' SOME TWO YEARS AGO AND WOULD NOT TAKE \$100 FOR WHAT IS LEFT IN THE BOTTLE IF I COULD NOT GET ANOTHER BOTTLE."

Forkville, Pa.—Enclose \$5 for bottle of "Save-the-Horse." Ten years ago I purchased a bottle and cured the worst bog spavin I ever saw. GEO. H. LILLY, R. F. D. No. 2.

Afton, Iowa, April 16, 1911—Have used your medicine for a number of years. Cannot recommend it too highly. I had a fine black three-year-old road mare which became so lame in pastern joints she could not walk. Had the State Veterinarian out; he punctured and fired it, charged me \$15 and left her in just as bad condition as before. I bought a bottle of your remedy and in about two weeks this mare was as sound as a dollar. F. R. SMITH.

"Save-the-Horse" neither burns nor freezes anything; neither is it blistering poison. It is the most powerful, humane and safest remedy known to veterinary science and practice. Imitated and counterfeited more than any preparation ever made. Could you have stronger evidence of its supreme and unequalled power? Time counts at this season. Send today for a bottle or if in doubt, write us. Describe your case.

Expert Veterinary Advice Always Free
Write for a copy of OUR SIGNED LEGALLY BINDING CONTRACT—IT WILL CONVINCE; also Booklet and Letters from Bankers, Business Men and farmers the world over on every kind of case. **15 YEARS' SUCCESS.**

\$5.00 a Bottle With Signed CONTRACT.

This is a binding CONTRACT and protects purchaser absolutely in treating and curing any case of Bone and Bog Spavin, Thoroughpin, Ring-bone, (except low.) Curb, Splint, Capped Hock, Windpuff, Shoeboil, Injured Tendons and all Lameness. No scar or loss of hair. Horse works as usual. Send for copy of contract, booklet on all lameness and letters from prominent business men, bankers, farmers and horse owners the world over on every kind of case. At all druggists and dealers, or express paid.
Troy Chemical Co., 20 Commercial Ave., Binghamton, N. Y.

put in thirty or forty acres more. So it has been proven in many sections of the state, and just as surely as the farmers become acquainted with its possibilities, the crop will be universally grown. I hope so, surely, for it is a great boon to all stock raisers, cutting, as it does, three times a year. It is especially valuable to the dairyman as a soiling crop.

A word as to feeding it green will be in order here. Never feed it fresh. Cattle will not eat so much of it, and it is liable to cause bloating. But if you cut just enough for a day's feed, and then draw it in just after the leaves have drooped, they will eat it ravenously. It is a good plan to cut in the morning, and to draw it in the afternoon. Since it is heavy, it goes a long way. A small fork full is enough for an ordinary cow.

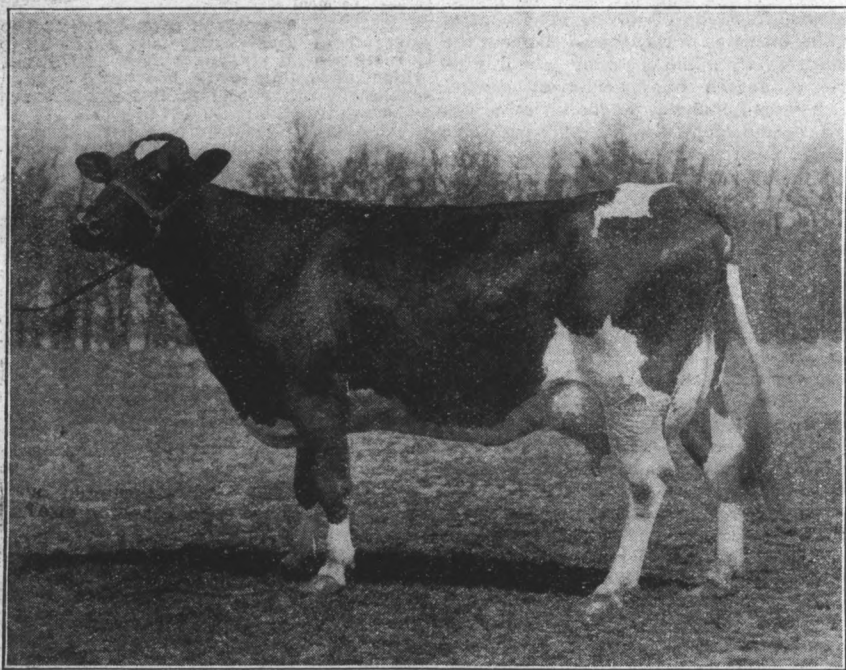
The alfalfa was fed until the clover was ready to cut. Then having a heavy stand of the clover, the remaining alfalfa was cured and mowed, and the clover took its place, for a short time. Then came a short period when the clover became unfit to feed green, so the feeder went back to alfalfa, taking it from the mow. The owner held, and rightly, that the dry alfalfa was better than the dry clover.

But soon the next soiling crop was ready, peas and oats sown together, two bushels of oats with one of peas. The

earliest available green feed in the spring and this is especially good if grown with winter vetch. Following the rye and vetch, the feeder may have new clover, peas and oats together, millet and corn. Every dairyman should make some provision to supplement his pastures, if he wishes to get the most out of his herd. Berrien Co. S. A. MARTIN.

CLEANLINESS IN THE DAIRY.

Of course, there are some dairymen who do not care whether their milk is clean or not, but there are probably a great many who really do not know that their milk is dirty. The consumers have a perfect right to demand clean food and every dairyman should do all that he can to make his product comply with this demand. Some seem to think that if they strain out all of the bits of bedding, hair and other coarse dirt that the milk is clean. They are wrong, for dirt cannot be strained out; it must be kept out if the milk is to be kept clean. Every hair or straw is coated with particles of filth that contain harmful bacteria. If these minute particles are dissolved in the milk a strainer cannot remove them. By feeding hay just before milking the barn is oftentimes filled with clouds of dust, a portion of which is sure to get in the



Pieterje Maid Ormsby. This six-year-old Holstein Cow Produced 145.66 lbs. of Butter in 30 Days, the World's Record.

use of this green feed cannot be recommended too highly. Cows are very fond of it, and it tends to increase the milk flow, rather than keeping it steady, as was shown by the weight sheet.

By the time the peas and oats mixture became too old to feed the mower could be put in the alfalfa again. This was fed as before, and so the cows were run until the sweet corn was ready. The corn was wilted, too, before feeding. It pays to do this with all cut green crops. The sweet corn ran the cows until the fall rains freshened the pastures again.

Ensilage was started the third week in July, and fed twice a day, throughout. From a quarter, to three-quarters of a bushel was fed at a feed, the amount being gauged by the production per cow. Cottonseed meal was also fed twice a day, the feeder mixing it with the ensilage, thoroughly. The amount of the cottonseed meal was judged, as was the ensilage.

The green fodder was waiting for the cows when they came in. The ensilage and cottonseed were fed right after milking. From the middle of July, on, the cows were not returned to the pasture at night but were left in the barnyard and lane.

In this way, the pasture was helped in its task. It soon became very thin, and afforded little else than a place for exercise, open air, shade and water. But these are invaluable items.

The owner of this herd was making money. Others can do the same, but not until they discard some of the old, old methods. Cows should freshen in the fall, and be fed well through the winter. The fresh grass in spring makes them flush again, then, and with soiling crops, grain and silage, they should milk heavy until early fall at least. Not all farmers have the alfalfa. Those that do not can use other crops throughout the spring and summer. Winter rye makes the

milk pail. Each particle of that dust contains harmful bacteria that is imperceptible in the milk. Thus we see that great harm comes from the things that the dairyman cannot see. The milk may be teeming with unseen bacteria and the dairyman will be ignorant of the cause of the bad odor and flavor of the milk and its products. He cannot remove the bacteria after they are once in the milk so he must use care to keep them from getting in.

Another very fruitful source of trouble is the seams of the pails and cans. Unless the seams are run full of solder, milk and other substances are sure to lodge there and form fertile ground for the breeding of bacteria. All vessels used for milk must be well cleaned. Wash with warm water and scrub with a brush and soda or other good cleaners; then scald with boiling water and put in a clean, sunny place. If avoidable, never use rags in washing milk vessels. Some think that greater care should be used in warm weather and this may be correct to some extent, but cold weather does not kill bacteria by any means.

Ohio.

SUBSCRIBER.

NATIONAL DAIRY SHOW.

The farmers and dairymen of the United States and Canada and all friends of the National Dairy Show Association will be interested in knowing that plans are being completed for the holding of the 1911 show. This association has expended more than \$200,000 in promoting the dairy industry. It renders a service not attempted by any other agency. It seeks the support and co-operation of, and aims to work in harmony with, and supplement, and make more effective, the efforts of every other organization and agency for the upbuilding of the dairy industry—an industry representing an annual output of nearly a billion dollars.

Home Mixed Fertilizers Pay

You can make a ton of any brand cheaper than you can buy it. You can make the kind best suited to your soil and crops. Most of the Potash in your soil won't be available for a thousand years. You must supply

POTASH

that's available now, and give your crops a chance this season.

Try 200 to 400 pounds per acre of a mixture of equal parts of Bone and Kainit, or what is better, 800 lbs. Bone, 800 lbs. Acid Phosphate, and 400 lbs. Muriate of Potash.

Ask your dealer for prices or write us. We will sell any amount of Potash Salts, from 200 lbs. (one bag) up.

Our two Free Books, "Fall Fertilizers" and "Home Mixing," will tell you how to save money on your fertilizers and get bigger crops at the same time.

GERMAN KALI WORKS, Inc.

Continental Building, Baltimore

Monadnock Block, Chicago

Whitney Bank Building, New Orleans



Sturges Milk Cans are Sanitary and Most Durable

Your milk cans must be sanitary—easy to clean because you can't afford to risk spoiling a can full of milk. Sturges milk cans are the most sanitary ever made. Every inside seam is soldered as smooth as glass—no place for milk or dirt to lodge.

Sturges milk cans are also the strongest and most durable made. A 1 quality tinned and retinned steel plate is used. That's why Sturges cans "stand the racket." We are careful of details, too. For example, the neck on every Sturges can is seamless, the cover is sanitary and the handles are of one piece, round and never loosen or pull off. Be sure to see your dealer about Sturges Milk Cans or write us a postal now for our

Interesting Book FREE

Tells all about milk cans and milk can construction. Shows all the reasons for Sturges superiority—proves them the best milk-can investment you can make. Throw away your old, battered up, leaky cans and get the sanitary, durable Sturges. Write for free Book No. 46 now. Address

STURGES & BURN MFG. CO., 508 South Green Street, Chicago, Ill.



To every good builder, well informed feeder, Dairyman or experienced owner of silos, our

IMPERISHABLE SILO

appeals strongly. Made from Patented Interlocking Vitrified Clay Blocks or fire clay, it cannot swell, shrink, crumble or decay. Will not blow over, crack or absorb moisture. Hundreds in use and not one has failed. Concrete is liable to crack unless heavily re-inforced with steel, which makes it cost more than the Imperishable. Concrete absorbs moisture and causes ensilage to spoil next to the walls. In the "Imperishable," silage keeps perfectly clear up to the walls.

Ask us for free Booklet.

IMPERISHABLE SILO CO.
HUNTINGTON, INDIANA.



Only While Present Stock Lasts



A GENUINE
GUARANTEED
GERMAN RAZOR

PRESTO "All-in-One" STROP

Both For Only **\$1.20** Post-paid.

THE RAZOR is Hollow Ground $\frac{5}{8}$ inch blade, best razor steel; double shoulder, ebony handle, all ready for use. We imported them direct from Germany in large quantity just before raise in tariff. Dealers sell this razor for \$1.50 to \$2.00.

THE PRESTO STROP is made of finest horse hide leather, chemically treated with "All-in-one" solution, which cannot peel, wear or scrape off, but makes it possible for any man to strop a razor as well as a barber can. This strop has alone sold for \$1. Send your order at once to

The Michigan Farmer Detroit, Mich.



The Michigan Farmer

ESTABLISHED 1843.

THE LAWRENCE PUBLISHING CO., EDITORS AND PROPRIETORS.

39 to 45 Congress Street West, Detroit, Michigan.
TELEPHONE MAIN 4525.NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—600 First Nat'l. Bank Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.
GRAND RAPIDS OFFICE—5 & 6 New Hawkins Building.M. J. LAWRENCE.....President.
M. L. LAWRENCE.....Vice-President.
E. H. HOUGHTON.....Sec.-Treas.I. R. WATERBURY.....Associate
O. E. YOUNG.....Editors.
BURT WERMUTH.....
ALTA LAWSON LITTELL.....

E. H. HOUGHTON.....Business Manager

TERMS OF SUBSCRIPTION:

Five Years 260 Copies Postpaid **\$2.75**
Three Years, 156 Copies, Postpaid.....\$2.00
 One Year, 52 copies, postpaid.....\$1.00
 Six Months, 26 copies, postpaid.....60 cts.
 Canadian subscriptions 50 cents a year extra for postage.

Always send money by draft, postoffice money order, registered letter or by express. We will not be responsible for money sent in letters. Address all communications to, and make all drafts, checks and postoffice orders payable to, the Lawrence Publishing Co.

RATES OF ADVERTISING:

40 cents per line agate measurement, or \$5.60 per inch, each insertion, with reasonable discount on orders amounting to \$24 or over. No adv't inserted for less than \$1.20 per insertion.
 75¢ No lottery, quack doctor or swindling advertisements inserted at any price.
 Entered as second class matter at the Detroit, Michigan postoffice.

COPYRIGHT 1911

by the Lawrence Pub. Co. All persons are warned against reprinting any portion of the contents of this issue without our written permission.

WE GUARANTEE to stop THE MICHIGAN FARMER immediately upon expiration of time subscribed for, and we will pay all expenses for defending any suit, brought against any subscriber to The Michigan Farmer by the publisher of any farm paper, which has been sent after the time ordered has expired, providing due notice is sent to us, before suit is started.

Avoid further trouble by refusing to subscribe for any farm paper which does not print, in each issue, a definite guarantee to stop on expiration of subscription.

The Lawrence Pub. Co.,
Detroit, Mich.

DETROIT, JUNE 17, 1911.

THE CANADIAN RECIPROCITY AGREEMENT.

A Brief History of its Origin and Progress to Date.

About twenty-five years ago the American Newspaper Publishers' Association was organized. It has been steadily growing in number of members and improving in system of work every year until at present it includes nearly every important newspaper (both daily and weekly) of this country. Its members absolutely own and control the Associated Press and every other news-gathering and distributing organization of the country. A few years ago the mills of this country making news print paper (which is made entirely from wood pulp) formed a combination to maintain prices and eliminate competition in selling print paper.

This move on the part of the paper mills at once precipitated a war with the mammoth Newspaper Publishers' Association which has been waging hot ever since. The scheme of a reciprocity agreement with Canada to admit wood pulp and print paper free into this country was adopted by the Publishers' Association and by organized, systematic effort it was uniformly advocated by the entire newspaper fraternity of the country; and as an element to accomplish it the scare crowd of "High Cost of Living" was conceived and magnified into a hideous creature. The entire newspaper force of the country promised the President all kinds of greatness if he would accomplish the enactment of this, to them, very important, though selfish, pact.

Its negotiation in secret until signed is a matter of common knowledge. It was at once gleefully fathered by the free trade Democrats in Congress as a good party principle and it passed the House near the close of the last Congress, but died in the Senate. Now came the great, outrageous procedure of this unjust proposition. By organized instruction every newspaper set up a howl for an extra session of Congress to ratify the Canadian pact; and the President followed their dictum.

The Canadian Parliament has not ratified it and has all along made clear its policy not to act upon it until the U. S. has done so, evidently deciding to avoid the humiliation of having it declined by us after adoption by Canada. Consider-

ing the comparative importance of the two nations it would seem that the proposition should have come in a completed form from Canada.

But regardless of all propriety and all other consequences the special session of Congress was called and has already been in session two months. When it will end no one can tell. This extra session will probably cost the government over four million dollars, but the doubt and uncertainty as to what will be done, not alone with the Canadian pact but with many other propositions, has worked an injury to the general business of the country which aggregates many hundred times the cost of the session. The impossibility of estimating the outcome of threatened tariff changes inaugurated at this extra session, is causing business disturbances that daily increase idle capital and unemployed labor.

The President, with seeming desperation, is utilizing all the immense powers and influences of his position to force this pact through the Senate. He is traveling to distant parts making speeches, sending members of his cabinet in private cars and special trains to every point where gatherings of business men are held and mailing millions of printed arguments, all the expense of which is paid by the government. He is also using all the strength of his patronage and his personal influence to induce all doubtful Senators to pledge themselves in favor of the pact. The entire newspaper power of the country under organized direction is systematically ignoring every word or thought against the pact; but all the speeches or statements at the hearings, that favor it are flashed through the great news distributing organizations and published in full with attractive headlines.

This agreement if ratified will work a great injustice and actual robbery to the farmers of this country, who constitute one-third of our population and conduct by far the most important industry of the nation. Without any adequate organization or means of defense the farmer's very financial life is assailed and his interests disregarded. Not only that, but the President has repeatedly intimidated in his speeches and interviews which have been widely published, that the opposition which the farmers of the country have voiced as best they could, but in no uncertain tones, has been created and fostered by the "interests" that are opposed to the treaty, thus adding an insult to the intelligence of the American farmer to the injury which this pact would do, and indeed has already done, his interests. We submit, "Is it just?" We ask, "Will the great, wise, able body of Senators make possible this great wrong?" We hope not.

The American Newspaper Publishers' Association, controlling the Associated Press and all other news organizations, is today the most gigantic, selfish and dangerous trust of our country. Its support of the proposed treaty with Canada is based on selfishness. It would sacrifice the interests of the farmer for the sake of adding a little more to its own great wealth. The public will appreciate in time what we believe the majority of the United States Senate appreciates now, that this pact was conceived in and promulgated on unfairness, sophistry and deception.

CURRENT COMMENT.

The reciprocity pact has been reported to the Senate by the Finance Committee.

The committee amended it in only one particular, by adopting the Root amendment affecting the paper schedule. The friends of the measure claim a victory and freely predict its passage by the Senate without further amendment. While the outcome is not yet certain, it would appear that some of the doubtful senators have been rallied to the support of the measure, including Senator Townsend, of Michigan, who recently gave out an interview in Washington to the effect that he would vote for the bill. While this will be a bitter disappointment to his farmer constituents whose support placed him in the Senate, and who are so unanimously opposed to the proposition, there is nothing left for them to do but to accept the situation with such grace as they can if, as appears to be the case, Senator Townsend deliberately chooses to ignore their pleas to enjoy the more immediate favor of the administration and the approval of a prejudiced press.

With Senator Townsend's announcement the opportunity of Michigan Farmer readers to do effective work against the

pact has passed. Senator Smith has remained firm in his attitude against the pact, as previously announced; although it is typical of the campaign which is being waged for this measure that almost nothing of what he said before the Detroit Board of Commerce last week in opposition to the measure was printed in the newspapers, while the speech of Secretary Wilson, who appeared as the representative of the administration, was published in full under attractive headlines.

What the weeks of discussion which will ensue in the Senate may bring forth is problematical, but while we must wait for the outcome we know that the effects of the pact, should it be passed, have already been largely discounted in prevailing business conditions, a fact which we firmly believe will finally come home with added force to those business men who, with perhaps honest but mistaken zeal for the public good, have advocated the sacrifice of American agriculture by favoring the approval of this pact.

Federal Control of Corporations.

The inquiry into the workings of the steel trust, which is being made by a congressional committee, has brought out some rather startling testimony. Not the least interesting feature of this testimony is the stand taken by Judge Gary, the official head of the United States Steel Corporation, in favor of government control of big business. He stated before the committee that his company would welcome a degree of government control which would include the fixing of prices by a commission who would base their findings upon a full investigation of conditions. His position has been given public support by Andrew Carnegie, who says in effect that such control is the ultimate solution of the trust problem, and intimates that under such control the making of millionaires would be very much curtailed.

While the frankness of these gentlemen is a matter for congratulation, especially in so far as it relates to the making or influencing of prices by trust methods, yet we believe there is a reasonable doubt whether the method which they advocate would prove a panacea for trust ills. The making of millionaires and multi-millionaires in steel has been more a matter of the sale of watered stock in the steel trust or its subsidiary constituents at an exorbitant price than of the price of steel itself. Of course, the fixing of a fair price for the sale of the products of the steel corporation, even though done by a government commission, must now be done with a view of paying a fair rate of interest on the present capital stock of that corporation, as well as the fixed interest charge on its bonded indebtedness. A scale of prices which would accomplish this result would still pay an exorbitantly high rate of interest on the real capital actually invested in the business.

Thus, while a degree of government control which would include the fixing of prices on trust products might be beneficial to the country, and probably would be beneficial to the trusts, since it would prove a steadying factor in the trade, it would not reach the root of the trust evil. This can be more effectually accomplished through governmental control of stock and bond issues, which would restrict such issues to the needs of the business concerned and insure that the money so secured would go into the business instead of into the pockets of its promoters. With such supervision, we believe there would be less occasion for a degree of control which would extend to the fixing of prices, but in the event that such control should seem to be required, it would mean something toward the effective solution of the trust problem, a result which would be difficult, if not impossible to attain, without some supervision of the capitalization of such industrial organizations and combinations of commercial producers.

HAPPENINGS OF THE WEEK.

National.

The value of the coke produced in the United States during the year 1910 was \$99,696,277, the amount of the fuel being 41,681,410 short tons. The production shows an increase of 10.8 per cent over the previous year and is the largest in the history of the industry.

The employees of the Pere Marquette shops at Grand Rapids have gone out on strike in sympathy with the men in the Wyoming shops who are out demanding better wages and improved working conditions.

Investigation into the charges against union men for participation in destructive methods used to intimidate contractors

to hire union men, is in progress before a grand jury in Indianapolis.

The collections on the streets of Detroit last Friday for funds to fight tuberculosis in this city will total between \$12,000 and \$13,000.

Eighty-three graduate from West Point military academy this month.

The United States senate on Monday passed a bill providing for an amendment to the federal constitution looking to the selection of United States senators by direct vote of the people rather than by the legislative bodies of the several states as is now provided.

The fifty-fifth annual convocation of the Michigan Knights Templar convenes in the city of Saginaw this week.

The senate committee listening to hearings upon the Canadian pact have reported the measure to the senate after several weeks of taking testimony from the different interests of the country. While it has not been definitely determined, it is anticipated that the vote upon the measure will not take place before August.

In order to popularize the army among American people a plan has been suggested to congress to allow six months enlistments so as to make it convenient for high school and college men to enlist.

The government is probing questions connected with the disposition of properties of the Pittsburgh Coal Company to the steel trust for the sum of \$18,000,000. A special panel of the federal grand jury is sitting at Gary, Ind., to take testimony of witnesses there concerning the deal.

