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Making the Most of the Corn Crop.

IT is one thing to raise a good crop of corn and quite another to utilize it so that one gets the most feeding value from it. From experience, I am convinced that the silo is one of the most economical and satisfactory adjuncts to live stock farming that is to be had. Silage is far superior to stover or cornstalks for feeding purposes and has many advantages over the other methods of corn harvesting. I have been told in a few instances that it did not pay to make corn into silage and that the silo was a useless contrivance. I have seen silos standing idle that should have been doing valuable service and saving money for their owners—all this has occurred through the improper making and use of the silage.

Corn Nearly Matured Makes the Best Silage.

When farmers first began to use the silo, they were advised that the corn should be put in very green. This resulted, and still results, in a very sour silage which causes a severe diarrhea and this in turn brings on other ailments. I have heard many diseases laid at the door of the silo. Many of them have been taken up again, but we still hear claims that silage-fed cows are more susceptible to tuberculosis, that silage causes abortion and a dozen other dangerous diseases.

Practical results show that corn must not be too green to make the best silage. It has been recommended for cutting all the way from the tasseling stage to the time when the stalks are ripe and mature. Dairy men and stockmen who have had a great deal of experience say that corn nearly mature makes the most palatable and satisfactory silage. Just after the kernels are glazed over and commence to harden, all of the plant food is stored in the ear; all that is left to do is for the moisture to evaporate. "When corn is about right for hand cutting, it is also about right for silage," is the latest advice. The only difference between the grain corn and the silage corn is that in the one the moisture is evaporated out of it, while in the other, we want the moisture to remain—enough to moisten the mass thoroughly when placed in the silo.

In some sections of the state the frost gets into the corn field before the corn harvester does. Should this

occur, the corn harvester should be busy in the field the next day after Jack Frost has been busy at night. If the frosted corn is allowed to stand a week or ten days, it becomes dry, weathers and makes an unpalatable silage, at the best. If the corn is so dry that there is not enough moisture to saturate the mass, water should be added through the blower while the corn is being cut up. This may be added by a hose attached to a tank or elevated barrel. It is claimed that some of the best silage ever fed at the Indiana station was made from corn upon which most of the leaves were dry and all the water an inch hose would carry was run into the blower constantly during the filling.

Filling the Silo.

The greatest cost of the silage is in the initial investment required to buy a silo, corn binder, cutter, distributor,

It is almost a necessity that a few farmers co-operate in their silo filling. This reduces the cost per ton of the silage after it is made. In response to a query sent out by the Missouri Experiment Station, over 300 farmers replied, stating that their silage cost them from 23½ cents to \$1.65 per ton, the average being about 60 cents a ton. This is much cheaper than the corn could have been harvested by any other method. The corn binder is quite an essential piece of machinery for harvesting the corn crop. If the crop is good and the hauling distance not too great, at least one day's supply should be cut before the silo is to be filled. Then, while the work is progressing, a man keeps cutting and this keeps the corn green all the time and none dries out. In many localities, an engine from a local threshing outfit may be hired for

day than was put through when a different man was on each job. This makes quite a saving when one is boarding from seven to ten men, so they hire a feeder and pay him 25 cents an hour.

A point where so many amateur silo owners make a mistake is in taking the ears from the stalks. It has been demonstrated that better results are gotten where the whole corn silage is fed than where just the leaves and stalks are put into the silo and the grain used separately.

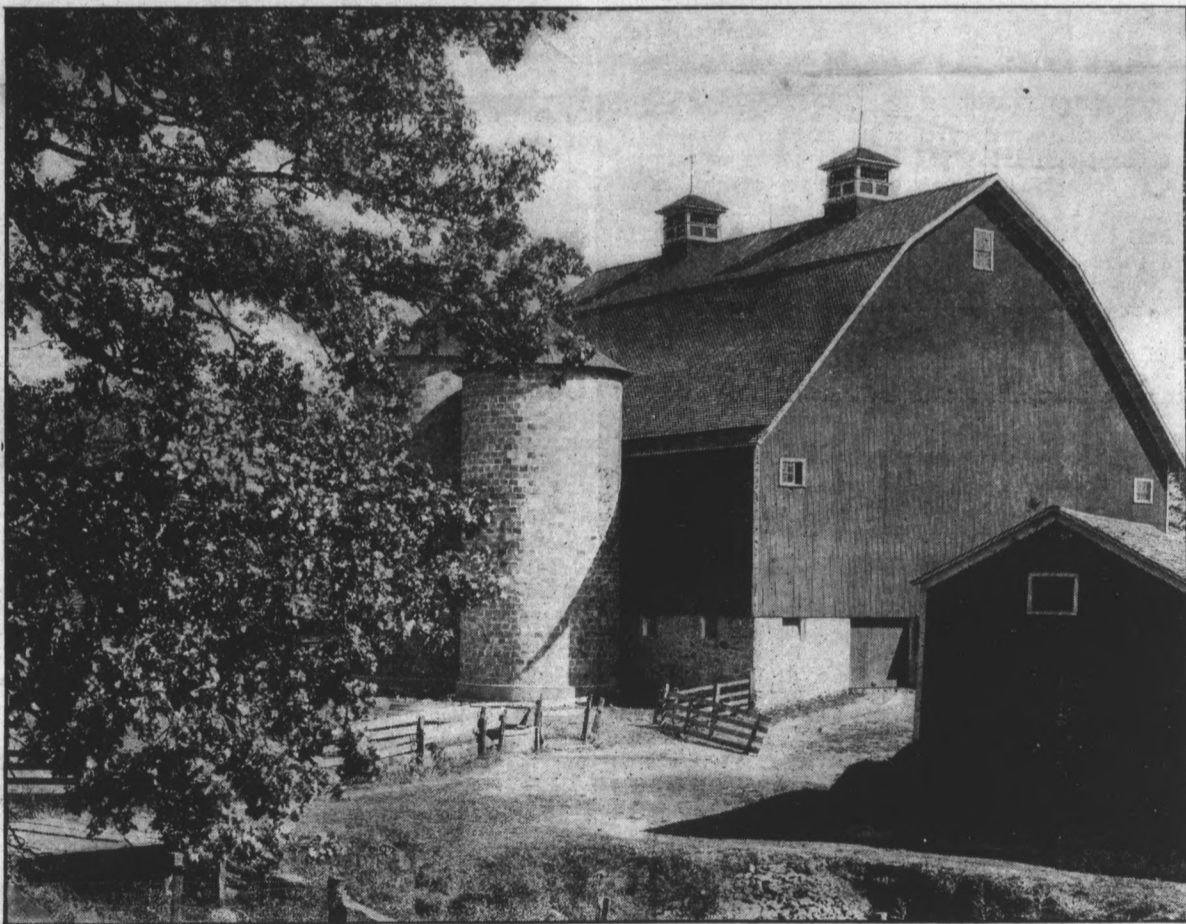
The most particular detail of silo filling is to have the cut material well distributed around inside the silo. Put at least two good men inside, and three are better. They should keep the corn well distributed, have the center a little higher than the outside and keep tramping. This is the all important part. Each air space that

is left will be surrounded by moldy silage and so each air space that is crowded out will give just that much more edible silage.

After the silo has been filled, some precautions are usually taken to keep the top from spoiling. Some put wet straw through the cutter until it is a foot or more deep on top of the silage; others pack the top well and then sow oats on thickly. These soon sprout and the root growth quite effectually excludes the air. Others put on several inches of sawdust, while still others dump on a barrel of salt, but the latest idea of shutting out the air from the top of the silo is to run a half-inch layer of hot pitch over the surface. This excludes the air and may be broken up and laid aside, for use next year when the silo is refilled.

Feeding Silage.

How, when, and to what animals silage should be fed, are much mooted questions. To answer them fully would require volumes. I have seen good sweet silage fed to all classes of farm live stock with no ill results attending. I have heard speakers say that silage should never be fed to horses or animals with but a single stomach, but I have seen horses come out in the spring in fine condition when they were wintered almost exclusively on corn silage. All farm animals will eat it. It is a fairly good substitute for green feed for chickens, hogs relish it, and dairy men cannot get along without it.