The contemplated suit by the United States to recover from the Southern Pacific railroad lands valued at \$500,000,000 will be delayed because of a joker discovered in statutes passed by congress in 1891 and 1896 which provided that the government must bring suit against the grantee within six years after the grant, which, according to the best legal opinion of the department of justice would serve to establish the title of the railroad in the holdings should suit be brought now. An effort will be made at the coming session to repeal the law and thus make the way clear for prosecuting the case.

The police reserves were called out to protect factories of garment makers in Cleveland where strikers threatened the properties.

On June 18 the United States troops patrolling the Mexican border will be withdrawn.

The decision of the customs court of the United States makes it obligatory upon the owner of an animal born in the United States and taken to a foreign country to pay, upon the return of the animal to this country, the regular tax for the importation of other foreign animals. The ruling is working special hardship in Detroit and Port Huron where merchants of the border cities send their wagons across the ferries to deliver goods to patrons there, as the new construction of the statute makes such accommodations impossible.

Foreign.

Early this week the United States and England had not appointed representatives to attend the celebration of the 100th anniversary of Venezuela's independence.

The French people and government appear to be concerned over the military operations carried on in Morocco by Spain, which it is declared at Paris, are not in accordance with the conditions of the treaty between the powers of Europe regarding the affairs of Morocco. Spanish troops have occupied Alcazar, Tetuan and other places.

English officials have warned aviators that they must not fly in London during coronation week.

Bids for the construction of the Hudson Bay line of railroad are being received by the Canadian government, which indicates that the policy of the government to extend lines of communication to the newer parts of the land, is real and determined.

The Italian government has presented a measure which it hopes will be legislated into law, giving the state a monopoly of the life insurance business of the country. The provision will be hard blow to the many American companies which operate in that country.

Latest accounts inform us that the earthquake in Mexico last week resulted in the death of at least 150 persons.

Diplomats are now considering the advisability of drafting a single treaty after the plan of the Anglo-American treaty to be signed by all countries as would enter into an agreement for arbitrating matters arising between any of the powers to the international contract. It is held that such an arrangement is perfectly feasible and would serve to lend force as well as clearness to the interpretation of the relations between countries by having one draft suffice for all.

The Chinese government is demanding from Mexico an indemnity of \$10,000,000 for the Chinese massacred at Torreón during the last days of the rebellion.

MICHIGAN CROP REPORT.

Wheat.—The average condition of wheat in the state is 91, in the southern counties 90, in the central counties and upper peninsula 96 and in the northern counties 87.

On May 1st the condition of wheat was reported as follows. State 93, southern counties and upper peninsula 95, central counties 92 and northern counties 87.

The per cent of wheat sown that will be plowed up because winter killed is 3 in the state, 1 in the southern and central counties and 7 in the northern counties and upper peninsula. The damage by Hessian fly is 5 in the state, 8 in the southern counties, 2 in the central and

(Continued on page 643).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

MICHIGAN FARMER
AND **LIVE STOCK**
PUBLISHED WEEKLY.
JOURNAL
ESTABLISHED 1843.

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

THERE'S sunshine in the country wide,
Where no industrial prisons hide
The golden glow of morning's rise,
Or crimson of the western skies
At eve, when day in glory dies.

A bright dome arches overhead;
Around us charming landscapes spread—
A panorama, where we trace
The Master's hand in every place;
See pictures that reveal His thought
But not the art by which He wrought.
Here the originals were made
That shame the imitator's trade—
The flowers that breathe, the streams
that run,
And lakes that shimmer in the sun.

But who can paint the loveliness
Of Nature in her summer dress?
Or who can doubt of miracles—
Who in the God-made country dwells
And witnesses the quickening
Of Nature—when the breath of Spring,
With silent and mysterious powers,
Restores the dead and vanished flowers
And puts new robe and crown upon
The forest tree's bare skeleton,
While Life, from every bough and sprout,
Hangs its triumphal banners out?
So like a resurrection scene,
We fancy in that robe of green
Are tokens of a Gracious Power
That will restore the human flower.

What joys in every bosom spring
When May and June their pleasures
bring!
All sights we see, and sounds we hear,
Delight the eye and charm the ear.
The blackbirds' trill, and softer notes
That warble from the bluebirds' throats,

A VIEW IN THE COUNTRY WIDE

By Van R. W. HORTON.

And bobolink's and robin's song,
In strains melodious, clear, and strong,
Our sympathetic souls inspire
To worship with this happy choir,
In this grand temple which God's plan
Provided for primeval man,
With shining dome and sapphire walls—
(How cheap Saint Peter's or Saint
Paul's!)

Here strength is waiting for the weak,
And color for the faded cheek;
And health for invalids who come
To Nature's sanitarium;
Where all inhale refreshing breath,
Not tainted with the germs of death,
But laden with the sweet perfumes
Of new-mown hay and clover blooms.
Here children spend the golden hours
In sunshine, with the birds and flowers,
And country air, and farmers' meals
Make happy hearts and lively heels.

Here meditative Age can rove
Through sunny field, or shady grove,
Peaceful and safe, and freely tread
On paths with softest velvet spread—
No warning to "keep off the grass,"
Nor dodging to let "mobiles pass."
No jostling crowd, nor fear to meet
Those perils of the city's street.
Albeit, naughty-mobiles run
Wild through the country roads for fun,
And plow and wear the thoroughfare,
And many a horse and driver scare;

Warn them of danger with a toot,
Then like a cyclone past them shoot;
Smile at their fright, but let them live
If quick the middle way they give!

But there are "autos" good and kind,
Will not run down the lame or blind;
Will mind the law by day or night,
And when they pass keep to the right;
And if a man or horse is sick,
Will bring a doctor double quick!

And in the country, wide and clean,
The infernal "dive" is never seen,
Where drink and vice as one are wed,
And crime and anarchy are bred.
But pure and healthful drink is found,
By Nature filtered through the ground.
Strata of gravel, sand, and clay,
Cleanse all impurity away,
And give it sparkling in the tank,
Without a charge of dime or tank.

Pity that city which must take
Its water from a turbid lake,
The haunt of turtle, frog, and snake;
Or sluggish river that contains
The sewage from the city's drains.
Though learned ones say (perhaps they
think)
That boiling makes it fit to drink,
Good taste prefers that which conceals
No filth, or microscopic eels.

The parents of our mighty race
Were settled in a country place,

"Eastward in Eden," where there grew
All plants most beautiful to view;
With singing birds and flowers graced,
And luscious fruits to please the taste
But tempted were, with discontent,
And made a sad experiment!

But though the serpent and the fall
Deranged the pristine plan,
Heaven still surrounds our mundane ball
And lights the abode of man;
And features of that Paradise,
Where home and love scenes had their
rise,
Are sometimes in the country seen—
The country wide, and bright and clean,
Where virtue, temperance and health
Count more than pleasure, show, and
wealth;

Where noblest characters have grown
That any age or race has shown—
Men wise to guide the ship of state
And make their nation good and great;
Whose honor naught could ever taint,
Whose virtue would become a saint;
Who spurned a bribe in any form,
And stood like Pharos in a storm.

But there are restless country folk
Who long to breathe the city's smoke;
Leave rural homes and go to strive
Where oft the unfittest ones survive;
Where some in seas of pleasure drown,
And vice and crime abide,
And many a tempted life goes down
By moral suicide;
Where poverty and squalor hide
In dens from light of sun,
And wealth struts with Belshazzar's
pride
In a modern Babylon.

THE MAKING OF A PICTURE—BY IRMA B. MATTHEWS.

I am taking it for granted that many of my readers have cameras. I wish there might be one in every home, and I am sure that there is nothing that will give so much enjoyment for the amount of money invested. Of course, you have taken negatives and portraits, but it is about the making of a real picture that I wish to write. There is a great difference between a portrait and a picture. The former may be a fine likeness and valuable only to friends, but the latter must have something about its composition that would attract the attention of a stranger. If a figure-picture, it should tell a story. It will be well, along this line, to study the work of some of the famous artists, taking careful notice of the story-telling phase of their pictures.

I think it goes without saying that picture-making is an art, whether it is done with a brush or a camera. Being myself familiar somewhat with both methods I may say that in some ways I consider the camera the more difficult, although also the easiest mastered by an amateur. When you start to make pictures where figures are used you simply want a good stock of patience, and then some more patience and there will be no danger of failure.

Apropos of this I want to tell you a little incident. I was showing some pic-

tures of my little daughter to a friend and she said: "What cunning pictures? How nice to have a camera! I suppose whenever your baby gets in a cute position you get the camera and snap her." "Indeed I don't," I answered. "Why,

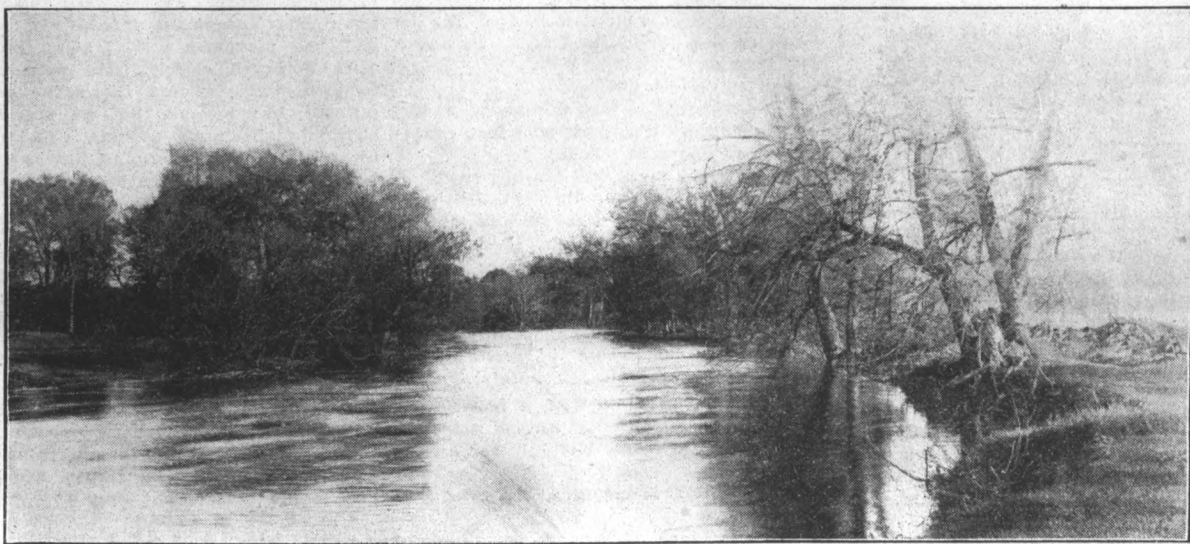
some of those pictures took me hours and even days to get."

"Hours! Days! What do you mean?" she cried in astonishment.

"Just that," I replied. "Some of those pictures I worked over for hours before

tion, and I have often had to wait for another day because when a person becomes tired the attitude is likely to be stiff, and it is the easy, graceful attitude that we work for."

My friend was astonished to find that



taking a picture involved so much thought, and so will many others be who have been satisfied with simply getting a good likeness.

Do not be in too much of a hurry to take your picture. Study it well first. Be sure you know just how you want it, then wait until you get it. With children it is rather a difficult matter sometimes, but once you succeed you are well repaid. Do not tire your subject. When they begin to get tired, no matter how much you want the picture, wait until another day. I have often done this and spoiled many plates besides, before gaining the desired effect.

With animals this is still more difficult for you must usually just get ready and then wait until they assume the attitude that you desire, for it is almost impossible to do anything toward posing them and get a natural picture. They are, in fact, the most difficult of all subjects and when you get some attractive pictures of animals you may congratulate yourself. Another thing, the more simple a picture is the more attractive it is as a usual thing; that is, a jumble of ob-

jects does not usually make a good picture. Your main object usually should be a trifle to one side of the center. If you do not think that this is an improvement try trimming some of your prints in this way. I might say right here that a negative that seems almost worthless will sometimes make a very artistic picture, if the print is properly trimmed. But after all it is to nature herself that we must go for our loveliest pictures. Nothing

can ever quite compare with her.

In conclusion let me say that I hope the pictures accompanying this brief article will illustrate what I have been trying to tell you, for both of them can be duplicated in any locality, and perhaps there may be near your homes much prettier ones. Look for the pretty things around you; it will make life more worth the living and lighten your burdens by the way.

A BOOMERANG BULLET—By J. Albert Mallory.

Although the evidence brought out at the coroner's inquest was of such a nature that practically everyone believed him guilty of murder, Tom Edgerton looked steadily into his sister's eyes and said he was innocent. That was enough for Florence. She went to one of the best lawyers in town and said:

"Do you think you can clear my brother?"

The lawyer looked at her compassionately.

"Frankly, Miss Edgerton," he replied, "I do not. But if you wish I will take the case and do my best. Perhaps we may be able to get a verdict in the second degree."

Florence went in search of another attorney. In the hall she saw a shabbily dressed young man, with bristly red hair and a large nose, mounted on a chair. Above the door he was nailing a small brass sign which read:

**HADLEY SACKETT,
Attorney-at-Law.**

"Is Mr. Sackett in his office?" she asked the red-haired youth.

"He will be in half a minute," was the reply. "Just step inside." He moved the chair out of the way and opened the door.

She entered and seated herself in the only chair which the office contained. The room was uncarpeted; its walls were bare and, besides the chair she occupied, was furnished only with a much scratched and battered flat-topped desk and a confused jumble of books in one corner.

The red-haired youth followed her into the room, carrying the chair. This he placed behind the desk, seated himself and solemnly looked at the girl.

"Mr. Sackett is now in his office," he said. "What can I do for you?"

"I—" Florence was confused. "I was looking for a lawyer and I—" she paused embarrassed.

"I am a lawyer," Sackett announced coldly.

"I am Miss Edgerton. My brother is innocent. Can you clear him?"

"Certainly—if he is innocent. What is he charged with?"

"Why, don't you know? He—he is Tom Edgerton."

"Exactly. He is Tom Edgerton—inno-cent. You are Miss Edgerton, his sister. What next? We don't seem to be getting on very fast. Let me inform you that I am a stranger in San Fernando, having arrived only last night."

For an instant Florence was dismayed. The youth and evident poverty of Hadley Sackett, combined with his ignorance of local affairs, caused her to hesitate. But the cool composure and calm determination of the man as shown in his crisp, abrupt manner, cold gray eyes and square, out-thrust chin, fascinated her. She wondered what to say next.

"I am afraid the case will be a very difficult one," she began. "Everyone believes poor Tom to be guilty. He has always been a reckless boy and his companions have not been of the highest character. But there is nothing really bad about him. Since mother's death two years ago—father died when both Tom and I were very young—I have tried to be both mother and father to him, but he has been very wayward at times."

"After mother's death it developed that people whom she had trusted with the management of our affairs had not acted fairly—had taken advantage of her lack of business knowledge—and Tom and I found ourselves dependent for our livelihood upon a small ranch located near this city. The work has been hard to both of us and, I am afraid, rather irksome to my brother and he would, at times, indulge in bitter invectives against the man who was responsible for our poverty. Of course, that counts against him now."

"In what way?" Sackett asked.

"Why, you see, this man, Martin Gladden, is the one whom he is accused of murdering."

"Ah, and how was the murder commit-

ted? Is there any definite evidence against your brother?"

"There are several remarkable coincidences at least. It seems that Martin Gladden and Tom had a quarrel over a game of cards in a saloon last Thursday. Tom accused Gladden of cheating and used some very abusive language. I am afraid he was slightly intoxicated. Tom did not come home that night and the next morning he was heard to say that Gladden should be shot like a dog (you understand I am telling you what was made public at the coroner's inquest). That evening he returned to the ranch, took his rifle and said he was going out to the foothills to shoot a coyote. He returned at half-past seven and went straight to his room. An hour later an officer came and arrested him."

"For the murder of Martin Gladden?"

"Yes. It appears that Mr. Gladden, who lived on the ranch adjoining ours, was sitting on the steps in front of his house talking to a party of friends. A chicken hawk alighted on a mowing machine which stood in his front yard between the house and the road. Mr. Gladden ran into the house and seized his rifle, then stood in the doorway and fired at the hawk. Immediately afterwards he dropped dead, shot through the head. The people to whom he had been talking had seen Tom pass up the road a few minutes before."

She paused and looked beseechingly at Sackett.

"Go on," he said, "is there any further evidence against your brother?"

"Oh, yes," she moaned, "and it is this more than anything else which makes it look so hopeless for poor Tom. His rifle is a 303 Savage, using a steel-tipped bullet made expressly for that kind of gun. There is only one other like it in San Fernando and that belonged to Martin Gladden. The bullet which killed Mr. Gladden went completely through his head and was found embedded in the jamb of the door behind him. It was a 303 Savage."

"Anything else?"

"Yes. Tom had just purchased a box of cartridges. When his rifle was examined just one was missing."

"And what does your brother say?"

"He says that he is innocent. He says he fired one shot at a coyote and missed. He did not know that Mr. Gladden had been killed until the officer came."

Hadley Sackett continued to gaze earnestly at the girl.

"From what you have told me I should judge it to be a case of premeditated murder," he said dispassionately.

The girl winced as from a blow. Her lips quivered and she winked hard to hold back the tears, but only for an instant.

"My brother is innocent," he cried. "I know it."

"Ah? There is something, then, of which you have not told me?"

"No," she said simply. "But Tom never lies to me and he says he is innocent."

They remained perfectly silent for several minutes gazing into each other's eyes. Then Sackett spoke: "I will take the case and I will win it. I will clear your brother."

She arose and advanced to the desk.

"And the cost?" she asked. "I know such cases are expensive. I have brought this for a retainer—two hundred dollars. Is it sufficient?" She took from her purse a roll of bills and laid it on his desk.

Hadley Sackett wrote a receipt and handed it to the girl.

"But this is for only ten dollars," she protested.

"It is sufficient," he answered. "When the case is won I will present a bill for fifty dollars. I will see your brother at once."

He took a ten-dollar bill from the roll on his desk, escorted her to the door and stood gazing after her until she disappeared from view. Then he turned and took from the floor an old, battered hat, pulled it well down on his head so that

his large red ears looked even larger and redder, and went to the county jail to see Tom Edgerton.

He was shown to a cell where the prisoner sat dejectedly on the edge of a cot.

"My name is Hadley Sackett," he announced. "You never heard of me before. I'm a lawyer and your sister has retained me to defend you. Now, don't waste my time by asking questions. I'll attend to that part of it myself. Cheer up a little and tell me all about it—and tell me the truth. If you lie to me I shall know it."

He seized Tom by the chin and turned his face to the light.

"Now tell me; did you kill Martin Gladden?"

Tom flushed angrily, but he looked unflinchingly into the steady gray eyes of Sackett and said: "No."

"Do you know who did?"

"No."

"Good. Your sister was right. You are innocent. Now tell me the whole story."

It was substantially the same story that Florence had told.

"Where were you when Gladden was killed?" Sackett asked.

"I must have been directly in front of his house," Tom answered. "A high cypress hedge runs along the road there and because of it I could not see the house. I heard a shot but thought nothing of it. That must have been the shot he fired at the hawk."

"Did you hear another shot?"

"No."

After a few more questions the young attorney returned to his office.

Next day the news that Hadley Sackett, a young, unknown lawyer, had been engaged to defend Tom Edgerton caused considerable surprise. Judge Carroll, who dropped into Sackett's office to get acquainted, reported to his curious conferees: "The man is an enigma. He seems absolutely sure of himself. He is poor—horribly poor—anyone can see that. And yet he refused a two-hundred-dollar retainer. He is unmannerly and won't talk—either a fool or a genius, probably a fool."

At the preliminary hearing Sackett sat in a chair tilted back against the wall with eyes closed, evidently asleep. He woke up just long enough to ask the court to grant bail to his client and, on this being refused, subsided again into slumber.

The date of the trial was set for the following month. People were curious to know what course the defense would take and the movements of Hadley Sackett were observed closely. He was known to have twice visited the scene of the murder, but beyond that he seemed to be doing absolutely nothing. Visitors to his office invariably found him with his heels on his desk, wreathed in a cloud of tobacco smoke, reading a popular novel or a text book on political economy.

The evening before the trial Florence Edgerton entered his office.

"Mr. Sackett," she said, "you promised to win this case. I believed you because I then believed Tom to be innocent. But now—" She faltered and Sackett thought for a moment she was going to faint, but she recovered quickly and continued in a cold, hard voice: "I have learned something today that makes me think that after all, Tom may be guilty. He never lied to me before, but—but—"

"Go on," said Sackett.

"Some time ago I found in Tom's room a number of slips of paper—I. O. U.'s with Tom's signature attached. They amounted to a sum greater than Tom could ever hope to pay and would have given the holder the right to take all we have—the property is in my brother's name."

"I remembered the quarrel my brother had had with Mr. Gladden over a game of cards and I went to Tom and asked him the meaning of the papers. He said he had given them to Mr. Gladden in a game of poker and had then detected him in some trickery. That was the cause of the quarrel. Then Martin Gladden sent for him the next day and made a bargain that on condition the papers were returned—the debt canceled—he, Tom, was to use his influence with me to induce me to marry Martin Gladden."

She paused again and gazed out of the window for a moment.

"I had better tell you," she resumed, "that ever since the death of his wife a few months ago, Mr. Gladden had been paying rather more attention to me than either Tom or I liked. He must have thought that by winning Tom over it would materially help his suit. Tom, fear-

ing the loss of the ranch, consented, but afterwards returned and begged Gladden to take the papers back. But Mr. Gladden refused and it was then that Tom was heard to say that Mr. Gladden should be shot like a dog."

Again silence. Then Sackett: "And you think—?"

"I think that Tom, brooding over what he had done, must have lost control of himself that night—"

Hadley Sackett slowly arose to his feet, crossed the room and stood in front of the girl.

"Miss Edgerton," in his voice was a little unaccustomed quiver, "I told you I would clear your brother and I will. For several days I have known what you have told me tonight. Your nerves are unstrung or you would not have doubted your brother's innocence. Go home; you need rest and sleep. Now, good-night."

Next day the court room was crowded. The low buzz of talk was silenced by the rapping of the clerk's gavel. The prisoner, well groomed and handsome, but pale and with dark circles under his eyes, gazed stonily before him. Near him sat his sister, her face partly hidden behind a heavy veil. The district attorney bustled importantly out from a side room, his arms full of law books, and seated himself noisily. Hadley Sackett, red-haired, stoop shouldered, shabby, elbowed his way through the crowd, collapsed into a chair and, with hands plunged deep in his trousers pockets, apparently went to sleep. During the entire time of the taking of the testimony of the prosecution he did not appreciably change his attitude.

In response to the court's oft-repeated question, "Do you wish to question the witness, Mr. Sackett?" he shook his head. He entered no objections; he asked no questions; for all the interest he manifested in the case he might have been a wooden image.

At first the district attorney was puzzled. Then he laughed openly. Judge Carroll's declaration that Hadley Sackett was probably a fool seemed to be amply confirmed in the opinion of all present, and whispered jests at the young attorney's expense began to circulate through the room so that the court had difficulty in maintaining order.

Finally the last witness for the prosecution left the stand. "Have you any witnesses, Mr. Sackett?" the court asked.

"None, your Honor," was the reply, "but I would like to ask the opinion of the court of a piece of evidence presented by the prosecution."

The court consented and Sackett called for exhibit A, which was the bullet that had caused the death of Martin Gladden, and which had been removed in the presence of witnesses from the door of Gladden's house. Sackett took the little, steel-encased pellet of lead and examined it closely.

"I notice," he said, "that this bullet is considerably bent at the nose and slightly flattened on one side. Also on the flattened side are a few shining particles not to be found elsewhere on the bullet. May I ask the court to verify my observations?"

"Your observations are correct, Mr. Sackett," announced the Judge, taking the bullet, "but I fail to see the value of this as evidence."

The whispering in the body of the room ceased. Everyone expected, now that Sackett had finally come to life, he would do something sensational, but he calmly announced that he would have nothing more to say until the prosecution had presented the case to the jury.

In a few brief sentences the district attorney presented the case to the jury. He went carefully over the evidence and showed that it indicated beyond the shadow of a doubt the guilt of the accused. Every link in the chain of evidence was complete. Of course, no one had actually seen the fatal shot fired, but so impregnable was the case as it stood that the testimony of an eye witness could hardly strengthen it. Doubtless the attorney for the defense would endeavor to work on the sympathy of the jury to induce it to return a verdict of murder in the second degree, but he wished to remind them that they were there to see the law enforced.

As the district attorney resumed his seat the spectators told each other that Tom Edgerton would certainly have to hang.

"Have you anything to say in defense of your client?" the court asked.

"Yes, your Honor," responded Hadley Sackett, springing to his feet. The young attorney seemed to be transformed. No

longer was he the listless, the indolent, the sleepy. Every muscle and nerve of his body seemed to be tense and quivering, eager for the fray. His head was thrown back; his face was flushed; his eyes glowing and eager; his jaw set firm.

"I wish to state that my client is innocent," he cried in a ringing voice. "I will present to the court and to the jury certain facts that will prove that Martin Gladden killed himself!"

A gasp of surprise and incredulity issued from the spectators. The district attorney laughed aloud.

"The prosecution," continued Sackett, whirling and pointing a long white finger at the opposing counsel, "has presented evidence which seems conclusive. He has also shown himself to be heartless. He

afforded by the bones of the human head, or the soft wood in which it was found embedded. The prosecution has shown that these rifles have great force and carry a very long distance; and yet the prosecution says that the bullet fired from this gun by the accused, from behind a hedge not one hundred yards away, had only sufficient force to pass through the head of Martin Gladden and bury itself a quarter of an inch in a piece of soft redwood. It is absurd. Had that bullet been fired by Thomas Edgarton from the road in front of the house it would have been found at least six inches deep in that wood. On this point the jury can satisfy itself by making practical tests with the rifle. Now observe closely, please. I am a crack shot with

you. I demand a verdict of not guilty."

Shortly afterwards, when a delegation of the legal profession went in search of the young attorney to offer congratulations, they could not find him. He was walking out towards the Edgarton ranch with Florence Edgarton clinging to one arm. Tom, on the other side, inhaling deep breaths of the air of freedom, was too full of his own thoughts to notice the soft, wondrous light that glowed in the eyes of his sister and Hadley Sackett.

MAKING HOT-AIR BALLOONS.

Commence by making a pattern either of stiff cardboard, tin or zinc, shown in Fig. 1. It should be 3 ft. long by 9 in. wide. Draw a center line from end to end, and mark off from one end six divisions 3 in. apart. At these division points mark off dimensions shown, as 3½ in., 6 in., 8 in., etc., and connect points with a curved line, drawn either free-hand or with a pencil tied to a string, compass fashion. The pattern is then cut out with a pair of shears.

Having made the pattern, select eight sheets of tissue paper of different colors, a little larger than the pattern, and place them on top of each other, clamping them and the pattern together, as shown in Fig. II. Then the eight pieces can be cut out at once by keeping close up against the pattern when operating the shears. Commence cutting at a, and cut from bottom to top. Then do the other side without removing the pegs, after which the top and bottom edges can be cut.

The eight sheets are now ready to be pasted together, which is done by placing two together at a time, as shown in Fig. III, allowing one to overlap the other by about ¼ in.; then they are pasted along the edge from top to bottom. Ordinary flour and cold water paste will not do. It should be made by mixing a little starch or flour in a small quantity of cold water, and then put on the fire to boil, stirring it all the time until it becomes quite thick.

When all the edges are stuck together, a hoop of wire or bamboo should be formed into a ring and securely tied as at Fig. IV, A. The ring should be about 8 in. in diameter, and the bottom edges of the balloon pasted around it (Fig. IV, B). Two cross wires are next added, as shown in Fig. IV, A, to which is attached by means of a very thin wire or a staple a piece of sponge, wadding, waste, or excelsior, well saturated with spirits of wine, alcohol, melted paraffin or turpentine (Fig. IV, C). Paraffin, such as your mother uses to cover her jellies and jams, is perhaps best. It should be melted, and the sponge or piece of excelsior well soaked in it.

To prevent the bottom of the balloon from catching fire, a small protector is made from a piece of blotting paper, as shown in Fig. V. It is about 3 in. in diameter, and slots are cut in to fit over

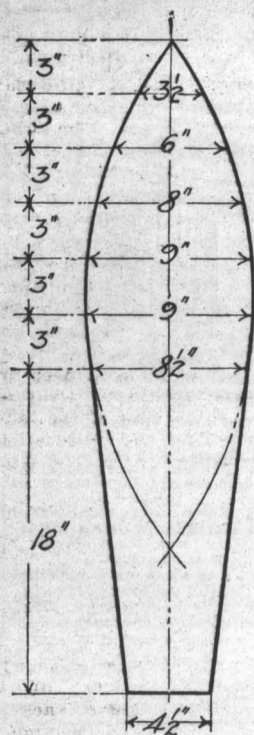


Fig. I.

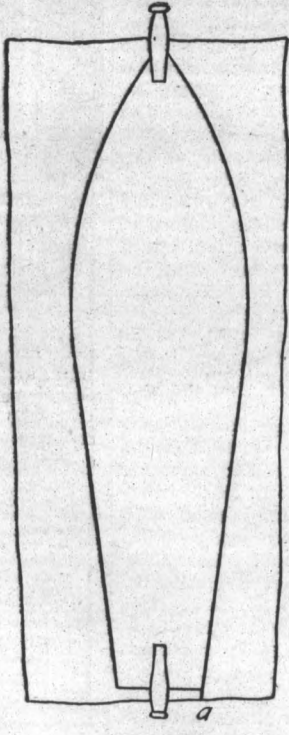


Fig. II.



Fig. III.

was afraid that I would appeal to the jury to find in the second degree. Gentlemen of the jury, I do not appeal to you at all. I demand that you bring in a verdict of not guilty."

"It has been shown that only two rifles in San Fernando could have discharged the fatal bullet. Remember that one of them was the property of Martin Gladden; that he had just discharged it the moment previous to his death. The prosecution has examined his witnesses carefully to ascertain if any of those who saw Martin Gladden die heard more than one shot. But none of them did; and it is because only one was fired, and that by Martin Gladden himself. It has been shown that Martin Gladden raised his rifle and fired at a hawk which had just alighted on a mowing machine not more than fifty yards distant from him. At the same instant he fell dead, shot through the head with the bullet from his own rifle."

The speaker was so evidently in earnest, his words rang so clear and true, that all waited breathless for him to continue. He took from his coat pocket a small piece of brass and passed it up to the judge, who looked at it and then handed it back. Sackett then presented it to the jury for examination.

"That, gentlemen of the jury," he continued, "is a brass oil cup taken from the mowing machine upon which the hawk sat the moment before Martin Gladden fired the fatal shot. I can produce witnesses to prove that it was taken from the mowing machine and that it was in such a position that its top, from which, you will observe, the cap has been lost, was towards Martin Gladden. With the permission of the court I will show the jury how Martin Gladden was killed."

He reached under the table and took from the floor a piece of heavy steel about two feet square, with a hole in the middle and painted white on one side. He crossed the room, opened a door, and the people, craning their necks, saw him fasten the oil cup to a stout post which had evidently been placed for that purpose. With a tape line he carefully measured off a distance of 150 feet.

"This," he said, "is the exact distance Martin Gladden stood from that oil cup the instant he met his death. You have all observed a bright streak on the inside of the cup, you have seen the bright particles of brass adhering to the bullet, and you have seen the flattened appearance of the bullet which could not have been produced by the slight resistance

a rifle, but as I do not wish to die as Martin Gladden died, I have taken the precaution to protect myself with this plate of chilled steel."

He took the rifle of Martin Gladden and loaded it carefully, placed a chair on top of the table and put the barrel of the rifle through the hole in the steel plate which he braced firmly against the chair. Then, kneeling on the table back of the chair, he carefully sighted the rifle and pulled the trigger.

The short, sharp report was followed by little screams from the women present. As the smoke cleared away Hadley Sackett stood by the side of the table holding a flattened bullet between the

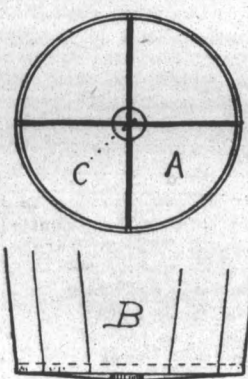


Fig. IV.

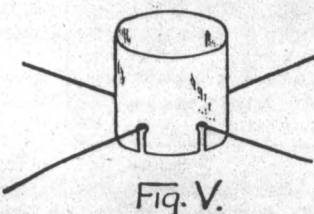


Fig. V.

thumb and finger of one hand and pointing to a black spot on the white surface of the plate with the other.

"You see, gentlemen of the jury, I aimed so that the bullet struck on the edge of the oil cup. The concave surface, while offering some resistance to the shot, could not wholly check its great velocity. The result is that the bullet followed the surface of the cup all the way around and returned, striking this plate a few inches above the muzzle of the gun. That is the way Martin Gladden killed himself. He was an involuntary suicide. Gentlemen, I leave the case with

the wires as shown. It should be high enough to protect the bottom and near sides of balloon from catching fire. Just before the sponge is lighted, this protector should be slightly moistened with water. The top of the balloon can be finished with a circular patch, or the ends pinched together and tied, as shown in Fig. VI, which shows the balloon complete.

To fly your balloon, select an open field away from buildings, where no damage will be done in case it does not go up the first time. Shelter it from the wind while lighting it. Do not let it go until it pulls hard.



Don't Use Laundry Soap on Your Face

JAP ROSE

"The Bubble Bath Soap"

is unequalled for cleansing your skin because it is the original, transparent Toilet and Bath Soap and is absolutely pure. Because it is made of vegetable oils, it cleanses instantly, thoroughly and refreshingly. For genuine pleasure and satisfaction insist on getting

JAP ROSE

Sold by dealers everywhere

REFUSE IMITATIONS

Look for the Jap Girl on every package.

A Large Cake for 10c

KIRK

Established 1839

BINDER TWINE

The best guaranteed Standard Twine \$6.25 per cwt. Standard Manila \$7 per cwt., in 50-lb bales. No bales broken. All orders shipped same day received. Paris Green 20c. per lb. in one lb. packages. Try our twine and write for bargain list of other farm necessities.

BENJ. F. FOSTER ESTATE, Allegan, Michigan.

Farmers it will pay you New Laid Eggs

Direct to us. We pay premiums. Cases furnished. Check mailed when eggs arrive. Write AMERICAN BUTTER & CHEESE COMPANY, 612-14 Broadway, Cleveland, Ohio.

Farmer Wanted

In September, 1911: the services of a farmer and wife at Grosse Point Farms, Michigan. Must be not over forty-five years old, experienced in market gardening, raising poultry, care of cattle and dairy. Wages, \$50.00, and house free. Answer, stating age, experience, references as to character, habits, number and age of children, if any. Address, FARMER, 9 Butler Building, Detroit, Michigan.

LEARN AUCTIONEERING At the World's Greatest School

and Become Independent. Catalogue and complete information FREE. Write for it today. JONES NAT'L SCHOOL OF AUCTIONEERING, 2556 Washington Blvd., Chicago, Ill. Summer term opens July 31.

WANTED FOR U. S. ARMY—Able-bodied, unmarried men, between ages of 18 and 35; citizens of United States, of good character and temperate habits, who can speak, read and write the English language. For information apply to Recruiting Officer, 212 Griswold Street, Detroit, Michigan; Heavens Block, Saginaw, Michigan; Corner 1st & Saginaw Streets, Flint, Michigan; 110 E. Main St., Jackson, Michigan; corner Huron Avenue & Quay Street, Port Huron, Mich.

Let Me Start You in Business!

I will furnish the advertising, matter and the plans. I want one sincere, earnest man in every town and township. Farmers, Mechanics, Builders. Small business man, anyone anxious to improve his condition. Address Commercial Democracy, Dept. D-20, Elyria, Ohio.

YOUNG MEN WANTED TO LEARN VETERINARY profession. Catalogue free. GRAND RAPIDS VETERINARY COLLEGE, Dep. 11 Grand Rapids, Mich.

20 BEAUTIFUL POST CARDS HIGH GRADE COLORED POST CARDS ASSORTMENT 10c
12 BEAUTIFUL COLORED FLOWER POST CARDS 10c
your name or town greetings in gold on each.
UNITED STATES ART, 150 Nassau St., New York.

Wholesale Fish Bargains—18-lb. box Home Smoked Biscuits, \$1.75; 20-lb. pail Family White Fish, \$1.25. Send for fish catalog. SCANDIA FISH CO., Dept. S, Duluth, Minn.

PIANO CAN BE EARNED in LEISURE hours at home. Will ship one piano only in your territory. Write today for particulars. THE BENNETT PIANO COMPANY, Warren Penn'a.

PATENTS: For facts about Prize and Reward offers and Inventions that will bring from \$5000 to Ten Million Dollars, and for books of Intense Interest to Inventors, send 8c. postage to Pubs. Patent Sense, Dept. 89, Barrister Bldg., Washington, D.C.

PRINTING—For Poultry men, Live Stock Breeders and General work. Write for terms. O. N. MENDEL & SON, Gd. Rapids, Mich.

When writing to advertisers please mention the Michigan Farmer.

Woman and Her Needs

At Home and Elsewhere

What Do You Mean By "Devotion To My Family,"

It was last September when the Woman's Improvement Club re-assembled after the vacation. The members were relating summer experiences, previous to getting down to the regular program. One woman had labored through a huge volume on political economy; another confessed to have read nothing but fiction; a third had spent hours in studying household economy; a fourth had taken lessons in plain sewing, and others had simply rested every spare moment and calmly avowed that they gave up ambitions with hot weather. The woman who always says the thing that makes everyone else sniff and feel aggrieved here spoke up.

"I decided last June to devote myself to my husband and children entirely," said she in a self satisfied tone, "So I have not done anything but my house-

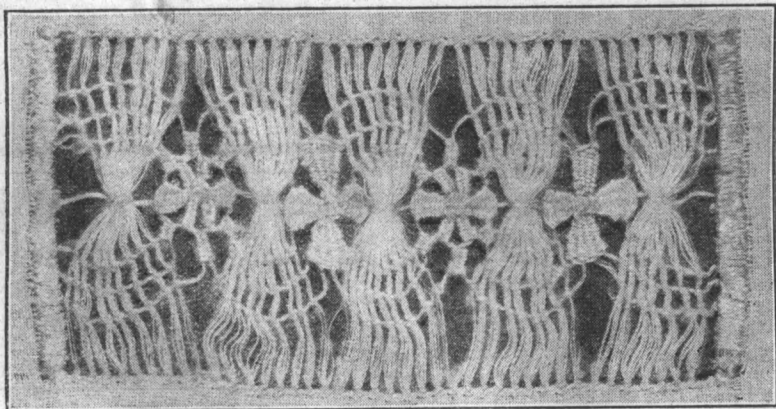
copying by future generations of mothers."

And the experiment is worth copying by this generation. Too many mothers of the old day and of our own make the mistake of failing "to keep up." It is so hard when babies are little and the work piles up and your strength is small, to make the effort necessary to keep up mentally. It takes a positive effort of will to take the needed ten minutes or half hour daily to do the reading or studying or just plain thinking necessary to keep your wits from dulling. But the reward is surely more than ample for the strength of will and body demanded. There is always to come the time when the children will look to you as the fountain of wisdom, and if you are not prepared for them how great will be your disappointment and theirs. Self-culture

space of that number of canvas, hence the pattern would be greatly increased in size on the latter material. While different patterns are utilized yet the idea is quite clearly exemplified by the two samplers accompanying this article; the one on linen of fine quality, and the other on coarse scrim. The linen design is not as wide as the scrim, yet it required the withdrawal of twice as many threads. One must, therefore, learn to gauge the width of her design by the weight of the material, measuring distances rather than depending altogether on counting a certain number of threads. This fact is also plainly illustrated by the difference of space required for the same number of warp or woof threads. Quite often a supposed square, made by withdrawing the same number of threads in both directions, is far from being an actual square. Indeed, the tape measure will be found a much better ally than thread counting when it comes to preparing materials for drawn thread borders.

In any drawn work, after the necessary threads are removed the work must be stretched in a frame, or basted smoothly over stiff paper or oil cloth. Otherwise, in weaving the work is almost sure to be puckered, especially when using flimsy materials as a background. The Mexicans use large frames on the order of quilt frames, so that both hands are free to assist in the work, a great advantage. These frames may be made by the home carpenter, and if pegs or screws are arranged for the corners they may be adjusted to fit various sized pieces with but little difficulty. By tacking strips of strong muslin all around the edge of the frame the article may be basted firmly on all sides and kept perfectly taut.

In both of the samplers shown the threads are withdrawn in one direction only, the scrim design being two and a quarter inches wide, and the linen one one and three-quarters. The edges are hemstitched in parallel rows, three threads of the scrim composing each group, and six of the linen. In the scrim pattern another row of the drawn thread knots is carried along each edge about a quarter of an inch in from the hemstitching. A thread is then fastened at one end at the center, and is used to knot every six groups of the hemstitched threads together. Another thread started just beside the central one knots the first group into two parts out a little distance from center, and is then carried diagonally across the next group to the opposite side, where the third group is likewise divided into two parts. Now the thread again crosses the next group at center, thus working serpentine fashion back and forth as far as may be



Drawn Work on Linen.

work. I found if I did that as I should I would have no time for reading political economy," and she glanced superciliously at the woman who had indulged that idle fancy.

"What has she been doing all her married life if she has just decided to devote herself to her family?" raged the political economy member. "What else should a married woman do, I'd like to know? Doesn't she think I devote myself to my family? Can't I improve my mind and still do my duty by Jack and the babies? I'd just like to have anyone say right out that my work isn't well done," and then the humor of the thing flashed upon her and she burst into peals of laughter.

I suppose if one's work was always done in a way to satisfy the old-fashioned "perfect housekeeper," few mothers of two children would ever find time for much reading or study. But fortunately for the human race, the old-fashioned way is rapidly passing out of sight. Kitchen helps and approved methods of slighting, now enable women to get through with enough necessary work to keep the family healthy and happy, and still have time for study. Kitchen floors no longer need to be scrubbed two or three times a week, linoleum and paint have done away with that. Sheets are not ironed until as smooth and shiny as table linen, while knitted underwear makes it possible to dispense with ironing these garments at all. Simpler methods of cookery do away with so much pie and cake baking, and cream separators take out a large and heavy share of the mother's work.

And it is good to see how many women are taking advantage of the time thus given them. Mothers, especially, seem to be imbued with a desire to learn.

"My brothers were always ashamed of mother, after they went to high school," said one mother of two boys, "and I'm just bound and determined that my boys won't grow up to be ashamed of me."

"Well, they will," growled the hard-headed man of the house. "It's the nature of boys to think they know more than their mothers, so you might as well spend your time visiting instead of being always grubbing over books."

"Anyway, I'm going to try to make mine think I know more than they do," declared the woman vehemently as she picked up an English history. "If my experiment succeeds it will be worth

is as much an act of "devotion to one's husband and children" as is the baking of bread or the darning of socks. And in the way of mental improvement, remember it is far easier to keep up with the procession than to lag behind for two or three years and then try to catch up again.

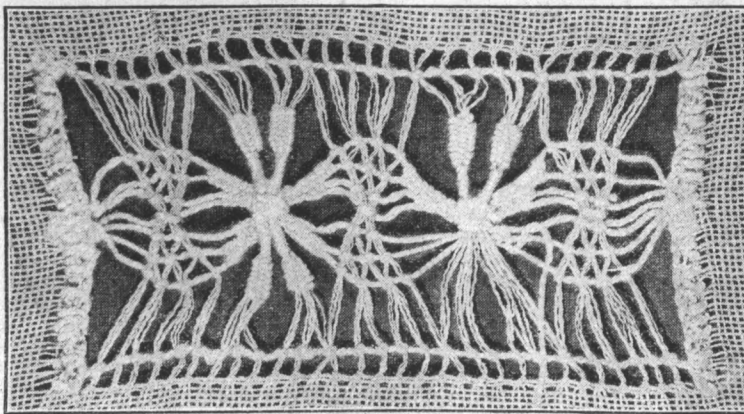
DEBORAH.

GOOD DESIGNS FOR DRAWN WORK.

BY MAE Y. MAHAFFY.

No. 1.

Drawn thread work is the name given to a decorative finish for fabrics from which a certain number of warp or woof threads, or some of both, have been withdrawn. Its usage is well nigh unlimited, since it is equally appropriate for household linens and fancy work, and for the various accessories of dress. Its charm goes without saying, the mere lace-like fliminess of such work appealing



Drawn Work on Scrim.

to the most fastidious. It is known in varying methods and patterns in almost every country on the face of the globe, even some of the most savage tribes ornamenting their garments with it, though in a rather crude form oftentimes.

It is applicable to any material from which the threads may be withdrawn, ranging from the finest handkerchief linens to coarse canvas or scrim. It is needless to say that the fabric used has much to do with the results of the work, for, given the same pattern to be followed on a fine grade of linen and on a coarse canvas the results will be very dissimilar. The same number of threads of the linen would not equal half the

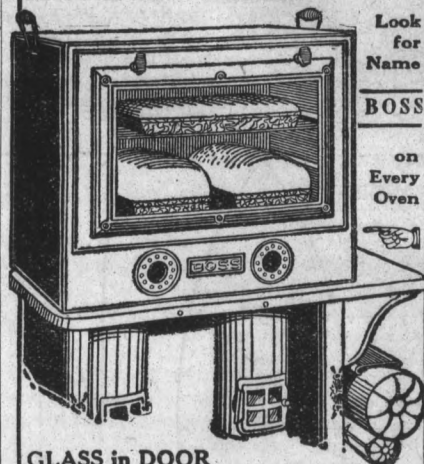
necessary. Another thread is run in exactly the same manner, starting from the opposite side of the central thread, so that both ends of the various groups are treated alike. The next pair of threads separate the alternate groups into thirds, while still another pair divide them into fourths, the former groups being divided as equally as possible.

The woven figures are now placed on the threads which cross every other group. A knot secures all these threads together at the center, and is coiled or wrapped around them a few times to make a solid disk. The thread is then wrapped around half of the groups running toward one edge for a distance of a

USE A PORTABLE BOSS OVEN

With Patented GLASS DOOR

on your stove or range, either oil, gasoline, acetylene, alcohol or gas. No more spoiled bakings or worry—No more wasted heat—No more jarring or chilling of oven. Housewives can see their baking without opening door. Economy and convenience both guaranteed in the BOSS—a polished blued steel oven lined with tin and asbestos.



Look for Name BOSS

on Every Oven

GLASS in DOOR

is guaranteed not to break from heat because it is secured by our patented yielding pressure retaining strips, which permit expansion and contraction. Glass door fits snugly in one-piece beaded front, and is held tightly in place with two turnbuckles, preventing escape of heat.

Baking qualities and ventilation superior to any other oven or range. All heat goes right into the open bottom, and is perfectly distributed to all parts of the oven by means of our patented Heat Deflector. Flame always visible through small mica windows. With the BOSS a baking costs less than a cent. It will many times over pay for itself in saved bakings to say nothing of saved fuel.

Ask YOUR Dealer to show you the BOSS Glass Door Oven. INSIST upon seeing the name "BOSS" stamped in the front of Oven. Then you know that it is genuine and guaranteed.

FREE: Our valuable Recipe Book, containing many cookery hints and full description of BOSS Ovens sent FREE on receipt of postal, plainly written, giving your own and your dealer's names and addresses.

THE HUENEFELD CO. 2731 Spring Grove Ave. Cincinnati, O

JUST NOW!

Serpentine Crêpe is the height of fashion—the prevailing vogue. It makes up

into the most artistic gowns, kimono, street dresses, lounging robes, outing suits, shirtwaists and children's dresses. Costs so little that women of taste and refinement everywhere prefer

Serpentine Crêpe

The beautiful designs, as well as the black, white and all the fashionable plain shades, are a revelation—they are really exquisite. You should see them! To see them is to buy them! No ironing—just wash, shake out and dry it—lightens household cares!

The rich character and long wearing quality are guaranteed by this Pacific Mills trade mark on every piece. Look for it and refuse the cheap imitations that disappoint.

If your dealer doesn't carry the genuine trade marked Serpentine Crêpe, send to us for free samples and list of retailers who will supply you

PACIFIC MILLS - BOSTON, MASS.

WE SHIP ON APPROVAL
without a cent deposit, prepay the freight and allow 10 DAYS FREE TRIAL.
IT ONLY COSTS one cent to learn our unheard of prices and marvelous offers on highest grade 1911 model bicycles.
Do not buy a bicycle or a pair of tires from anyone at any price until you write for our large Art Catalog and learn our wonderful proposition on first sample bicycle going to your town.
RIDER AGENTS everywhere are making big money exhibiting and selling our bicycles. We sell cheaper than any other factory.
TIRES, Coaster-Brake rear wheels, lamps, repairs and all sundries at half usual prices.
Do Not Wait! write today for our special offer.
MEAD CYCLE CO., Dept. T-77 CHICAGO

DAISY FLY KILLER
placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Can't spill or tip over, will not soil or injure anything. Guaranteed effective. Of all dealers or sent prepaid for 20c.
HAROLD SOMERS
160 De Kalb Ave.
Brooklyn, N. Y.

WANTED—Girl or woman to assist a German woman cook in the kitchen and dining room. Permanent position, wages \$18.50 per month with room, board and laundry. State Psychopathic Hospital, Ann Arbor, Mich. J. B. DRAPER, Sec.

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

third of an inch, and is then woven in and out between these groups for a like distance. By running the needle down on the wrong side in this weaving it is brought back to the center ready to complete the other groups on this side in the same way. Then those on the opposite edge are woven to correspond. This leaves the threads which were placed through the center, and they are utilized as the foundation for the weaving at either side. The top devices include the central thread also, giving these one more foundation thread than those below the center. On the four threads the weaving runs out for a quarter of an inch on all; then the two lower threads are omitted and the weaving continued for the same distance on two only. For the lower threads the weaving is done over three for a quarter of an inch, and the upper one then dropped, the same amount of weaving proceeding on the two remaining.

In the linen sampler the central thread gathers the groups into clusters of eight each. Three pairs of threads are then placed at regular intervals on either side of the center, separating these clusters into their individual groups again. These threads are made to cross between groups, not over another group as in the scrim sampler, so that between every cluster foundation threads are laid for woven devices. These devices are of two varieties, alternating throughout the border. The Maltese cross forming one of these devices is a familiar one to drawn thread workers generally, having always been a decided favorite for filling spaces. Three threads, the central one and one at either side, are used for the side arms of the cross, the weaving running out for about a third of an inch. The other arms are woven over four threads each for the same distance.

The other device used in this sampler has the side arms worked over the three threads, as before, but the lower and upper sections are divided, so that two divisions of weaving are placed over the two pairs of threads, their length being little more than a quarter of an inch. Beyond these sections another is woven over the central threads, one from each of the other sections. A trifle smaller block is then woven over the thread remaining from each section with one from the trio composing the side arm.

THE SUNDAY DINNER.

Nut Soup
English Meat Pie
Baked Potatoes in the Half Shell
Spinach
Combination Salad
Sponge Pudding.

Nut Soup.—Stew one quart of chestnut meats which have been skinned, in enough water to a little more than cover. Press through a fine sieve and add one quart of white stock and heat to boiling point, then add ample pinch of salt and dash of white pepper, few drops of nutmeg, onion and celery essence and lastly, one pint of beaten cream.

English Meat Pie.—Take finely chopped cold beef, put in a deep baking dish, a layer of the meat, stew lightly with breadcrumbs, season highly with salt, pepper, butter and a few drops of onion juice; repeat the process till the dish is full or your meat used up. Pour over it a cup of stock or gravy, or lacking these, hot water with a teaspoonful of butter melted in it; on top a good layer of breadcrumbs should be put and seasoned and dotted with butter. Cover and bake half an hour; remove the cover and brown.

Baked Potatoes in the Half Shell.—Select medium sized potatoes, scrub thoroughly and bake. Remove from the oven, cut in halves, scoop out the potato from the shell, mash and mix with salt, pepper, butter and a little cream and return to the shell.

Spinach Cooked without Water.—Only fresh spinach can be cooked this way. Wash through several waters and put in a stewpan over the fire. Cook for ten minutes, or until tender, turning over and over and pressing down while cooking. When done, remove to chopping bowl and chop fine. Then return to pan over the fire and add a generous amount of butter, and salt and pepper to taste. Simmer five or ten minutes.

Combination Salad.—Select two good heads of lettuce, split them in half, then wash them in cold water and shake them dry in a napkin, lay them in a salad towel, cut lengthwise some well-cooked red beets and lay them between the heads

of lettuce; boil three eggs very hard, remove the whites from the yolks and cut up the whites into squares and scatter over the salad; then cut some squares of the beets and scatter over. Make the sauce by rubbing very smoothly the yolk with a spoon, add a little cayenne, salt, a large spoonful of dry mustard and a teaspoonful of pulverized sugar. Mix these well together in a basin with a wooden spoon; then slowly add two large spoonfuls of olive oil, and when a smooth paste, add three spoonfuls of the best vinegar. This sauce must be served with the salad.

Sponge Pudding.—Mix four tablespoonfuls of corn starch with a little cold water, then stir it into a pint of boiling water. Add a cup of sugar and the rind and juice of two lemons. Boil one minute, pour while hot over well beaten whites of two eggs. Mix thoroughly and pour into a mold. Serve cold.

SHORT CUTS TO HOUSEKEEPING.

I supply each pair of stockings with a large safety pin. The children are instructed when changing them to remove pin and pin together the soiled ones. Thus the pairs are kept together and if the initial of owner is worked in top much time is saved in sorting them after a trip to the laundry.—Mrs. C. C. R.

A good way to put away furs is to put in a good clean box and then to paste paper all over the outside. Of course, put in a few moth balls.—B. S. W.

Take a piece of yellow laundry soap and shred amongst the woolen clothes that are put away for the summer and it will keep out all moths.—Mrs. R. R. B.

Feather pillows may be freshened and the feathers made light by placing them out of doors in a clean spot during a hard rain. Let them get thoroughly wet, then hang in a warm place to dry. Spots on the pillow cover may be removed with a paste of Fuller's earth and water. Another way to clean the feathers is to place them in a cheesecloth bag and wash them in warm soapy water, followed by several rinsings in clear water. Feathers should never be placed in the sun.—Mrs. J. J. O'C.

Put pieces of inch board under the corners of your lawn swing. It will keep it from rotting and settling in the ground.—Mrs. J. W. T.

HOME QUERIES.

Dear Editor:—In answer to Mrs. C. I. will say that no baking powder soda is used in this fruit cake. The thorough beating as each egg is added "furnishes the lightness," if I may use that expression.—Mrs. S.

Editor Household Department:—I would like to hear from some experienced person, an easy way of ridding a house of bed bugs, at least, easier than replastering and repapering and a general tearing to pieces. Is fumigating sure death, and is it advisable?—Reader.

Read the article, "A Hint to Renters," in the Michigan Farmer of April 29. A thorough fumigating with sulphur works wonders.

A good way to clean stove pipes which are clogged with soft coal soot, is to throw kerosene-soaked cloth in the fire. It is said that burning a piece of zinc in the fire will clean both stove and pipe.—Mrs. A. D., Northville.

A LESSON FROM FAR JAPAN.

BY ELLA E. ROCKWOOD.

In all the curio shops of the Pacific coast cities are found the quaint, wise monkeys of Japan. These are not real live animals, but queer little forms of pottery about one inch high, representing three tiny monkeys sitting on their haunches in a row, or sometimes they are placed in a sort of semi-circle. One monkey has its hands tightly clasped over its lips, another has his ears covered by the same means, while the third figure in the group shuts out everything from his sight by placing both his hands over his eyes. There is a legend accompanying these figures, as follows: The first speaks no evil, the second hears no evil, the third sees no evil.

Is not the sentiment worthy of more than passing thought, and may it not well be applied to our everyday lives? Since this interesting little toy has been placed where my eyes frequently rest upon it, I find I am more careful in passing judgment. In one home it has been agreed that the three wise monkeys be given a conspicuous position in order that the members of the family might profit by their mutely offered suggestion.



The Perfect Soda Cracker

Uneeda Biscuit are the perfect soda crackers. The flour used must meet a perfect test. The very purity of the water is made doubly sure. Even the air in the mixing and bake rooms is filtered. The temperature and humidity of the atmosphere is accurately regulated to a uniform degree. The sponge is kneaded by polished paddles. The baking is done in the cleanest of modern ovens. Then Uneeda Biscuit are packed fresh in the purple and white package that keeps them crisp and good from oven to table. Is it any wonder that

Uneeda Biscuit

are recognized as the National Soda Cracker?

Never sold in bulk

5c

In the moisture-proof package

NATIONAL BISCUIT COMPANY



Everywhere

For Your Enjoyment

Here's an individual among drinks—a beverage that fairly snaps with delicious goodness and refreshing wholesomeness.

Coca-Cola

has more to it than mere wetness or sweetness—it's vigorous, full of life. You'll enjoy it from the first sip to the last drop and afterwards.

DELICIOUS — REFRESHING
THIRST-QUENCHING

THE COCA-COLA CO., Atlanta, Ga.

Whenever you see an Arrow think of Coca-Cola



I SAY—ALL MEN ARE EQUAL

before the law—but it costs money to go to law. You need not go to law to get full value of your products if you weigh them on your own scale. Buy the best and your word is law. Buy from me because for forty-six years I have been fighting for you against trusts and dealers alike, who say that because I think your money should buy as much as any dealer's, they will put me out of business. We need no agents you and I. When you tell me what scale you need I will offer you mine on approval—guaranteed to suit—warranted to be standard and at the same price that your dealer would pay me. No better scale is made—no good scale is sold for less. My offer is free and saves you money.

"JONES, He Pays the Freight," 18 Ley St., Binghamton, N. Y.

For the Benefit of Our Subscribers.

The Michigan Farmer contracts with one of the best Sewing Machine Manufacturers for a number of Sewing Machines and thereby is able to secure the very lowest factory price. These machines are of the very best and we fully guarantee them. In selling them to you we add merely the small cost of handling your order and you therefore secure the machines at practically what they cost at the factory.

Our prices range from \$12 to \$19 and we prepay the freight.

We have prepared a beautiful illustrated and descriptive catalog which we will send on request. Address

THE MICHIGAN FARMER, Detroit, Mich.

POULTRY AND BEES

WITH THE HOT-WEATHER LAYERS.

Laying hens which are still confined to yards and runs require some feeding if the production of eggs would be continued throughout the hot months. I may say that I get best results from a ration of whole corn and a dry mixture composed of 50 lbs. of coarse wheat bran, 100 lbs. high grade beef scrap and 10 lbs. charcoal. The corn is fed in the litter so the hens must scratch for part of it. We feed all they will eat. The other things are all mixed together in quantity in a bin where the feed is available when needed. This material is kept where the hens have access to it at all times, in boxes about a foot deep into which is fitted a loose rack with 1½-in. spaces, to lay loosely on the feed to keep the fowls from scratching in it. This box is ahead of any hopper I have ever seen and I have used a good many.

I like to see the hens spend most of the day contentedly resting in the shade during the hot days. I am pretty sure the feed is about right when I see this, if the egg yield is up where it should be. When I see the hens ranging about and scratching up everything that is loose I begin to think they are after something I ought to be supplying in the feed and I try to discover what it is and furnish it or something to take its place.

An abundance of crushed oyster shell will go a good way toward keeping up the egg yield. Some experiment station tests show that the lime from crushed oyster shell is more available for the production of egg shells than that from any other source, and it is certainly the cheapest.

I find this system of heavy feeding in warm weather, while profitable to follow, produces a considerable number of broody hens. We provide for these in a wire cage open on three sides. If they are taken promptly, usually about three days' confinement breaks up the broody fever and they are soon laying again. After the middle of July we begin to cull heavily and market the culls. At that time the prices are better than later and we are able, by a little care and observation, to pick out the ones that are pretty well through laying.

Ohio. J. T. C.

THE TAPE-WORM IN FOWLS.

Tape-worms have for some years been known to infest domestic fowls. Previous to 1895, outbreaks of this trouble were confined chiefly to Europe, but a few years ago it appeared in one of the flocks at the Maryland experiment station, which led to a study of the trouble by the poultry experts there and the subsequent publication of a bulletin on the subject.

The fowls affected were Plymouth Rock pullets and cockerels from five to six months of age. On successive mornings these fowls died with almost no outward sign of disease. All, however, on postmortem examination, revealed the presence of worms in great numbers in the intestines. The sick birds became emaciated. During the course of the trouble it was noted that the droppings in nearly every case contained considerable yellow mucous. In this material were found the tape-worm segments. During the last stages, perhaps the last few hours before death, the birds became dull and listless. The appetite remained normal until two or three days previous to death, when they became too weak to take food. Most cases exhibited a marked diarrhoea. The feces varied much in color and contained considerable slime. Death came very suddenly and was accompanied by convulsions.

The rapidity of the deaths in this flock necessitated very hasty treatment. The first step, as in almost any other trouble, was the isolation of the affected fowls from the rest of the flock and the destruction of all droppings known to contain tape-worm segments. Large doses of epsom salts were given, the object being to drive the segments from the intestinal tract as quickly as possible. Following this the fowls were given the usual drugs, such as extract of male fern, turpentine, powdered kamala, areca nut, pumpkin seeds, etc., prescribed for tape-worms. The amount of the salts given to produce a purgative effect, varied from 10 grains for birds from one to five weeks old to 40 to 50 grains for one-year-olds and over. For small chickens the salts

should be placed in the feed, while with fowls 15 weeks old or more the salts should be dissolved in water—two teaspoonfuls to every 30, 40 or 50 grains.

CULLING THE CHICKS.

In order to obtain the best results and have the chicks develop into healthy, sturdy breeders we must cull them closely. We must continually cull from the time they are hatched until they reach maturity.

The first culling should commence as soon as the chicks are hatched. The weak ones should be removed from the rest of the brood and placed by themselves. They should be marked so that when they grow to broiler size they can be easily detected should they become mixed with the other chicks. They should never be allowed to mature and be used as breeders. Rather, pen them separately and feed on a fattening ration until they are ready to market.

Look over the flock as often as possible and when a weak or sick chick is detected remove it immediately. This gives the other chicks more room and a better chance to grow and thrive. Another reason for culling often is that others will get a bad impression of your stock should they see weak, undersized chicks about the place. It is true that chicks often overcome their weakness, but if you use them as breeders, and as "like begets like," this weakness will be transmitted to the offspring and your stock will finally become so run down in vitality that you will raise but a small proportion of the chicks hatched.

Indiana. O. E. HACHMAN.

BREEDS OR VARIETIES OF TURKEYS.

Largely as the turkey is bred today, both in the old world and the new, there are, strictly speaking, only two varieties—the Black and the Bronze. Of these the former is more common in the old world, and the latter in the new.

By far the greater number of foreign turkeys which come into this country are bred in Italy and Central Europe. They are smaller in size, as the climatic conditions are not so favorable for rearing them. Many of the Italian turkeys are grey in color, and so, too, are many of the Irish. As there are white turkeys as well as black, there are bound to be grey, though no attempt has ever been made to make a distinct breed of them.

The white turkey is found almost everywhere, but is not especially popular. It is sometimes called the Austrian. In America they go by the name of the White Holland, presumably because they were imported from the Netherlands, but they have no special habitat. They originated, of course, as a sport from the black turkey. They suffer a little from the prejudice which still exists against white fowls or animals, a superstition that such are more delicate than the colored. If certain strains of white turkeys are delicate, there is a very simple reason for it, viz., their numbers are so few that breeders have difficulty in getting fresh blood, and the stock becomes inbred in consequence. The standard weights for white turkeys are: Males, 16 to 26 lbs.; females, 10 to 16 lbs., but the larger weights are seldom approximated. No one need hesitate to keep white turkeys; the hens are good layers and sitters, and the poultts fatten easily, while so far as mere appearance goes there is no breed more handsome.

There are fawn or buff turkeys, but little need be said about them; they are the result of crossing the Bronze with the white. One variety, of deeper plumage than ordinary buff, used to be bred in Pennsylvania under the name of Tuscarawa Red. Few of the buffs or fawns attain to great size, and though some breed them because they like the color, they are not superior in any way to the older varieties.

There is, however, in Belgium a breed of some importance, called the Ronqueres, which seems to be the result of crossing Normandy blacks with both greys and whites. It is purely a market breed, and the hens are of all colors—yellow with each feather edged with black; white and black, and even pure white; but the feet are always white, with white toenails. The typical male is dark grey and dull tawny. They may not be much to look at, but they are excellent table fowls, quick growers, and carry a large amount of breast meat, while the flesh is beautifully white in color; the top weight is about 20 lbs.

In America, besides the universally pop-

ular Bronze, we have the Narragansett, which is largely bred in Rhode Island. Its reputation, in fact, is confined to the New England states. It does not grow so large as the Bronze, but in quality of flesh is far finer. They are rather short in the leg; the plumage is a metallic black, each feather ending in a broad, light steel-grey band edged with black; the flight feathers are black barred with white or grey, showing two narrow bars when folded. In the hens the plumage is much paler and duller. The males weigh from 20 to 25 lbs.; females, 14 to 18 lbs.

The Cambridge Bronze is being crowded out by the American Bronze, which is much larger; in fact, this breed is rapidly, as it were, swallowing up all the others. Table poultry is always bred for size, and as the Bronze is the biggest breed it naturally becomes the most largely kept. It is true that Norfolk turkeys are apparently largely sold at Christmas time, but that is merely the salesman's description. The turkey is plucked and not one out of twenty buyers can tell one from the other under such conditions. In breeding for table a cross between the Norfolk and black and the American Bronze can be strongly recommended.

Canada.

W. R. GILBERT.

ANOTHER METHOD OF PREVENTING SWARMING.

There is another method which will stop swarming and will get you a lot of honey, but I'll tell you right now you may look for some mighty ugly bees. Aside from that, it is the best of any, as it keeps the whole working force together. When you find a colony preparing to swarm destroy the cells and at the same time kill the queen. After eight days destroy the cells again, which will leave them hopelessly queenless. Some of the best cells should have been saved at the time of destroying the queen, and after a few days these queens, which by now will have hatched and probably mated, can be introduced and you will have no further trouble with swarms.

But remember the supers; you'll need one every four or five days if it's a good season. I've had them stacked six or seven high on such colonies when the best of those worked on the other plans had only filled three or four. This is because your whole force are working together. But don't use this method where your bees are near the house or road, or any place where people are passing, for you can hardly get within 20 rods of a yard worked on this plan without danger of being stung, unless you are protected.

There are several other methods of controlling swarming, but as they require special apparatus they are hardly adapted to the use of the average bee-keeper and will not be described here.

Mecosta Co.

L. C. WHEELER.

FORCED SWARMING.

Excellent results are often obtained by swarming the bees after the following manner: After you have had your first natural swarm or two, and you are sure that swarming time has arrived, and you do not wish to watch a month or more for swarms, just finish them up in a day or two. Go to the hive that you have decided to swarm artificially and remove it from its stand, and put in its stead a hive containing four or five frames, with only starters of foundation. Place over this a queen-excluding honey board and a super of section boxes. Next take the combs from the old hive and shake the bees from them down in front of the new one. You can shake them quite free of bees, leaving only a few on the frame to care for the larvae. There will be hundreds more hatched out before night. After brushing all the bees out of the old hive, replace the frames of brood and sent it to one side. Four or five of these hives of hatching brood can be placed on top of each other to retain the warmth should the night be cool.

A few days later queen cells can be taken from the parent hive of those which have swarmed naturally and distributed among the other hives, at this time setting each hive on a stand by itself. I finished a yard of sixty colonies in just a week by this method, and obtained better results than if I had waited for the whole lot to swarm naturally.

New Jersey.

F. G. H.

COMES A TIME

When Coffee Shows What It Has Been Doing.

"Of late years coffee has disagreed with me," writes a matron from Rome, N. Y. "Its lightest punishment being to make me 'logy' and dizzy, and it seemed to thicken up my blood."

"The heaviest was when it upset my stomach completely, destroying my appetite and making me nervous and irritable, and sent me to my bed. After one of these attacks, in which I nearly lost my life, I concluded to quit the coffee and try Postum."

"It went right to the spot! I found it not only a most palatable and refreshing beverage, but a food as well."

"All my ailments, the 'loginess' and dizziness, the unsatisfactory condition of my blood, my nervousness and irritability disappeared in short order and my sorely afflicted stomach began quickly to recover. I began to rebuild and have steadily continued until now. Have a good appetite and am rejoicing in sound health which I owe to the use of Postum." Name given by Postum Co., Battle Creek, Mich.

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

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



I WILL MAKE YOU PROSPEROUS

If you are honest and ambitious write me today. No matter where you live or what your occupation, I will teach you the Real Estate business by mail; appoint you Special Representative of my Company in your town; start you in a profitable business of your own, and help you make big money at once.

Unusual opportunity for men without capital to become independent for life. Valuable Book and full particulars FREE. Write today.

NATIONAL CO-OPERATIVE REALTY CO.

E. R. MARDEN

1162 Marden Building
Washington, D. C.

SCIENTIFIC RUPTURE CURE

Don't Wear a Common Truss or

Appliance. Dr. Appley's Scientific Appliances—movable pads conform to every kind of rupture, no matter how severe. No under straps, springs or other annoying features. Wear with same comfort as an old pair of shoes. Call at office or write for booklet. Lady attendants for women and children.

APPLEY TRUSS CO.

61-63 Pearl St., Grand Rapids, Michigan



BEES HOW TO MAKE THEM PAY

The pleasures, the work and the profits of bee keeping are fully covered in "Gleanings in Bee Culture," 6 months trial subscription 25 cents. Write for book on Bees and free catalogue—both free.

THE A. I. ROOT COMPANY, Box 54, Medina, Ohio.

"EGGMAKERS"—S. C. Brown Leghorns, 4 settings (32 eggs) \$2, per 100, \$3.75. WM. J. COOPER, Mt. Pleasant, Michigan.

EGGS from the famous Blue Belle Strain of Barred Rocks, prize winners at Chicago & Boston. \$1.50 a setting, \$3 from special pen of 8 hens, \$2 from special pen of 10 pullets. Lake Ridge Farm, Levering, Mich.

EGGS FOR HATCHING—Prize winning Wyandottes, White and Columbian, White Holland Turkeys, and White Guineas. Z. KINNE, Three Oaks, Mich.

S. C. BLACK MINORCA EGGS—Large white eggs and lots of them. \$1 for 15; \$3 for 50; \$5 for 100. E. A. BLACK, R. No. 6, Lakeview, Michigan.

White Leghorns—Rose or single comb cock-erels. Rose Comb eggs \$1 to \$2 per 15. Ray J. Graham, R. F. D. No. 1, Flint, Mich.

LILLIE FARNSTEAD POULTRY

B. P. Rocks, R. I. Reds, W. Wyandottes and S. C. W. Leghorn eggs for sale. 15 for \$1; 26 for \$1.50; 50 for \$2.50. COLON C. LILLIE, Coopersville, Mich.

EGGS: EGGS: EGGS—White & Buff Orpington, White & Barred Rocks, Black & White Minorcas, White & Buff Leghorns, Rose & Single Comb Reds, Houdans & White Crested Blk Polish. H. H. King, Willis, Mich.

THOROUGHbred S. C. BROWN LEGHORN Eggs at \$1.00 per 15 or \$5.00 per 100. Stock all sold. LEWIS T. OPPENLANDER, R. No. 4, Lansing, Mich.

Eggs—Light Brahma, White Wyandotte and Barred Rocks. \$1 a setting, \$1.50 for two settings. E. D. BISHOP, Route 38, Lake Odessa, Michigan.

R. C. B. Leghorn Cockerels—Kulp strain, the best there is. \$1 to \$5. Eggs in season. C. W. WAITE, Gobleville, Michigan.

SINGLE COMB BLACK MINORCAS—A few more, pull-ets to spare. Eggs \$1.50 per setting. R. W. MILLS, Saline, Michigan.

SILVER, GOLDEN and WHITE WYANDOTTES. Eggs \$1.50 per 15; \$2.50 per 30. A few White Roosters left, circular free. C. W. Browning, Portland, Mich.

FOR SALE—S. C. and R. C. Rhode Island Red Eggs. 15 for \$1.00; 50 for \$2.75; 100 for \$5. BUELL BROS., Ann Arbor, Mich.

WHITE WYANDOTTES—Useful and beautiful. The kind that weighs, lays and pays. A. FRANKLIN SMITH, Ann Arbor, Mich.

DOGS.

TRAINED foxhounds and hound pups for hunting fox and coons. Also collies. Inoculate 2-cent stamp. W. E. LECKY, Holmesville, Ohio.

YOU WRITE W. J. ROSS, Rochester, Michigan, for those beautiful sable and white Collie Puppies, of the finest breeding, and from stock workers.

Bee Supplies and Berry Baskets.

Hives, Sections, Comb Foundation, Smokers, etc. Berry Baskets & Crates. We can save you freight expense, and make prompt shipments. Send for catalog. Will quote low prices on large quantities.

M. H. HUNT & SON, 110 Condit St., Lansing, Mich.



(Continued from page 636).

northern counties and none in the upper peninsula. The damage by Hessian fly in the southern counties is the principal cause of the decrease in condition of wheat as reported on May 1st.

The total number of bushels of wheat marketed by farmers in May at 107 mills is 143,972 and at 91 elevators and to grain dealers 165,555 or a total of 309,527 bushels. Of this amount 241,267 bushels were marketed in the southern four tiers of counties, 64,860 in the central counties and 3,400 in the northern counties and upper peninsula. The estimated total number of bushels of wheat marketed in the ten months August-May is 12,200,000. The amount of wheat yet remaining in possession of growers is estimated at 3,000,000 bushels. Sixty mills, elevators and grain dealers report no wheat marketed in May.

Rye.—The condition of rye in the state, southern and central counties is 92, in the northern counties 91 and in the upper peninsula 99.

Corn.—The acreage of corn planted as compared with an average for the past five years, in the state and northern counties is 99, in the southern and central counties 98 and in the upper peninsula 109. The condition of corn as compared with an average, in the state, southern and central counties is 91, in the northern counties 92 and in the upper peninsula 96.

Oats.—The condition of oats as compared with an average, in the state and central counties is 88, in the southern counties 84, in the northern counties 90 and in the upper peninsula 100.

Barley.—The acreage of barley sown as compared with an average for the past five years, in the state, central and northern counties is 88, in the southern counties 87 and in the upper peninsula 96.

Meadows.—The condition of meadows as compared with an average, in the state is 83, in the southern counties 69, in the central counties 94, in the northern counties 99 and in the upper peninsula 104.

Potatoes.—The acreage of potatoes planted as compared with an average for the past five years, in the state and southern counties is 91, in the central counties 88, in the northern counties 89 and in the upper peninsula 100. The condition as compared with an average, in the state and southern counties is 90, in the central counties 87, in the northern counties 93 and in the upper peninsula 96.

Colts and Calves.—The number of colts as compared with an average, in the state and central counties is 92, in the southern counties 93, in the northern counties 89 and in the upper peninsula 98. The number of calves as compared with an average, in the state and upper peninsula is 95, in the southern counties 94 and in the central and northern counties 96.

Sugar Beets.—The acreage of sugar beets as compared with an average for the past five years, in the state is 103, in the southern counties 96, in the central counties 101, in the northern counties 104 and in the upper peninsula 242.

Fruit.—Heavy frosts during the first weeks of May destroyed considerable fruit in the northern portion of the state. Many leading varieties of winter apples did not blossom very heavily, consequently the prospect for a good yield is not very promising, early apples promise a fair yield. The following table will show the prospect at the present time for a crop of the various kinds of fruit in the state and the different sections:

	State.	Sou. Cos.	Cent. Cos.	Nor. Cos.	Up. Pen.
Apples	62	64	54	55	96
Pears	73	76	69	65	93
Peaches	79	79	80	75	83
Plums	76	81	68	66	75
Cherries	72	81	55	56	93
Strawberries ..	86	83	83	92	100

CROP AND MARKET NOTES.

Calhoun Co., June 10.—All growing crops, with hay and possibly wheat excepted, are looking well. Corn is growing very rapidly, and potatoes are pushing up—so are the bugs. Oats are fairly good and there is quite a large acreage sown. Some oats are being marketed at 33c per bushel as farmers feel that the new crop is practically assured. Some wheat is being marketed at 83c. The new crop is variable, some fields having considerable fly damage. The straw is short and heads come out earlier than usual. Meadows have improved much since the rains the past two weeks, but they are far from looking well, and hay will be a light crop in this section. I believe the amount of old hay on hand at this time is less than usual, and by next spring it will be still lower. Many farmers are putting out sowed corn, trying alfalfa, or other things to answer for hay.

Genesee Co., June 10.—This section was swept by a tornado on June 4, an immense amount of damage to farmers resulting. On many farms not a building escaped injury and in several instances all were laid flat by the wind. Silos and fences suffered greatly; one dairyman near Flint lost three silos. Loss to standing grain very great. In wheat, oats, barley and rye fields almost total destruction followed the storm, as hail accompanied the rain and wind. Orchards and wood lots show hundreds of uprooted trees, fine groves of sugar maple among the number. There was no loss of human life and but a small one of stock. Insurance will cover but a small proportion of the damage. Farmers are feeling pretty blue. Still, the territory covered but a comparatively small portion of the county and outside of that crops are looking fine.

Lapeer Co., June 10.—Wheat headed and promises a bountiful crop. More wheat and less rye than usual. All spring (Continued on page 645).

(A short human-interest story written by C. W. Post for the Postum Cereal Co., Ltd.)

Some Day Ask Your Physician

To tell you the curious story of how the mind affects the digestion of food.

I refer to the condition the mind is in, just before, at the time, or just following the taking of food.

If he has been properly educated (the majority have) he will help you understand the curious machinery of digestion.

To start you thinking on this interesting subject, I will try to lay out the plan in a general way and you can then follow into more minute details.

Pawlow (pronounce Payloff) a famous Russian Physician and Chemist, experimenting on some dogs, cut into the tube leading from the throat to the stomach.

They were first put under chloroform or some other anaesthetic and the operation was painless. They were kept for months in very good condition.

When quite hungry some unappetizing food was placed before them and, although hunger forced them to eat, it was shown by analysis of the contents of the stomach that little if any of the digestive juices were found.

Then, in contrast, some raw meat was put where they couldn't reach it at once, and a little time allowed for the minds of the dogs to "anticipate" and create an appetite. When the food was finally given them, they devoured it ravenously and with every evidence of satisfaction. The food was passed out into a dish through the opening before it reached the stomach. It was found to be mixed with "Ptyalin" the alkaline juice of the mouth, which is important for the first step in digestion. Then an analysis was made of the contents of the stomach, into which no food had

entered. It was shown that the digestive fluids of stomach were flowing freely, exactly as if the desirable food had entered.

This proved that it was not the presence of food which caused the digestive juices to flow, but the flow was caused entirely and alone as a result of the action of the mind, from "anticipation."

One dog continued to eat the food he liked for over an hour believing he was getting it into his stomach, whereas not an ounce went there; every particle went out through the opening and yet all this time the digestive juices flowed to the stomach, prepared to quickly digest food, in response to the curious orders of the mind.

Do you pick up the lesson?

Unappetizing food, that which fails to create mental anticipation, does not cause the necessary digestive juices to flow, whereas, food that is pleasing to the sight and hence to the mind will cause the complicated machinery of the body to prepare in a wonderful way for its digestion.

How natural then, to reason that one should sit down to a meal in a peaceful, happy state of mind and start off the breakfast, say with some ripe delicious fruit, then follow with a bowl of crisp, lightly browned, thin bits of corn like Post Toasties, add a sprinkle of sugar and some good yellow cream and the attractive, appetizing picture cannot escape your eye and will produce the condition of mind which causes the digestive juices nature has hidden in mouth and stomach, to come forth and do their work.

These digestive juices can be driven back by a mind oppressed with worry, hate, anger or dislike of the disagreeable appearance of food placed before one.

Solid facts that are worthy the attention of anyone who esteems prime health and human happiness as a valuable asset in the game of life.

"There's a Reason" for saying "The Memory Lingers" when breakfast is started with POST TOASTIES.

Let the Homeseekers' Land Library Help You to Home and Fortune

The Union Pacific has collected hundreds of land books, each of which gives you uncolored facts regarding conditions in the thriving Pacific Northwest.

From them you learn what others have done, what crops pay, where you will find a market, what capital you need.

These books give you an accurate account of industrial conditions. They were

not written to sell you land, but to help you settle yourself in a land where opportunity is young.

Write and tell us the state and industry which most interests you. We will send you the right books by return mail.

Homeseekers' Information Bureau

785 Bee Building

Omaha, Neb.

(691)

Please mention the Michigan Farmer when you are writing to advertisers and you will do us a favor.

FARMS AND FARM LANDS FOR SALE OR EXCHANGE

SHEEP FARM FOR SALE—223 acres, Sec. 19-30 S Keene Tp. Ionia Co., Mich. Terms reasonable. No agents. H. W. POWELL, Ionia, Michigan.

I SELL FARMS in Oceana, best County in United States. Fruit, Grain, Stock, Poultry. Write for list. J. S. HANSON, Hart, Mich.

FARMS WANTED—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property FREE. American Investment Association, 3 Palace Bldg. Minneapolis, Minn.

NEW YORK Great farm bargains near Ithaca and Cornell University. Large list. Send for free catalog. KEEBER & BARBER, Ithaca, N. Y.

Northern Ohio Poultry, Fruit and Stock Farms—All sizes. List your farm for quick sale. W. H. HURD, Collins, Ohio.

FARM AT A BARGAIN!

75 ACRES, 8-room house and large barn, near Hand Station, only 12 miles from Detroit. \$4,500. Easy Terms, Perfect Title. J. B. PADBERG, owner, 412 Moffat Building, Detroit.

WHY PAY RENT

when you can buy the Best Land in Michigan at from \$6 to \$10 an acre near Saginaw and Bay City. Write for map and particulars. Clear title and easy terms. Stafford Bros. (owners) 15 Merrill Bldg., Saginaw, W. S. Michigan.

FREE

Literature will be sent to any one interested in the wonderful Sacramento Valley, the richest valley in the world. Unlimited opportunities. Thousands of acres available at right prices. The place for the man wanting a home in the finest climate on earth. No lands for sale; organized to give reliable information. Sacramento Valley Development Association, SACRAMENTO, California

70 Acres, \$2,500, Part Cash, Crops, Stock and Tools Included.

Easy drive to railroad and within short distance of two large cities; level dark loam fields, spring water, pasture for 12 cows, wood for home use, lots of fruit, 2-story 10-room house, big barn, other outbuildings, splendid maple shade, charming view, only 14 miles to pretty lake, aged owner includes five cows, 2 heifers, 2 bulls, 2 horses, wagons, farming machinery, all tools and crops; if taken at once only \$2,500 part cash. Full details and traveling directions to see this and other good farms \$1,000, up on page 33, Strout's Farm Catalogue, copy free. Station 161, E. A. STROUT, Union Bank Building, Pittsburg, Pa.

MARKETS

DETROIT WHOLESALE MARKETS.

June 14, 1911

Grains and Seeds.

Wheat.—Cool days have enhanced the chances for the new crop of wheat and prices have tumbled accordingly, as will be seen by comparing prices below with those of last week's issue, fully five cents being chopped off. The harvesting zone is moving to the north and in the southwest threshing is under way with machine yields showing up very well, if reports can be relied upon. In the northwest the cool days have restored the fields after the threat of hot days and lack of moisture had scared dealers to believe that the promising crop was about to succumb to the action of the elements. Liverpool has been easier under the depressing news from this country and the pressure of cargoes from Australia. The world's visible supply shrank over 6½ million bushels. North-western receipts at Chicago exceeded those of a year ago as did also primary receipts of that region, but the latter is much below what the arrivals at farmers' elevators were the previous week. One year ago the price paid on the local market for No. 2 red wheat was \$1.05 per bu. Quotations for the past week are:

	No. 2	No. 1	Red.	White.	July.	Sept.
Thursday	.....91	.....90	.....91	.....89½	.....89	.....89
Friday	.....90	.....89	.....90	.....89	.....89	.....89
Saturday	.....89½	.....88½	.....89½	.....89½	.....89½	.....89½
Monday	.....87	.....86	.....87	.....87½	.....87½	.....87½
Tuesday	.....87	.....86	.....87	.....87	.....87	.....87

Corn.—Primary receipts of corn were about the same as last week and about double what they were for the corresponding period of a year ago. Shipments were made in the same proportion. The sentiment in the markets appears to be for a continued strong trade although a declining wheat deal may put on the brakes on this market to some extent and hinder advances that would come naturally. Prices rule higher for both grades quoted. Offerings seem to be well absorbed by the demand. One year ago the price for No. 3 corn was 61c per bu. Quotations for the week are:

	No. 3	No. 3	Yellow.
Thursday	.....56	.....58	.....58½
Friday	.....56½	.....58½	.....58½
Saturday	.....56½	.....58½	.....58½
Monday	.....56½	.....58½	.....58½
Tuesday	.....56½	.....58½	.....58½

Oats.—A strong undertone restricts selling and while receipts have been good the past week the injury done the crop by dry weather which recent rains have not repaired, lends the market good support at prices ruling above those of a week ago. One year ago the price for standard oats was 41½c per bu. Quotations for the week are:

	Standard	No. 3	White.
Thursday	.....38½	.....38½	.....38½
Friday	.....39	.....38½	.....38½
Saturday	.....39½	.....39	.....39
Monday	.....40	.....39½	.....39½
Tuesday	.....40	.....39½	.....39½

Beans.—This market is unchanged from a week ago and sales are being made at the prices given below. There is a fair demand.

	Cash.	Oat.
Thursday	.....1.87	.....1.92
Friday	.....1.87	.....1.92
Saturday	.....1.87	.....1.92
Monday	.....1.87	.....1.92
Tuesday	.....1.88	.....1.93

Clover Seed.—Interest is improving in the October deal but other kinds are lifeless with quotations ruling as given below:

	Prime.	Oat.	Alsike.
Thursday	.....\$9.25	.....\$8.20	.....\$9.00
Friday	.....9.25	.....8.20	.....9.00
Saturday	.....9.25	.....8.35	.....9.00
Monday	.....9.25	.....8.35	.....9.00
Tuesday	.....9.25	.....8.35	.....9.00

Flour, Feed, Provisions, Etc.

Flour.—Market is slow with prices steady. Quotations are:

Clear	.....\$4.75
Straight	.....4.65
Patent Michigan	.....4.90
Ordinary Patent	.....4.90

Hay and Straw.—Market higher for both hay and rye straw. Quotations on baled hay in car lots f. o. b. Detroit are: No. 1 timothy, \$23@23.50; No. 2 timothy, \$22@22.50; clover, mixed, \$20@22.50; rye straw, \$7.50; wheat and oats straw, \$6.50 per ton.

Feed.—Prices are steady with a week ago. Carlot prices on track are: Bran, \$27 per ton, coarse middlings, \$28; fine middlings, \$28; cracked corn, \$22; coarse corn meal, \$22; corn and oat chop, \$20 per ton.

Potatoes.—The surprise of the past week was the sudden development of strength in the old potato market. The dry weather of May shortened the new crop and now consumers are compelled to use old ones again which has quickened the trade and sent prices up 40@50c per bu. On Tuesday morning hucksters were selling old potatoes at \$1.20 per bu. on the streets of Detroit. In car lots Michigan potatoes are selling at 70@80c per bu.

Dairy and Poultry Products.

Butter.—While prices have sagged a little from the recent advance, the market has a steady tone and is fairly active. Quotations are: Extra creamery, 22c; do. firsts, 20c; dairy, 16c; packing stock, 15c per lb.

Eggs.—There is general complaint over the country that while farms are producing an unusually large number of eggs, the quality of the product is very inferior and that dealers are very cautious about taking them readily. Many consignments are declared to be 50 per cent bad. The warm weather of May is

held responsible for the low grade of the goods. Prices steady with a week ago. Fresh receipts, case count, cases included, are quoted at 13c per dozen.

Poultry.—This trade is quiet with an easy undertone. Chickens are lower. Market easy. Live—Spring chickens, 12½@13c; hens, 12½@13c; old roosters, 10c; turkeys, 14@15c; geese, 8@9c; ducks, young, 12@13c; broilers, 23@24c per lb.

Cheese.—Michigan, old, 17c; Michigan, late, 13@14c. York state, old, 17c; do. late made, 12@13½c; Swiss domestic block, 16@18c; cream brick, 14@15c.

Veal.—Market lower. Fancy, 9½c; choice, 8@9c per lb.

Fruits and Vegetables.

Cabbage.—Steady. Selling at \$2.75@3 per crate for new.

Strawberries.—Higher. The Michigan grown are 75c@1 per 16-qt. crate.

Pineapples.—\$2.25@3.75 per case.

Apples.—Becoming scarce; only a few varieties on the market and very firm. Steel reds, \$6.50@7; Western apples, \$2.75@3 per box.

OTHER MARKETS.

Grand Rapids.

Egg buyers are offering the country trade 12c this week. Dairy butter is worth 17c and creamery is half a cent higher than last week. The weather has continued wet and bad for strawberries, with fruit soft and sandy. Poultry continues weak, with 10c the top price for fowls. Broilers are worth 20@24c. No. 2 red wheat is bringing 83c; oats, 40c, declines of 2c and 1c respectively since last week.

Chicago.

Wheat.—No. 2 red, 86½@87½c; July, 87½; Sept., 86½c per bu.

Corn.—No. 2, 54@54½c; July, 54½c; Sept., 54½c per bu.

Oats.—No. 2 white, 38½@39c; July, 38½c; Sept., 39½c.

Barley.—Malting grades, 88@98c per bu; feeding, 65@75c.

Butter.—The demand has shown some improvement the past week, resulting in an advance on all grades of creameries. Dairy goods steady and unchanged. Quotations: Creameries, 18@22c; dairies, extra, 19c per lb.

Eggs.—Good eggs continue in rather light supply and are firmer although prices show no recovery from last week's decline. The market has a steady undertone. Quotations are: Prime firsts, 14c; firsts, 13c per doz; at mark, cases included, 11@11½c.

Potatoes.—Unexpectedly light receipts of new stock, due to the failure of the Oklahoma crop and to damage from dry weather in other sections of the south and southwest, have sent prices soaring. Choice to fancy old are quoted at 95c@1 per bu; good to choice new, \$1.80@1.90 per bu.

Beans.—Market quiet; prices show no change. Choice hand-picked pea beans quoted at \$1.95@2 per bu; prime, \$1.85@1.95; red kidneys, \$3.25@3.65 per bu.

Hay and Straw.—Hay continues firm with last week's advanced figures ruling. Straw steady and unchanged. Quotations: Choice timothy, \$23.50@24.50; No. 1 timothy, \$21.50@22.50; No. 2 do. and No. 1 mixed, \$19.50@20.50; No. 3 do. and No. 2 mixed, \$16@18; rye straw, \$8.50@9; oat straw, \$7@7.50; wheat straw, \$6@6.50 per ton.

Timothy Seed.—The market is inactive and steady, with the nominal quotation of \$5.60 per bu. still retained.

Boston.

Wool.—In both east and west competitive bidding has advanced quotations and, today, in Montana where the greatest activity is seen among the field men, contracts are being closed at 19c and even 20c, which was the basis for operations a year ago. In the fleece states prices are looking upward and farmers seem much encouraged. Ohio mediums are being sold on the farms at from 21@21½c and fine grades are ruling steady at 20c. In Michigan practically the same figures control. The light purchase of foreign wools by American dealers is due to the stronger tone and comparatively higher values ruling abroad which now seems to be reflecting strength in the home situation. Sales here for the week amounted to 2,960,000 pounds.

New York.

Butter.—The decline of butter last week proved to be only temporary, much of the loss now being recovered. Storage men are taking hold of the market a little and aiding the rather good demand from retailers. Supply is ample. Grass has improved with the recent rains. Creamery specials are quoted at 23½@24c; extras, 23c per lb.

Eggs.—Market is ruling about steady. Fresh gathered extras, 18@20c; firsts, 16@17c; seconds, 13½@14c; western gathered whites, 17@19c.

Poultry.—Dressed—Fresh killed turkeys, 13@16c; fowls, 11½@14c; western broilers, 18@25c.

Elgin.

Butter.—Market firm at 22c per lb., which is an advance of ½c over the quotation of last week. Output for the week amounted to 1,123,200 lbs.

THE LIVE STOCK MARKETS.

Buffalo.

June 12, 1911.

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

Receipts of stock here today as follows: Cattle, 175 cars; hogs, 16,000; sheep and lambs, 6,000; calves, 2,100.

With 175 cars of cattle on our market today, and 23,000 reported in Chicago, all the strictly dry-fed cattle sold strong,

and in some instances 10c higher than last week. However, there were several loads of the best, strictly dry-fed cattle on sale here today that has been shown so far this year. Outside of the strictly dry-fed, all other cattle sold easy and barely steady with last week. The grassy kind of all descriptions sold lower, generally from 10@25c per cwt. lower than last week. There were some very good cattle shown here today, weighing around 1,250 lbs., but had been to grass, and consequently had to suffer a decline for that reason.

We quote: Best 1,350 to 1,600-lb. steers \$6.50@6.75; good prime 1,200 to 1,350-lb. do., \$6.25@6.40; best 1,100 to 1,200-lb. shipping steers, \$5.65@6.10; medium butcher steers, 1,000 to 1,100 lbs., \$5.25@5.65; light butcher steers, \$4.85@5.25; best fat cows, \$4.50@5; fair to good do., \$3.60@4.40; common to medium do., \$3.25@3.75; trimmers, \$2.50@3; best fat heifers, \$5.50@6; good do., \$5@5.40; fair to good do., \$4.25@4.75; stock heifers, \$4@4.25; best feeding steers, dehorned, \$4.50@4.75; common feeding steers, \$3.75@4; best bulls, \$5@5.25; bologna bulls, \$4@4.75; best milkers and springers, \$50@60; common to good do., \$25@40.

With 100 cars of hogs on sale today, our packers were a little slow in taking hold at the prices asked early, and bought quite a number of decks of very good mixed hogs at \$6.50, but with the majority of salesmen holding out for stronger prices, they were unable to fill their orders at \$6.50, and finally bought the bulk of the mixed grades at \$6.55; yorkers sold from \$6.50@6.55, and pigs generally around \$6.25@6.30, while the heavier grades sold from \$6.40@6.50, and rough, sows from \$5.40@5.50. All sold; market closing steady.

The lamb and yearling market opened strong today, and sheep very dull. The most of the choice spring lambs selling from \$8@8.25; yearling lambs, \$6.75@7.25. Very little demand for wethers, few sold to outside orders from \$4.25@4.35; handy ewes, \$3.50@3.75; heavy ewes, \$3.35@3.50. Prospects don't look any better for sheep the balance of this week.

We quote: Best spring lambs, \$8@8.25; wethers, \$4@4.25; cull sheep, \$1.50@3; bucks, \$2.50@3; yearling lambs, \$6.75@7.25; handy ewes, \$3.50@3.75; heavy ewes, \$3.35@3.50; veals, choice to extra, \$9@9.25; fair to good do., \$7@8.50; heavy calves, \$3.50@4.50.

Chicago.

June 12, 1911.

Cattle. Hogs. Sheep
Received today23,000 43,000 23,000
Same day last year.....25,528 41,322 17,098
Received last week.....46,191 127,047 104,566
Same week last year.....46,546 97,702 72,022

The week opens today with plenty of cattle and a fairly active demand, buyers turning their attention chiefly to fat steers and good butcher stock, these ruling firm, while the commoner cattle are slow and inclined to show a weakness. Calves are selling well, but there is no rush to buy stockers or feeders. Hogs show weakness for the commoner packing grades, but on the whole the market is not much different from that of Saturday, sales ranging at \$5.85@6.35 as the extreme, with light weights going at \$6@6.35, pigs at \$5.65@6.20, boars at \$2.50@3 and stags at \$6.15@6.30, all stags selling subject to 80 lbs. dockage per head. A week ago hogs sold at \$5.60@6.15. Hogs received last week averaged in weight 237 lbs., compared with 243 lbs. a fortnight earlier, 242 lbs. a year ago and 217 lbs. two years ago. The sheep market was slow and lower, following last week's slump of 20@35c in sheep and 35@75c in shorn lambs. Spring lambs of good quality alone have held their ground, but even these were off today, being salable at \$5@7.25 per 100 lbs. Clipped stock was quotable as follows: Lambs, \$4@6.75; ewes, \$2@4; wethers, \$3.75@4.40; bucks, \$2@3; yearlings, \$4.25@5. Last week's receipts of sheep and lambs were enormous and greatly excessive, not only here, but also at other markets, east and west, and the only remedy for the market is smaller offerings. A year ago conditions were widely different, prices booming wildly under greatly inadequate receipts, and similar conditions prevailed two years ago, at which time prices were very much higher than those paid at the present time.

Cattle have not been coming to market for a week past in especially large numbers, and supplies of the choicer beefs have been falling off in volume to such an extent that buyers were compelled to pay 10@15c higher prices, there being a larger demand on eastern shipping and export account. On the other hand, the percentage of thin and grassy cattle under went quite an increase, and these had to go at further declines to a large extent. There has been a decided widening out in the spread in prices in recent weeks, such as is usually experienced when grass-fed cattle begin to move in larger numbers, and with further gains in supplies of such stock, additional declines in values are not unlikely. The best beefs have sold at \$6.25@6.50, while the poorer lots of steers sold at \$4.90@5.45, with sales of desirable yearling steers at \$5.65@6.40. The improvement in prices was felt mainly in lots selling above \$5.85, with a good call for export steers at \$5.60@6.30, export steers for the London market showing a stiff advance. The general trend of the cow market of late has been strongly downward, and recent sales of bulls at \$3@5.30 were the lowest of the year. Canner cows sold last week at \$2@2.70, cutters at \$2.75@3.25 and butchering lots of cows and heifers at \$3.30@6.15, with few selling near the top figure. Calves sold at \$3@5 for the poorer kinds, with the better class active at \$7@8.25 per 100 lbs. The market for stockers and feeders has undergone a marked reduction in prices in recent

weeks for all except the better class of these cattle, and the movement in the others has been quickened thereby. Stockers sold during the past week at \$3.75@5.50 and feeders at \$4.85@5.85. Among the high-priced feeder sales were 21 head that averaged 1,290 lbs. at \$5.65 and a car load that averaged 1,043 lbs. at \$5.85. Not many farmers care to pay such fancy prices, but the abundance of grass is making a larger demand for medium-priced stockers, and feeder heifers are having a good sale. Milksters and springers are in poor demand at \$30@65 per head, the best call being for good backward springers and extra milkers.

Hogs have fluctuated back and forth in recent weeks, ruling alternately higher and lower, desirable lots keeping up to \$6 and over as a rule. The great bulk of the offerings have sold within a 15c range of prices, with recent transactions largely above \$6, and there was an excellent call for good butchering lots weighing 200 to 220 lbs., these selling next best in price to choice underweight bacon hogs, which continued market-toppers. The extremely heavy weights sold lowest of all, and pigs sold extremely well, especially the heavier pigs, which were in big request for cutting up into fresh pork and bacon strips. On recent extremely hot days the percentage of dead hogs unloaded from cars arriving at the stock yards was the largest ever known, with bad bedding and overloading largely responsible, and heavy hogs succumbed the most. The provision trade is active on domestic and export account, with ample stocks, Chicago warehouses holding June 1, 130,301,793 lbs., compared with 121,175,065 lbs. a month earlier and 74,866,837 lbs. a year earlier.

Sheep and lambs have undergone extremely large fluctuations in prices of late, last week opening active and higher for the better class and the general market ruling much slower and decidedly lower on subsequent days. To a large extent killers got stocked up early in the week, and their indifference later made lower prices all around, especially for the liberal offerings of poorly fattened sheep and lambs that made up far too large a percentage of the daily receipts. An extremely large share of the receipts consisted of spring lambs that were bought by the Chicago packers in Louisville. The Colorado fed lambs are about all marketed, and receipts have consisted, aside from southern springs, of fed native and western sheep and lambs.

Horses have shown summer dullness, and the marked diminution in receipts last week failed to bring about a reaction from the recent severe declines in prices. The large percentage of inferior farm horses that bore evidence of having worked hard was a drag on the market, while there were not enough good heavy horses to meet the demands of the Chicago fire department. The bulk of the horses sold between \$150 and \$220, the best demand running on horses of good flesh that weighed from 1,500 to 1,600 lbs. Prime 1,500-lb. mares went as high as \$275.

LIVE STOCK NOTES.

The domestic consumption of beef continues to be checked by the high prices asked by retailers, who have failed to mark down their figures in accordance with the reductions made from time to time by wholesalers. Then the demand is also lessened by the abundance and comparative cheapness of vegetables and fruits. Furthermore, the labor troubles are exerting a baleful influence, with thousands of workers idle in the large cities. The packers are not eager to load up large quantities for future consumption, as they believe that corn-fed beefs will be plentiful through this month, if not later. Many stockmen have failed to make fattening cattle pay this year, the cattle costing them too much when bought as feeders at the start, although the cost of feed was considerably lower than a year ago. Since the pastures became good the sacrifice of partly fattened cattle has been checked in a great measure, timely generous rains putting an end to the drought.

John Blanchard, a prominent large sheep feeder, of Wisconsin, who was associated with E. H. Walker and G. C. Holtz in feeding about 2,400 lambs and about 1,100 yearlings, said the day they were marketed at Chicago that their ration comprised four pounds of ensilage per head per day and a grain feed of 1.56 pounds. The lambs were on feed for 135 days and showed an average gain of 45½ pounds per head, while the yearlings were fed 119 days and gained an average of 38 pounds each.

Very few stock cattle are going from the southern breeding grounds to northern pastures this year. There are very few young stock cattle for sale in the southern parts of the country, and furthermore, settlers are now occupying the northern ranges, excluding the former cattlemen and sheepmen. The time has arrived for farmers to start up breeding beef cattle in earnest. It has been demonstrated by actual experience that beef can be grown on high-priced land so as to make a fair profit, and this has been done often in Iowa, especially where early maturing breeds were used and proper attention was given at all times.

Several prominent land and cattle companies in Texas are going into grazing cattle enthusiastically, the grass being luxuriant in portions of the state. One company in Victoria county unloaded six car loads of cattle that were shipped from Fort Worth, the cattle being placed at once in grass that was up to their knees. These cattle are filling up well, with more grass in sight than they ever saw before, according to the owners, who are confident the cattle will put on 300 pounds per steer by the first of November.

THIS IS THE FIRST 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.

June 8, 1911.

Cattle.

Receipts, 827. Good dry-fed steady; bulls and all grades of grass cattle 10¢ to 15¢ lower.

We quote: Dry-fed steers and heifers, \$6; steers and heifers, 1,000 to 1,200, \$5.50 @ \$5.95; steers and heifers, 800 to 1,000, \$5 @ \$5.50; grass steers and heifers that are fat, 800 to 1,000, \$4.75 @ \$5; grass steers and heifers that are fat, 500 to 700, \$4.25 @ \$4.80; choice fat cows, \$4.50; good fat cows \$4 @ \$4.25; common cows, \$3.25 @ \$3.50; canners, \$2.50 @ \$3; choice heavy bulls, \$4.50 @ \$4.60; fair to good bolognas, bulls, \$3.75 @ \$4.25; stock bulls, \$3 @ \$3.50; choice feeding steers, 800 to 1,000, \$4.75 @ \$5; fair feeding steers, 500 to 700, \$4.25 @ \$4.65; fair stockers, 500 to 700, \$4 @ \$4.25; stock heifers, \$3.75 @ \$4; milkers, large, young, medium age, \$4 @ \$5; common milkers, \$2 @ \$3.

Roe Com. Co. sold Breitenbeck 16 steers av 1,044 at \$5.50; to Heinrich 25 do av 990 at \$5.85; to Parker, W. & Co. 34 butchers av 720 at \$5.50, 1 do weighing 690 at \$2.50, 2 heifers av 700 at \$4.50; to Kamman B. Co. 1 heifer weighing 710 at \$5.50, 13 steers av 972 at \$5.60; to B. S. & Co. 4 cows av 1,050 at \$3.50; to Rattkowsky 4 butchers av 667 at \$3.75, 1 bull weighing 850 at \$4, 1 cow weighing 970 at \$3.75; to Sullivan P. Co. 1 bull weighing 1,800 at \$4.50, 1 do weighing 1,410 at \$4.50, 1 cow weighing 800 at \$3; to Kamman B. Co. 30 butchers av 840 at \$5.35; to Mich. B. Co. 9 cows av 888 at \$4.25, 9 do av 1,008 at \$4.25; to Bresnahan 1 cow weighing 1,230 at \$4.25; to Rattkowsky 7 butchers av 503 at \$4.

Haley & M. sold Regan 5 butchers av 664 at \$4.75; to Breitenbeck 1 cow weighing 1,220 at \$4.40; to Sullivan P. Co. 17 steers av 835 at \$5.35, 4 do av 825 at \$5.60, 1 do weighing 840 at \$5, 2 cows av 1,055 at \$4.50, 2 do av 1,295 at \$4.60, 2 do av 875 at \$4, 1 bull weighing 1,930 at \$4.50, 2 do av 900 at \$4; to Rattkowsky 2 do av 980 at \$4.25; to B. S. & Co. 6 stockers av 613 at \$4.75, 2 do av 605 at \$4.75; to Applebaum 5 butchers av 810 at \$4.15; to Sullivan P. Co. 1 bull weighing 830 at \$3.75, 1 do weighing 640 at \$3.75; to Mich. B. Co. 3 cows av 950 at \$4.25, 1 bull weighing 780 at \$4; to Regan 1 heifer weighing 530 at \$4.35, 2 cows av 720 at \$3.35, 2 do av 700 at \$2.75, 6 do av 920 at \$3.50, 3 do av 1,040 at \$3.65, 1 canner weighing 800 at \$2.75, 1 do weighing 750 at \$2.75.

Spicer & R. sold Hall 4 cows av 745 at \$3.25, 1 do weighing 970 at \$3.50; to Regan 1 heifer weighing 680 at \$4; to Mich. B. Co. 2 bull and cow av 950 at \$4.25, 1 cow weighing 930 at \$2.75, 13 butchers av 775 at \$4.65.

Bishop, B. & H. sold B. S. & Co. 9 stockers av 622 at \$4.25, 1 cow weighing 940 at \$3.75; to Regan 4 heifers av 550 at \$4.50; to Sullivan P. Co. 2 cows av 935 at \$3.75, 1 canner weighing 800 at \$2.75, 1 heifer weighing 910 at \$5.50; to Parker, W. & Co. 2 cows av 1,095 at \$3.50, 2 bulls av 1,345 at \$4.50, 2 do av 1,185 at \$4.50, 5 cows av 1,046 at \$4.25, 4 heifers av 692 at \$4.50, 1 bull weighing 900 at \$4.25; to Kamman B. Co. 3 cows av 950 at \$4, 3 do av 1,090 at \$3.60, 8 do av 1,006 at \$4.50; to Goose 3 do av 1,047 at \$4.05, 2 do av 1,115 at \$3.75; to Hammond, S. & Co. 21 steers av 1,125 at \$5; to Sullivan P. Co. 16 do av 1,120 at \$5.55, 2 do av 1,175 at \$5.75, 3 cows av 826 at \$4.25; to Thompson Bros. 3 steers av 883 at \$5, 8 butchers av 700 at \$4.10; to Hammond, S. & Co. 1 bull weighing 1,200 at \$4.50; to B. S. & Co. 2 cows av 900 at \$3, 1 do weighing 830 at \$3.60; to Mich. B. Co. 3 do av 993 at \$4.50, 3 do av 1,140 at \$4.25, 1 do weighing 940 at \$3, 2 do av 1,200 at \$4.50, 3 bulls av 1,016 at \$4, 1 heifer weighing 740 at \$4.75; to Sullivan P. Co. 4 steers av 1,110 at \$6; to Thompson Bros. 1 bull weighing 1,120 at \$4.60, 1 heifer weighing 900 at \$5, 2 cows av 910 at \$3.75; to Hammond, S. & Co. 1 bull weighing 1,370 at \$4.50, 2 do av 965 at \$3.75, 3 do av 1,310 at \$4.50, 1 do weighing 1,650 at \$4.50.

Veal Calves.

Receipts, 985. Market 25¢ higher than Wednesday; 50¢ to 75¢ higher than last Thursday. Best, \$7.50 @ \$8; others, \$4 @ \$7.25; milch cows and springers steady.

Roe Com. Co. sold Newton B. Co. 7 av 145 at \$7; to Thompson Bros. 3 av 120 at \$6.50; to Hammond, S. & Co. 24 av 155 at \$7.50, 1 weighing 180 at \$6, 35 av 140 at \$7.50; to Sullivan P. Co. 18 av 130 at \$6; to Hammond, S. & Co. 21 av 140 at \$7.25, 15 av 150 at \$8.

Downing sold Sullivan P. Co. 12 av 140 at \$7, 1 weighing 120 at \$6.

Bohm sold Roberts 3 av 120 at \$5.75, 11 av 170 at \$7.25.

Spicer & R. sold Sullivan P. Co. 9 av 150 at \$7, 14 av 120 at \$5.75; to Walker 3 av 143 at \$7.25, 3 av 170 at \$7.25, 14 av 160 at \$7.50; to Sullivan P. Co. 6 av 135 at \$7, 12 av 145 at \$7.75, 4 av 140 at \$7.35.

Haley & M. sold Parker, W. & Co. 14 av 140 at \$7.50; to Goose 10 av 132 at \$7.50, 3 av 115 at \$6, 14 av 155 at \$7.50; to Rattkowsky 11 av 175 at \$7.75; to Parker, W. & Co. 19 av 150 at \$7.50.

Bishop, B. & H. sold Parker, W. & Co. 19 av 140 at \$7, 1 weighing 220 at \$5, 15 av 137 at \$7, 10 av 179 at \$7; to Hammond, S. & Co. 7 av 160 at \$7.75, 2 av 95

to Newton B. Co. 6 av 185 at \$7.50, 2 av at \$6, 4 av 155 at \$7.50, 3 av 150 at \$7.50; 115 at \$6; to Walker 8 av 130 at \$7.50; to Broadloff 3 av 155 at \$6, 8 av 145 at \$7.50; to Sullivan P. Co. 2 av 220 at \$6, 8 av 140 at \$7, 8 av 145 at \$8; to Thompson Bros. 6 av 108 at \$6, 16 av 145 at \$7.50; to Hammond, S. & Co. 6 av 125 at \$6.50, 36 av 155 at \$8.

Bennett & S. sold McGuire 4 av 140 at \$7.25.

Groff sold same 12 av 135 at \$7.

Duelle sold Burnstone 35 av 140 at \$7.25.

Kendall sold same 5 av 160 at \$7.40.

Long sold Newton B. Co. 7 av 140 at \$7.25.

Belheimer sold same 4 av 155 at \$5.50, 13 av 150 at \$7.50.

Weeks sold same 14 av 145 at \$7.25.

Torrey sold same 7 av 145 at \$7.25.

Lovevell sold Mich. B. Co. 27 av 153 at \$7.10.

Sheep and Lambs.

Receipts, 1,708. Market 50¢ lower than Wednesday and last Thursday on all. Best lambs, \$6.50; fair to good lambs, \$5.75 @ \$6.25; light to common lambs, \$3.75 @ \$4.50; spring lambs, \$6 @ \$8; fair to good sheep, \$3.50 @ \$4; culls and common, \$2.25 @ \$3.

Bishop, B. & H. sold Mich. B. Co. 6 sheep av 120 at \$3.50, 12 do av 110 at \$4, 45 lambs av 68 at \$6.50, 4 spring lambs av 60 at \$8, 30 lambs av 92 at \$6.75, 8 sheep av 105 at \$4, 4 do av 150 at \$3.25, 23 spring lambs av 30 at \$4, 34 lambs av 45 at \$6, 23 lambs av 75 at \$6.60, 92 sheep av 88 at \$4, 10 do av 81 at \$2.50; to Hammond, S. & Co. 7 spring lambs av 55 at \$8; to Thompson Bros. 13 sheep av 63 at \$2.75; to Newton B. Co. 32 spring lambs av 65 at \$8; to Breitenbeck 14 lambs av 52 at \$7; to Eschrich 40 sheep av 83 at \$3, 7 do av 100 at \$2.25; to Fitzpatrick Bros. 28 do av 105 at \$3.35, 120 lambs av 74 at \$6, 12 sheep av 90 at \$4, 5 do av 110 at \$3.25; to Mich. B. Co. 22 lambs av 78 at \$6.50, 30 do av 82 at \$5.50.

Haley & M. sold Sullivan P. Co. 4 lambs av 100 at \$6.50, 2 sheep av 145 at \$2.75, 12 do av 115 at \$2.50, 9 do av 87 at \$4, 8 spring lambs av 53 at \$6.50, 12 do av 60 at \$7.

Roe Com. Co. sold Mich. B. Co. 80 lambs av 68 at \$6.50; to Eschrich 15 do av 70 at \$5, 11 sheep av 160 at \$3.25, 20 do av 115 at \$3.25; to Mich. B. Co. 11 lambs av 55 at \$7.75; to Thompson Bros. 13 do av 83 at \$6.50; to Barlage 30 do av 70 at \$6, 11 sheep av 120 at \$3.50.

Spicer & R. sold Sullivan P. Co. 8 spring lambs av 51 at \$8, 3 sheep av 135 at \$3, 3 do av 125 at \$3.75, 5 do av 110 at \$3.25; to Newton B. Co. 7 spring lambs av 57 at \$8; to Bray 11 sheep av 55 at \$2.60, 13 yearlings av 95 at \$4.75; to Breitenbeck 23 lambs av 75 at \$5.75; to Young 13 do av 73 at \$6, 11 sheep av 105 at \$4, 6 do av 100 at \$4.25.

Bennett & S. sold Fitzpatrick 15 spring lambs av 55 at \$7, 31 sheep and lambs av 85 at \$3.25.

Street sold same 11 sheep av 105 at \$4, 8 lambs av 88 at \$6.25.

Belheimer sold Newton B. Co. 21 lambs av 70 at \$6.50.

Torrey sold same 16 sheep av 100 at \$4, Duelle sold Bray 8 sheep av 88 at \$4.25.

Weeks sold Parker, W. & Co. 27 lambs av 85 at \$5.50, 3 sheep av 150 at \$3.50.

Hogs.

Receipts, 3,947. Nothing sold up to noon. Looks like steady last week's prices.

Range of prices: Light to good butchers, \$6.05 @ \$6.10; pigs, \$6; light yorkers, \$6.05 @ \$6.10; heavy, \$6.

Bishop, B. & H. sold Hammond, S. & Co. 1,250 av 180 at \$6.10, 1,210 av 175 at \$6.05, 320 av 160 at \$6.

Spicer & R. sold Parker, W. & Co. 425 av 190 at \$6.10, 325 av 180 at \$6.05.

Haley & M. sold same 245 av 180 at \$6.10, 250 av 170 at \$6.05, 150 av 150 at \$6.

Roe Com. Co. sold Sullivan P. Co. 143 av 180 at \$6.05, 350 av 190 at \$6.10, 40 av 190 at \$6.

Friday's Market.

June 9, 1911.

Cattle.

Receipts this week, 1,130; last week, 1,139. Market dull at Thursday's prices. Extra dry-fed steers and heifers, \$5.75 @ \$6; steers and heifers, 1,000 to 1,200, \$5.25 @ \$5.50; do. 800 to 1,000, \$4.75 @ \$5.25; grass steers and heifers that are fat, 800 to 1,000, \$4.50 @ \$5; do. 500 to 700, \$4 @ \$4.75; choice fat cows, \$4.25; good fat cows, \$3.75 @ \$4; common cows, \$3.25 @ \$3.50; canners, \$2.75 @ \$3; choice heavy bulls, \$4.50; fair to good bologna bulls, \$4 @ \$4.25; stock bulls, \$3.50 @ \$4; choice feeding steers, 800 to 1,000, \$4.75 @ \$5.25; fair feeding steers, 500 to 700, \$4.25 @ \$4.50; choice stockers, 500 to 700, \$3.75 @ \$4.25; stock heifers, \$3.25 @ \$3.75; milkers, large, young, medium age, \$4 @ \$5; common milkers, \$2 @ \$3.

Veal Calves.

Receipts this week, 1,482; last week, 1,658. Market 25¢ higher than on Thursday; quality common. Best, \$7.50 @ \$8; others, \$4 @ \$7. Milch cows and springers steady.

Sheep and Lambs.

Receipts this week, 2,191; last week, 1,794. Market steady at Thursday's prices. Best lambs, \$6.50; fair to good lambs, \$5.75 @ \$6.25; light to common lambs \$3.75 @ \$4.75; spring lambs, \$5 @ \$7.75; fair to good sheep, \$3.50 @ \$4; culls to common, \$2.50 @ \$3.

Hogs.

Receipts this week, 5,946; last week, 7,000. Market 5¢ higher than on Thursday. Light to good butchers, \$6.10; pigs, \$5.90 @ \$6; light yorkers, \$6.10; heavy, \$6 @ \$6.05.

Western packing since March 1 has aggregated up to latest accounts 4,665,000 hogs, showing an increase of 1,520,000 hogs compared with a year ago. Recent weekly slaughterings at western packing points have aggregated 580,000 hogs, compared with 545,000 a few weeks ago, 305,000 a year ago and 485,000 two years ago.

(Continued from page 643).

crops looking fine. Meadows excellent. Pasture good and all stock looking well. Corn badly damaged on hilly ground by the washing out in the storm of June 4, some fields being nearly ruined. Cultivation has begun on level ground. Alfalfa is receiving some attention in this section and good crops are secured when land has been properly fitted. Beginning to bloom and will soon be ready for first cutting. Farmers are planting potatoes and fitting bean ground. No cherries, and not many apples.

Sanilac Co., June 9.—We are enjoying the finest growing weather yet this season. At the present time it is raining, which soaks the hay, oats and wheat, and maturing the latter rapidly, which promises a fine crop this season. Potatoes about all planted, not a very large acreage. Here in Sanilac beans are grown quite extensively and the principal task of the farmer is preparing a good seed bed for this crop. The price of wool has strengthened surprisingly, 19¢ now being paid for medium grade. Beans rather dull in price, \$1.70 for hand picked. Any hay that is not needed is being sold at a fancy price, \$18 per ton in some cases. Small pigs are selling at \$5 per pair. Butter and eggs are still low.

Ohio.

Carroll Co., June 11.—We had a storm down here the 4th of June which blew many fruit trees down. Farmers have finished shearing sheep and are busy working corn now. Buckwheat not sown yet, but farmers got the ground ready. It is very dry, and the hay crop will not be very good. Rye looks very nice and will be a good crop. Corn, 60¢; wheat, 90¢; buckwheat, \$1; eggs, 15¢; butter, 20¢ per lb.

Wisconsin.

Ashland Co., June 1.—June 1st is here and finds northern Wisconsin farmers with broad smiles on their faces as there have been no frosts since April and we have had an abundance of rain and occasional showers still continue. Although Ashland county is noted for its heavy growth of grasses never in the history of the oldest settler has such a growth been known. The weather has been warm and all grains have attained a large growth for this time of year. Corn and potatoes are fine but the weeds are fine also and hard work and quick action is the only way to success with these two crops. Potato bugs are plentiful and according to advance agents will be a full crop. Garden truck and all root crops are firm, and could not be improved upon. There is but very little alfalfa raised here but same is coming on nicely and will be ready to cut by June 18th or 20th. The acreage of corn is greatly in excess of former years. A few silos are going up and those who are not putting them up are planting an acre or two of ensilage corn so as to find out if it can be raised. The acreage of potatoes is also heavier than last year. The demand for hay is not large at present. One car

just received bought at \$20.50 delivered. Potatoes, old, good stock, 50¢; butter, dairy, 25¢; eggs, 22¢.

"THE PEOPLE'S HOME LIBRARY."

The above is the title of a first-class book of practical information recently issued by the R. C. Barnum Publishing Co., of Cleveland, Ohio. It is a big volume, being, in fact, three books in one volume of 1,031 pages. The first book of the volume is "The People's Home Medical Book," which contains 478 pages. It contains simple but accurate information regarding practically every ill to which the human body is subject, and is compiled by Dr. T. J. Ritter, a physician of repute, who has been connected with the University of Michigan as assistant to the Chair of Theory and Practice of Medicine, and who has been in the actual practice of medicine for over 30 years and has had a large hospital experience. The information which it contains is couched in simple, rather than technical language, as befits a "people's" book, and is of the kind that is needed in every family. In addition the book contains a section devoted to the publication of valuable home remedies gathered from the people in all sections of the country. Another section gives the medicinal uses of all common herbs and plants, thus making it especially valuable for country people. Another section is devoted to patent medicines, giving the formulas of the more valuable of these secret remedies. "The People's Home Receipt Book," which is the second book of the volume, was written by Mrs. Alice Gitchell Kirk, formerly assistant at Chicago University, and at present secretary of the Associated Clubs of Domestic Science. This book contains over 200 of Mrs. Kirk's choice recipes arranged in the form used in her "card index" recipes, which enables one to tell at a glance just what materials are required and the quantities of each. In addition there are a large number of choice "home recipes" which will enable the housekeeper to rival "mother's cooking." "The People's Home Stock Book," the third in the volume, is of especial value to all stock owners. It was written by Dr. W. C. Fair, for 15 years editor of the Veterinary Department of the Michigan Farmer. Dr. Fair is one of the most experienced practitioners and widely recognized veterinary authorities in America. He is also one of the most direct and practical of men, and his long service as veterinary editor of the Michigan Farmer has peculiarly fitted him for the compilation of a book of especial value to Michigan stock owners. In addition to describing the diseases to which domestic animals are subject, and prescribing the best methods of treatment for the same, the book tells how to break, train and educate horses, how to examine them for soundness, how to feed, shoe, etc. This is a subscription book which can be had only through an agent or from the publishers. Price in cloth binding, \$3.75; in leather, \$4.50.

This New Press Enables Hay Balers to Clean Up \$10 a Day

With hay at its present price and a new Sandwich Motor Press, any live fellow can clean up \$10 a day. Baling hay is a delightful occupation, and you can make more money during the six months' baling season than most men make in a whole year. The few hundred dollars you invest in an outfit brings 4 to 8 times as big returns as the same amount put into farming or a retail business.

The Motor Press is a combination Sandwich All-Steel Belt Power Press and high-grade gasoline engine. Complete and compact. Works like lightening—easy to move—always ready for work—no setting up of engine required. Chain drive. No belts to adjust, or lose power. Easy to start or stop press instantly.

Outfit of best, most substantial construction throughout. Steel press—axles, wheels and platform reinforced throughout. 7 H. P. hopper-cooled engine—brake test, 9 H. P. Tank underneath. Equipped with batteries and magneto, combination seat, battery and tool box, and standard gasoline pump. If you have engine, buy Press alone. Any standard hopper-cooled engine can be used.

Sandwich All-Steel Motor Press

This outfit bales 2½ to 3½ tons per hour. Has self-feeder equipment. Takes double charge of hay. Has no condenser box, needs no foot tamping—feeds direct from fork. No bal-ance wheels, no complicated gears, no high speed machinery. Fast, sim-

ple, strong and light of draft. Should you desire a smaller outfit—one less expensive and having capacity of, say 1½ tons per hour, we can furnish it, using either a 4 or 5 H. P. gasoline engine.

We make presses with or without engines—wood frame and steel frame, horse power and engine power, in all sizes up to 5-ton per hour capacity.

Drop us a line today for new book, about the Astounding Profits in Hay Baling. Let us tell you more about this wonderful Sandwich Motor Press.

Write for Free Book on Hay Baling (42) Bales 3½ Tons Per HOUR Sandwich Mfg. Co. 413 Spruce St., Sandwich, Ill.

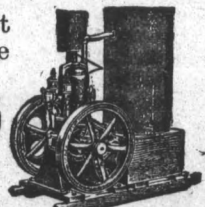
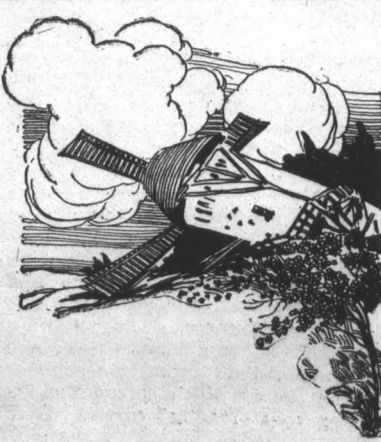
STORMS WILL NOT BLOW DOWN A DETROIT KEROSENE ENGINE

MORAL: BUY A DETROIT KEROSENE ENGINE NOW!

and be insured against trouble and loss in the future.

PRICES from up \$45 AGENTS WANTED

DETROIT ENGINE WORKS, 149 Bellevue Ave., Detroit, Mich.



HORTICULTURE

TAKE CARE OF THE TREES.

Prof. Davey, of Ohio, a natural tree expert says, among other things, that it never was designed by the Creator that trees, any more than animals, should drag through an existence in a diseased or half dead condition. When timely measures are taken to eradicate and ward off disease, it takes but comparatively light effort to keep the trees healthy and thus prolong their longevity and add many fold to their careers for usefulness. He insists that apple and pear trees should reach the age of 300 years in good bearing condition. Oak trees, when used for ornament, or shade should reach the age of 1,000 years. In fact, if proper care and attention should be given to the shade trees in cities and along country roads it would be almost impossible to draw a limit upon their existence.

A healthy tree will produce wholesome fruit, and it is not possible for diseased trees to produce sound fruit. It should be very obvious that when pure sap passes through sickening virus it cannot be expected that the factory of leaves can make pure blood from such polluted matter, and it naturally follows that wholesome fruit cannot be made from such material. The importance of keeping the body of tree by all available means from all kinds of fungus disease, cannot be overestimated.

Ignorance in pruning is also a great factor in cutting off four-fifths of the natural life of a tree. Leaves make all the timber of forest trees and the bearing branches of fruit trees. Every time a live limb is cut off respiration and circulation is disturbed. The stumps of such limbs should never be left torn and bleeding but should always be protected with a covering of thick paint.

It should always be borne in mind that a tree is a living creature and that it draws life and nourishment from sources far beneath the surface of the earth. Ample room for its spreading and searching hair roots should be given. The space required by the spreading branches should be the measure of required room for roots in rendering necessary service. Such service is always greatly impaired. When fruit trees are crowded too closely together a serious mistake is made.

Prof. Davey insists upon the principle that there is neither luck nor chance in the planting, caring for and preserving of trees. It is all a matter of cause and effect. Divine rules inexorably govern in all realms of life, animate or inanimate. The inorganic life of a tree is as real as the organic life of an animal. Modifications may be made as conditions demand or require.

As we are living in days especially noted for deforestation the situation should be met with an increased desire for planting trees. The genius of manufacturers has been skillfully shown in substituting different kinds of metal for wood in the turning out of their great variety of products. A genius has not yet been made manifest, however, for substituting something to do the work of tree in their continual pumping of water, when covered with foliage, from far beneath the surface and sending forth the invisible tides of refreshment, making life tolerable to man and beast and furnishing the only possible means for the growth of all plant life.

IRRIGATION IN THE EAST.

The interest awakened by the announcement of results from irrigating orchard land in New York state a year ago, and the investment in such an enterprise in Van Buren county of this state, makes a consideration of things new along this line important to the intensive cultivator. We are acquainted with a sprinkling system of irrigation in operation in Wayne county, and while we have no figures at hand to tell what the dividends have been upon the capital invested in the plant we have been assured that the owners have found it an exceedingly valuable addition to their property, and for this reason as well as the general interest manifested, we are herewith printing an account of government investigations with such systems of irrigation. Of course, it is understood that only the man with a limited space of ground which he desires to secure the highest income from, would undertake to install an irrigating plant, but we are being gradually convinced by the evi-

dence coming from those who are leading the way, that it will not be long when the man who is confined to a small space of land cannot afford not to have such a plant installed. Following is what the government has to say as to her findings concerning sprinkling systems:

While irrigation by the use of whirling sprinklers is not a new idea, having been successfully and profitably practiced in various places in connection principally with truck-farming operations, it is something of an innovation to undertake the watering of general field crops by this method.

Apple growers in the vicinity of Chelan, Wash., are this season installing sprinkling systems also, and during the summer the whirlers will be going in many orchards.

Albert Seiter, a successful orchardist of Moran Prairie, near Spokane, last year installed such a system and was greatly pleased with the results, also demonstrating to his satisfaction the advantages of applying water in this way. A novel idea was to place a light dressing of straw beneath the trees to prevent the sprinkling from beating the ground so as to compact and crust the surface. He has some old Jonathan apple trees which never produced fruit of marketable size until last year, when by irrigating them with sprinklers a very heavy yield was obtained, most of the apples being larger than four-tier.

Another system of sprinkling that is meeting with much favor and being widely adopted by truck farmers, berry growers and green-house men throughout the eastern, central and southern states consists of running parallel lines of galvanized iron pipe, elevated high enough above the ground to permit free passage of men and teams beneath in carrying on the cultural operations. These pipes, or nozzle lines, as they are called, are usually set 40 to 60 feet apart and supported on top of posts about seven to eight feet high.

Small brass nozzles are screwed into the parallel pipes at intervals of from three to four feet and when the system is in operation thousands of tiny streams shoot forth, producing a result almost like natural rain over the area between the nozzle lines. The pipes are so arranged that they can be revolved to give the jets whatever angle is desired in leaving the nozzles.

The state of Washington has now about a dozen installations of this type and the system also is growing in popularity in Oregon and California.

Sprinkling by whatever system is a more expensive way of irrigating than by means so far commonly employed and it will doubtless be some time before it is very generally practiced; but in places where water is very expensive or where the land is either too irregular to permit of grading or so sandy that heavy losses occur by deep percolation, irrigation by some system of sprinkling may often be profitably done. Costs of installation and operation are heavy for such systems, however, and intensive farming, yielding large returns per acre, must be the rule where sprinkling systems are employed.

GOOSEBERRY MILDEW.

All gooseberry growers who have the least reason to suspect infection are advised to spray their bushes with a solution of liver of sulphur (potassium sulphide) from the time the leaves open until the fruit is set. A solution of half an ounce to a gallon and a half of water is recommended for the first spraying, and the strength should be increased to a solution of half an ounce to one gallon of water at the second spraying. In some cases it has been found that spraying with a half ounce to the gallon of water has injured the leaves of the gooseberry. Growers should therefore carefully note the effects of the first spraying, and if the leaves appear to have suffered any injury from the weak solution, the stronger solution should not be used. On the other hand, if a spray of half an ounce to the gallon does no harm, the grower may resort to somewhat stronger spray fluids. The spray should be applied at intervals of from fourteen to twenty days.

It must be understood, however, that the liver of sulphur spray is recommended as a preventive, and that it cannot be relied upon to produce a cure. The best means to be adopted to effect a cure will vary in different cases. The following are suggestions for guidance. Growers must remember that during the summer months the spores which spread the infection are very readily carried from

plant to plant. They should, therefore, aim (1) at getting rid of all infected material as soon as possible; (2) at destroying all leaves, buds and fruit to which it is at all probable that infection has spread. In dealing with small bushes the best plan would be to prune off the branches one by one, to drop them into a pail, and then to destroy by fire or by steeping in a cask containing a solution of four ounces of bluestone (copper sulphate) or two ounces of liver of sulphur to the gallon of water. In the case of large bushes, it would usually be best to prune off all the young shoots and then to destroy the leaves on the lower part of the bush by employing a spray containing eight ounces bluestone to the gallon of water. It would not be safe to attempt to cut down or dig out affected bushes during the summer, for in doing so workmen would probably spread the disease.

Having disposed of all material and of the leaves, buds and fruit on all plants to which infection may have spread, the grower should next spray the whole plantation with a solution of half an ounce of liver of sulphur to one gallon of water. He should repeat the spraying within a week and continue it at intervals of ten days throughout the rest of the season. Spraying should be done on a dry day; if rain should fall soon after spraying, and the liver of sulphur is washed off, the bushes should be sprayed again as soon as they are dry.

Gooseberry mildew has attacked red currants, and there is reason to believe that it may also attack black currants and raspberries; these plants should therefore be kept under observation by fruit growers.

W. R. GILBERT.

LARVAE OF BUD-MOTH AND OF CANKER-WORM.

A Muskegon county correspondent inquires for markings which will aid in distinguishing the larvae of the bud-moth from the canker-worm. The larvae of the bud-moth may be said to make two appearances, the first when he hatches from the eggs in late summer or fall. He is then very small and feeds upon the leaves of the host plant until about half grown, when he folds himself in a silken case in the crevice of the twigs and thus passes the winters, in the northern states where but a single brood is hatched during a season. In the spring the larvae comes forth again. It is then small and of a dark brown color, measures about a quarter of an inch in length and has a shining head and a thoracic shield. The canker-worm, which is commonly called measuring-worms, because of the peculiar method of locomotion, vary in color from a yellow to dark brown and are variously striped. The mature worms are about an inch long. They leave the tree after they have matured, by either crawling down the trunk or by lowering themselves by means of a silken thread.

This brief description will perhaps help the subscriber and others in distinguishing these pests. The treatment for the control is the use of a solution of some arsenical poison. For the bud-moth two applications of Paris green, or arsenate of lead before the blossoms open, should prove effective in controlling it. The same materials may be used for the canker-worm, but the applications need to be made when the worms are eating the foliage. Sometimes this will occur early before the blossoms have fallen, while at other times, which are most general, the sprays will need to be applied after the blossoms have fallen.

CONTROLLING THE LEAF CURL.

Mr. Oss inquires how best to control the peach leaf curl. This disease appears soon after the leaves come out. It is a fungous trouble and acts similar to the disease that causes plum pockets. The leaves become distorted and swollen and many of those affected worst fall to the ground, leaving the tree nearly bare. Heretofore the universal remedy for this trouble was Bordeaux mixture. The first application should be made about two weeks before the buds begin to swell in the spring that the spores which propagate the trouble may be prevented from getting a start. If the spring is wet a second application of one-half strength can be used to advantage. When the trees are sprayed for the San Jose scale with the lime and sulphur solution it is unnecessary to spray with the Bordeaux since the former solution is a sure preventive when applied thoroughly to all parts of the tree. It is too late to do anything for the trouble this season.

Please mention the Michigan Farmer when writing to advertisers.

CONSIDER THIS WELL.

When we pay our good, hard-earned money for a grain drill, we have a right to one that has a feed that will correctly sow any seed that we want to plant and a fertilizer feed that successfully handles all brands of commercial fertilizers in wide range of quantities. We have a right to expect a well made drill, free from a lot of fads and so simple as to be readily understood. It should have furrow openers that open proper seed trenches, and which place the seed in the ground at an even depth without skips or bunching the grain.

The Empire Grain Drill has been on the market for more than half a century. If it was not right, it could not have survived. There are many Empire Drills in use today that were purchased from fifteen to thirty years ago, and they are doing good work today. This drill is manufactured by The American Seeding-Machine Co., Incorporated, Richmond, Ind., and is sold under a warranty that means much to the farmer. Write them and ask for their Empire catalogue. No matter what your seeding conditions may be you can get an Empire Grain Drill that will please and satisfy you. Go to your local dealer and ask to see the Empire Drill.

PURE COPPER 8 1/2 C Per Ft. CABLE RODS

Save \$20 to \$50 by getting your lightning rod outfit direct from the maker at manufacturer's wholesale price. Sent on trial, freight prepaid, before you pay. Our scientific pure soft copper, heavy cable system is the kind all high authorities endorse. Strongest guarantee with every outfit.

ABSOLUTE PROTECTION EASY TO PUT UP

FREE BOOK makes everything plain. Letters from users prove big saving and complete satisfaction. Don't pay the dealer's or agent's double price or take chances on quality. Too much is at stake. Don't risk life and property when absolute protection is yours at such low cost. Write for our direct-from-factory, free trial, guarantee offer and best book on lightning protection. Address:

J. A. Scott, President,
The J. A. Scott Company
Dept. J. Detroit, Mich.

Genasco

the Trinidad-Lake-Asphalt Roofing

Doesn't rot, rust, crack or break. Get it for your roofs.

The Kant-leak Kleet prevents nail-leaks. Write for Good Roof Guide Book and samples.

The Barber Asphalt Paving Company

Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

Philadelphia San Francisco Chicago
New York

HURST POTATO SPRAYERS

ON FREE TRIAL. No money in advance. Doubles your crop. Prevents blight, scab, rot, bugs. Spray FIRST, then pay us out of Extra Profit. Powerful pressure. Cyclone agitation. Strong and durable. Brass valves, plunger, strainer, etc. Guaranteed 5 years. Wholesale prices. We pay freight. Write us which machine you prefer, and get free Spraying Guide Catalog, and free Sprayer Offer to first in your locality.
H. J. HURST MFG. CO.
2410 North St.
Canton, O.

LIGHTNING

Send for fine, free book, all about lightning and the Dodd System of protection. Installed with binding guarantee of money refunded or damage made good. The standard everywhere. 3000 insurance companies endorse and reduce rates on D-S rodded buildings. Act now. Tomorrow may be too late. Address
DODD & STRUTHERS, 429 6th Ave., Des Moines, Ia.

Dowagiac Drills & Seeders Are the Leaders

THERE ARE MANY REASONS WHY DOWAGIAC MANUFACTURING CO. DOWAGIAC, MICH.

Fine Catalpa Trees, postpaid, 60c, 100, 150, 180. 8-10. Potatoes & Yam plants by mail 40c, 100, by exp. \$2.50 100. BROSIUS NURSERIES, Timon, O.

ALFALFA soil for inoculating containing proper bacteria for successful growth of alfalfa, 100-lb. sacks, 75c, half ton or over 50c per cwt. f.o.b. cars. 25c. per cwt. at farm. Can furnish best of reference, including Colon G. Lillie. Cash with order. Address
A. BOS, HUDSONVILLE, MICH.

FARMERS' CLUBS

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—B. A. Holden, Wixom.
Vice-Pres., J. D. Leland, Corunna.
Secretary—Mrs. C. P. Johnson, Metamora.

Treasurer—Mrs. Lewis Sackett, Eckford.
Directors—A. R. Palmer, Jackson; Wm. H. Marks, Fair Haven; C. L. Wright, Caro; E. W. Woodruff, Blanchard; C. P. Johnson, Metamora; Patrick Hankerd, Munith.

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

Associational Motto.—

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

Associational Sentiment.—

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

BENEFITS OF FARMERS' CLUBS APPRECIATED IN OTHER STATES.

Attention has, from time to time, been called to the organization of Farmers' Clubs in other states. In some of our sister states to the west, educators have recognized the need of and benefits to be derived from such organizations, and have sought to promote the formation of such organizations by the farmers of their states. The latest instance of this kind to come to our attention was a circular sent out last winter by the extension department of the North Dakota Agricultural College, which read as follows:

"Farmers' Clubs can be made social centers as well as the place for exchanging experiences on farm and home topics.

"This is the day of co-operation or combination. Men in all lines of efforts except possibly the farmer, come together at more or less regular intervals to talk over their work, to give each other the benefits of each other's experiences, and to come to a better understanding in their business relations. The different manufacturers, the editors, the retailers, the scientists, the educators, laborers, etc., hold meetings. Why not the farmers? We are in more need of it than any of the others, from the social standpoint, from the standpoint of swapping experiences, and from the standpoint of a better understanding of business matters.

"As farmers we live more or less isolated and our work is so varied that it has something of interest and that needs attention all the time, yet we must learn to drop it all for a social hour occasionally and for our wives and children as well as for ourselves. In fact, they need it more than we do as there is not the variety in their work nor so much to hold their interest and attention.

"In every community there are some farmers who are making a good success with some thing, as growing corn, trees, potatoes, fruit, or raising cattle, hogs, horses, etc. There is no magic about it, except doing the right thing at the right time, and they would be glad to tell how it was done. They are likely not ready speakers before a large audience but in a conversational way they can tell the story. If all were to study and try to improve along the lines of the successful farmer it would make the community an outstanding one.

"Then there is the good wives in every community who have had fine success in some line of work, as making bread, canning fruit, growing flowers, house decoration and the hundred and one other things.

The community has among its members those who can teach each other from their own experiences, and the Farmers' Club with its stated meetings is the ideal place to gather and exchange this valuable information. Few realize how valuable they are. Reports could also be made on bulletins from the agricultural experiment stations and on articles in the agricultural papers and magazines.

"Such a club would bring together a great teaching force; specialists in almost every line of farm and home activity. It would be a great incentive to make these specialists study deeper into their lines of work, to learn more of what others have done. Speakers can often be secured from the agricultural college and farmers' institute. Now, do not underestimate your worth to the community nor your qualifications for instructing others. No information is so valuable as that which comes from a man or woman who has actually secured results.

"Then—better understanding in business relations. There are so many things in which farmers can co-operate and so many things we can do by co-operating that we cannot profitably do alone. The Farmers' Club is the place to get together, to learn how to work together. We farmers are naturally independent, yet we must learn how to work together, otherwise those interests that are organized will profit at our expense.

"Let us get together and organize a Farmers' Club that we may secure the social, educational and business advantages that it will bring."

If the benefits of the Farmers' Club are thus recognized by agricultural educators and farmers in other states, how much more fully should they be recognized by those in our own state who do not enjoy a membership in such an organization, notwithstanding the fact that their value has been demonstrated in Michigan as nowhere else. Also, if the educators of other states think it worth while to promote the organization of such clubs, should not the fact prove a stimulus for more earnest work along the line of Club extension by the active Clubs in Michigan. Why not do a little work along this line during the summer picnic season?

HOUSEHOLD ECONOMICS.

Synopsis of a paper read by Mrs. C. L. Beebe, before the Ingham County Farmers' Club.

Domestic science and domestic economy, household science and household economy are but other names for cooking, sewing and general housework. The first cooking school was established in 1874 in New York City. Miss Parloa has the honor of being one of the first teachers of cooking, a school being established in Boston in 1877. Philadelphia and Washington soon followed. Cooking as an art has been a backward industry. The men have been slow to provide and the women slow to use modern inventions. To place one in a kitchen of two centuries ago with the fireplace and brick oven and today with the range, cream separator and bread mixer, and there has been some improvement. Domestic science should be a factor in our education and the time is not far distant when a girl will know how to make a loaf of bread, cook a steak and brew a cup of coffee before she leaves school.

GRANGE

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

THE JUNE PROGRAMS.

Suggestions for Second Meeting.

"A merry heart, a merry laugh,
A face with lots of sun in it,
A merry tongue with merry chaff,
And quip with lots of fun in it."

Smile provokers.

Notes of progress—1. In inventions. 2. In farm crops and animals. 3. In laws and public matters.

Recitation, "Jes' Plain Torpedoes," by a boy.

Labor-savers for making women's work easier. Discussion, led by Woman's Work Committee.

Report of "The One Improvement Club."

Music to intersperse in this program, in charge of Pomona.

A GOOD GRANGE DEPUTY.

Beyond question, and without saying anything against the good work of others, printer's ink is the best Grange deputy ever put into the field. He is always and everywhere available. He is willing to work in season and out, under all conditions and in all sorts of weather. He labors for the least financial return. He enters every home and silently waits upon the convenience of the owner for the presentation of his claims. He does not "argue back," but the next week comes at his would-be convert from another point of attack! Quietly he convinces and converts a desirable rural population into efficient Grange membership. There has been no bluster, and no revival methods; no great expenditure of time or money have been employed but the work is done, once for all.

A few instances may serve to illustrate this claim for printer's ink:

1. One winter day a stranger presented himself at the door of my home. In his hand he held a list of twenty-five signatures of representative farmers and their families. He had come, he said, to ask that a deputy be sent to instruct these

people in Grange work, adding, "We read about the Grange in the Michigan Farmer and have decided that we want such an organization in our neighborhood." That was a dozen or more years ago. The man died later but not until he had been steadily advanced in the work and held the position of Master of our Pomona organization at the time of his death; but the Grange he thus promoted still thrives.

2. In the daily paper of a stirring northern town no more readable articles appear than those which herald the approaching local Grange meetings—except, indeed, it be the reports of the actual meetings themselves. Printer's ink also goes before and after the Pomona of the county in which this town is located in similar fashion; and likewise it paved the way for the two large and successful sessions of State Grange which were held in this same city beside Traverse Bay. Local organizing has, at the same time, been going on in all that section of the state where the seed-bed has been so well prepared.

3. A year ago word was passing about that a certain foremost Grange was threatened with a slight decline. Six months ago printer's ink took a hand in the game and every fortnight since has issued a miniature bulletin, containing favorable comments on the last meeting and always promising better things ahead. Each program has been, perhaps, no more carefully prepared than many another, but its construction has been of a unique order and set forth in phrases and jingles which tended to excite curiosity and enlist co-operation. As a result a class of twenty candidates for the third and fourth degrees this week attest the value of the policy of printer's ink.

This policy at its best is persistently constructive and not destructive; there is no whining about small attendance, no grumbling about This or That's shortcomings, but every bright spot is made to shine and every prosaic detail of the program is set forth honestly but attractively.

JENNIE BUELL.

OREGON STATE GRANGE.

The Patrons of Oregon hold their annual State Grange meeting during the month of May. This year's meeting, which was the 38th annual gathering of the organization, was held at Corvallis, the seat of the state agricultural college.

The reports of officers showed that 46 new Granges had been organized during the three months just preceding this meeting, giving the state a total of 183 Granges with a membership totaling nearly 10,000. The executive committee reported a balance of \$5,200 on hand after the settlement of all outstanding accounts.

The legislative committee, on the first day of the meeting, recommended that two bills be initiated before the next general election for the advancement of good roads in Oregon. One of these is to provide that counties may vote bonds for roads, but the petitions must set forth what roads the money is to be expended on and how much is to be used in each instance.

The second measure is to provide for a state road commissioner to be appointed by a committee consisting of the Governor, the State Engineer and the Attorney-General. This recommendation was warmly discussed at a later session and a resolution passed directing the legislative committee to work hard for both measures.

During the meeting the Patrons took occasion to inspect their agricultural college. A resolution commending the work of the institution received the support of practically all of the delegates, as did one favoring a careful inquiry into the management of the agricultural college and state university. A committee was appointed to make this inquiry and report at next State Grange. The introduction of industrial training and courses in agriculture in the county schools was advocated by the women. They argued that the young people of the country districts have been neglected, and made a strong plea for such improvement in economic and social matters as would keep the young men and women on the farm. It was voted to petition the federal government to turn over the land recently recovered from the Southern Pacific railroad to the state for school purposes.

Before the meeting adjourned the Grange sent a strong telegram to the state's representatives, in both house and senate, at Washington, urging them to stand for protection for farm products equal to that claimed for and granted to manufactured products. The Grange voted to hold its 1912 meeting at Roseburg.

COMING EVENTS.

Pomona Meetings.

Western (Ottawa Co.) Pomona, with Ottawa Grange, at Herrington, Friday and Saturday, June 16 and 17. Chas. W. Garfield, state speaker.

Ingham Co., with Holt Grange, Friday, June 23.



"A book that does him honor."

Efficiency

in a horse or team depends upon the quality of the harness and its suitability for the work for which the animals are used.

There is a WILLIAMS' harness to fit every horse, and a style for every kind of work; thirty-one styles of single harness, forty-four styles of double harness.

No book on the subject of harness and saddlery goods ever printed is so complete as our new 76-Page Harness Catalog. It's something more than a catalog; it is an invaluable text book that should be in the hands of every horse owner.

We printed a copy for YOU.

Whether you drive one horse or own a hundred, you should not fail to send for this new book. How to save one-third on your purchases of harness, saddles, blankets, robes, fly nets and other horse and stable goods is a revelation in store for you if you have not yet seen this new catalog.

Lay this paper down just long enough to write us a postal card this minute. Just say, "Send me the new Harness Catalog," and add your name and address.

SEARS, ROEBUCK AND CO.
CHICAGO, ILL.

Be Fair To Your Horses Write Now for our Free Book

Get more work out of your horses—at less cost by treating them right. Galled necks and sore shoulders cost big money. Prevent them. 20th Century Collars are the horses' best friends, the farmers' biggest money savers. Pressure is just right—where the flesh is. Moves with the horse's shoulder, relieving pressure, preventing rubbing, chafing or choking. Adjustable in size 16 inches to 26 inches.

Twentieth Century Horse Collars

cut down veterinary bills—keep the horses in finest working condition all year 'round. Outlast 3 to 5 ordinary collars. Wait till you get our book before you buy another collar.

TWENTIETH CENTURY MFG. CO.
134 W. 17th Street, Chicago Heights, Ill.

BINDER TWINE, 6½c POUND
Guaranteed the best made. Farmer agents wanted. Sample and catalog free.
THEO. BURT & SONS, Melrose, Ohio.

PATENT SECURED OR FEE RETURNED
Free Patent Book, Selling Guide and List of Buyers and Manufacturers of Inventions. Advice Free. Send sketch.
FARNHAM & SUES, Attys., 540 F. St., Washington, D.C.

DO YOU WANT WORK?

WE have absolutely the best proposition to offer those who can give all or part of their time to us. To those who can give all of their time we pay a liberal salary and expenses. For those who can give only part of their time we have the most attractive commission and rebate proposition ever offered. Teachers and Students can earn a large salary during vacations. The work is pleasant and instructive. Write at once for full particulars. Addressing BOX F, care MICHIGAN FARMER, Detroit, Mich.

"BABY" ELEPHANT TAKES A "JOY RIDE."

As a result of a wager that a set of pneumatic tires would not support the weight of a half-grown elephant in addition to the weight of an ordinary touring car, the residents of Toronto, Ont., were a few days ago treated to the unusual sight of a "baby elephant" being driven about in a "baby tonneau."

The fun had its inception in a conversation between L. C. VanBeaver, an officer of a local automobile tire company, and a friend of his who is business manager of a traveling circus. The discussion turned toward the marvelous pressure resisting power of the walls of a pneumatic tire.

"Yes, sir, one of our regular pneumatic tires is strong enough to support the weight of 'Patsy,' if she were but to climb into a tonneau and take a ride like other ladies of caste," said the tire company official, referring to "Patsy," the 2,700 pound young elephant which is one of the chief attractions of the show.

The showman protested that Mr. VanBeaver did not know how much a husky young elephant weighed and to settle the question a nominal wager was put up and a touring car with a baby tonneau was secured. The car was equipped with pneumatic tires which had already traveled several hundred miles but these were not changed.

After some coaxing Patsy was induced to enter the car while her trainer stood on the rear seat to keep her from taking fright and bolting. Much to the chagrin of the circus crowd the tires refused to flatten and the juvenile pachyderm was driven several blocks through the city, to the huge delight of the crowd. After the first few rods Patsy seemed to enter into the spirit of the thing and gave every evidence of enjoying her novel "joy ride."

BREEDING A NEW ANIMAL.

Possibly no branch of animal breeding has attracted so much attention and gives promise of producing a new beast of burden as has that of crossing the zebra with horses and donkeys. For several years investigations have been in progress at the experiment station of the Bureau of Animal Industry, of the Department of Agriculture, with a view to the production of a new and useful hybrid of the mule type. While this work of the Department is not new, yet the work of the Bureau of Animal Industry differs from that done elsewhere, in the fact that the largest type of zebra—the Grevy—is being used. The Bureau received its first incentive from the impression made by the splendid conformation, large size, and great beauty of a Grevy zebra at the National Zoological Park which had been presented to President Roosevelt by the King of Abyssinia.

The results with these hybrids thus far have been successful. Eleven of these hybrids have been foaled, six colts and five fillies. Two colts and four fillies are now alive and vigorous. They are apparently as hardy and endure the cold of this climate as well as the donkeys. These hybrids show a decided improvement over either parent in action, conformation, and disposition. Their sire weighs 800 pounds and is 13½ hands high. The average weight of their dams is 550 pounds and the average height 12 hands. The weight of the hybrids at the age of one year was more than 500 pounds each and measured 12 hands in height. They have good action, a neat, clean-cut appearance, and are as easily handled as horse foals of the same age. These hybrids will be kept until they reach the breeding age, after which they will be tested as to fertility, among themselves, and also with horses, zebras, and donkeys. Considering the apparent similarity of the species to which zebras and donkeys belong, there may be a possibility of their hybrids being fertile.—G. E. M.

During the first three months of this year five leading western markets shipped 102,276 more cattle on the stocker and feeder order to feeding districts than a year ago, the increase being about 42,000 head over the last five-year average. It should be remembered that the movement a year ago was unusually small. Should there be a normal demand for beef cattle, there promises to be a scarcity of finished cattle later on, and at all events there will almost assuredly be a cattle shortage for grazing purposes. There is a world of grass, and there will not be anything like an average supply of young cattle for the pastures and ranges of the country.

Get Oversize Tires

Avoid Blow-Outs—Save Overloading

Goodyear No-Rim-Cut tires—10% oversize—cost no more than tires that rim-cut, or tires not oversize.

The sale of Goodyear No-Rim-Cut tires has multiplied six times over in the past two years. Over 600,000 have already been sold.

Sixty-four leading motor car makers have contracted with us for these tires. The demand from users is now so great that our mammoth factories run night and day.

This patented tire has become the sensation. It is saving millions of dollars to motor car owners. It is a tire that you should know.

No Hooks—No Bolts

The No-Rim-Cut tire has no hooks on the base. No tire bolts are needed to hold it on.

Into the tire base we vulcanize flat tapes made of 126 braided wires. These make the tire base unstretchable. The tire can't come off because nothing can stretch it over the rim flange. But when you remove one flange, the tire slips off like any quick-detachable tire.

This braided wire, flat tape feature is controlled by our patents. It is the only way known to make a safe hookless tire. That is why other tire makers still recommend the old-style clincher tire.

tire—the removable rim flanges must be set to curve inward. They must grasp hold of the hooks in the tire base, to hold the tire on. Note how those thin flanges dig into the tire when deflated. That is the cause of rim-cutting, which may wreck a flat tire in a moment.

10% Oversize

The No-Rim-Cut tire, where the rim flanges flare outward, can be made 10% over the rated size and still fit the rim. And we give you that oversize without extra cost.

That means 10% more air—10% greater carrying capacity. And that, with the average car, adds 25% to the tire mileage.

This oversize takes care of your extras—top, glass front, etc. It avoids the overloading which causes blow-outs on nine cars in ten which have skimpy tires.

These two features together—No-Rim-Cut and oversize—will under average conditions, cut tire bills in two. Yet these tires cost you nothing more than other standard tires. Do you wonder that men who know these tires insist on getting them?

Our latest Tire Book, based on 12 years spent in tire making, tells many facts which motorists should know. Ask us to mail it to you.



The No-Rim-Cut Tire

This tire fits any standard rim. Simply reverse the removable rim flanges—that is, slip them to the opposite sides. They will then curve outward, as shown in the picture above. The tire comes against a rounded edge, and rim-cutting is made impossible.



Ordinary Clincher Tire

In the ordinary tire—the clincher

GOODYEAR
No-Rim-Cut Tires

THE GOODYEAR TIRE & RUBBER COMPANY,

47th Street, Akron, Ohio

Branches and Agencies in 103 Principal Cities

We Make All Sorts of Rubber Tires

(324)

Your Feed for One Cow Costs Enough to Feed Five

The Saginaw All-Steel Door Frame is patented and no one else can use it.

Positively prevents collapsing or bulging.



—unless you feed on the Silo Saving Plan. The Saginaw Silo Book, "The Modern Way of Saving Money on the Farm," gives figures from actual tests on farms of your state. Write for the book today.

Amazing profits come from the good old-reliable Saginaw Silo because it alone is made scientifically right, to last a lifetime.

FARMERS HANDY WAGON COMPANY SAGINAW, DES MOINES MINNEAPOLIS

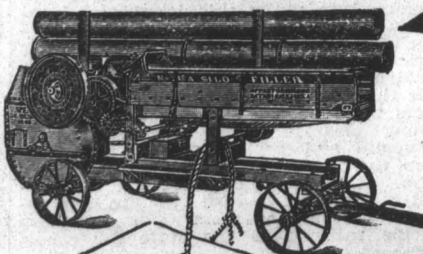
owns the patents on the Saginaw All-Steel Door Frame which positively prevents collapsing or bulging. No one else is allowed to use it. Our air-tight doors, large door openings, handy combined door fastener and ladder; our hoops, lugs, etc., and the everlasting materials we use, are all described in our Free Silo Book. The Saginaw Silo is now sold direct from the factory only. You get the benefits of direct dealing with the factory.

Ask for special price on the Whirlwind Silo Filler—guaranteed to cut and elevate more fodder in any given time and do the work with less operative power than any other filler manufactured.

The Whirlwind is sold direct from the factory also. The one filler fit to go with the Saginaw Silo.

Write today for the Silo Book, and Whirlwind Filler facts.

FARMERS HANDY WAGON COMPANY, Station 95 Saginaw, Michigan
Western Factory, Station 95, Des Moines, Iowa
Northwestern Factory, Station 95, Minneapolis, Minn. (18)



We Guarantee it under equal conditions (length cut, power, etc.) to do more and better work, size for size, than any other make, and to last longer.

APPLETON SELF SILO FILLER

—made in three sizes: for custom work—26-A, neighborhood work 18-A, individual work 15-A. Has a solid oak frame; positive feed; traveling self-feed apron; big throat capacity; four spiral tool steel knives; special springs to prevent binding and clogging; one lever starts and stops both feed rollers and apron; flexible swivel top distributor, handy side table, detachable foot board, safety device to prevent breakage. Changed from "ready for the road" to "ready for business" in few minutes. Write today for free illustrated catalog.

APPLETON MFG. CO.
420 Fargo St.,
Batavia, Ill.



Read that Guarantee

Fastest Hay Press 2½ Tons Per Hour

Greater capacity is guaranteed in all Spencer Presses. The guarantee with our Alligator Press says "22 tons in 10 hours or no pay." Large feed capacity—smooth and compact bales, uniform in size. Load full weight into cars. All Spencer Presses are biggest money makers because they give greatest capacity at smallest operating and repair cost. Write today for Free Illustrated Catalog E.E. describing full line.

J. A. SPENCER
104 William St., Dwight, Ill.



BALE 18 TONS A DAY HAY

Our "Cyclone" 3 stroke self feed hay press is the latest, most powerful and most efficient press on the market. Each circle of the team presses in three charges. The self feed automatically puts the hay to the bottom of the bale chamber. These improvements wonderfully increase capacity of our presses. Write today for circular K-196 which gives prices and details of five days' free trial.

GEO. ETEL & CO., QUINCY, ILL.

Set Your Fence Posts 35 to 40 Feet Apart

saving half the post expense, and still have a stronger, more thoroughly stock proof fence, if you use the

P. & B. Fence Anchor

Simple, cheap, easy to use. No digging required. Holds in any soil. Absolutely keeps hogs from going under wire fence, even in depressions of the soil. Protects your stock from lightning by forming ground connection.

FREE Special driving tool with order for 100 or more. Ask your dealer or write today **J. M. PEEL & BRO., Box 202 Marysville, Ohio**

THE LARGEST AND BEST LINE OF WELL DRILLING MACHINERY

in America. We have been making it for over 20 years. Do not buy until you see our new Illustrated Catalogue No. 14. Send for it now. It is **FREE**.

Austin Manufacturing Co., Chicago

ALWAYS mention the MICHIGAN FARMER when you are writing to advertisers.