A Second Silo for Summer Feeding is a Valuable Aid in Making the Most of the Corn Crop.

engine, etc., but we must bear in mind that this investment is not for a single year but is scattered over a great many years, if the materials are handled carefully. The investment in all of these, if one man is to own and operate them, is immense. This is impractical unless one has a large acreage to put up. Professor Warren, of Cornell, found in his investigations that the average New York farm is too highly capitalized with machinery—in other words, the valuation of the machinery on the average farm is higher than it should be in proportion to the size and value of the land.

from eight to ten dollars per day, the one whose silo is being filled to furnish the coal and board the men. There is another point in connection with filling the silo which has some bearing upon the economy of filling, i. e., that of feeding. A number of Nebraska farmers working together, kept accurate accounts of the amount of silage put through by various feeders and found that it was more profitable to hire a man to do all the feeding than to have a new man on the job each day. They found that an experienced feeder would put through one-third more fodder in a

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Green and excessively sour silage must be fed pretty carefully if no harm is to result, but silage made of corn that is properly matured is palatable and safe feed for all kinds of stock.

The process of fermentation which takes place in the silo changes some of the unavailable materials in the stalk and ears to available animal food. No chemist has as yet been able to fully explain this, but it has

been shown to be true and hence it lessens the food value of the corn crop to take the ears off and feed them separately.

Finally, never feed moldy or frozen silage. Moldy silage is sometimes poisonous and should be thrown where stock cannot get it. Frozen silage is all right after it thaws out, but often causes a severe diarrhea if fed in the frozen state.

Ingham Co. I. J. MATHEWS.

A Michigan Potato Tour.

A NOTABLE group of plant pathologists, college men and county agricultural advisors has been making a rapid survey of conditions in some potato growing sections of Michigan, in continuance of work that started in the New England states and will be carried on later in Minnesota, Wisconsin and elsewhere. Potato diseases, types and general conditions as affecting the problem of clean and pure-bred seed for the southern trade and elsewhere are being studied and copious field notes are taken by the men as they proceed from section to section. General results will be summarized when the tour is completed and the states, or parts of states, having the best record no doubt will profit by the recommendations that will follow.

Two scientists from abroad accompany the party and are lending aid in the investigations. They are Miss Johanna Westerdyk, of Amsterdam, Holland, leading plant pathologist of The Netherlands, who comes to America from research work in Japan, Java, Sumatra and other countries, and is making a world tour in the interests of her country. The other member is Dr. I. C. Appel, of Berlin, Germany, head of biological work there and with international reputation as a specialist in potato and plant diseases. Other members include Dr. W. A. Orton, of Washington, chief of truck and cotton plant diseases; Dr. Wm. Stuart, of Washington, secretary of the National Potato Association; T. C. Johnson, of Norfolk, Va., director of the Virginia Truck Experiment Station; E. S. Brigham, of St. Albans, Vt., commissioner of agriculture; W. J. Morse, of Orono, Me., director of Maine Experiment Station.

This party entered the state at Port Huron and after a short tour of St. Clair county, where the pioneer organization of potato growers is located, came on to Grand Rapids, August 16. Here they were met by Dr. Eben Mumford, of East Lansing, head of federal farm bureau work in Michigan, and the following district and county agents: J. F. Zimmer, of Manistee; J. W. Chapin, of Branch; C. B. Cook, of Allegan; E. P. Robinson, of Saginaw; H. P. Blandford, of Newaygo, and J. H. Skinner, of Kent; Dr. E. A. Bessey, and G. H. Coons, of the botanical department of M. A. C., and C. W. Waid, extension worker, M. A. C.

The automobile trip through Kent and Montcalm counties which was taken the following day was arranged for by J. H. Skinner, of Kent county, and was carried through smoothly without a hitch. Donors of the machines for the 100-mile drive included O. W. Braman, a prominent fruit grower of Grand Rapids; J. P. Munson, president of the Michigan State Horticultural Society; Irving Woodworth, owner of a large farm north of the city, and Carl Wiley, of Reed & Cheney, sales agents for the Grand Rapids Greenhouse Co. Others accompanying the party were C. Hunsberger, a leading farmer of Kent county; W. K. Plumb; secretary Grand Rapids Association of Commerce, and Paul Leake, of the Greater Michigan Fair Association. Five machines and 24 people comprised the party which left Grand Rapids early Monday morning, with County Agent Skinner as

pathfinder. The tourists proceeded north to Rockford, thence easterly to Greenville, where luncheon was eaten. Here the party was joined by County Agent Blandford, of Newaygo; J. J. Bale, of Lakeview, and others, and there were seven cars in line on the afternoon trip through potato growing sections of Montcalm county. Mr. Bale was the guide during this part of the journey. Grand Rapids was reached again in the evening, where the members of the party from outside the state, with some of the state college men, left on the night boat train for Milwaukee, on their way to the upper peninsula.

The Kent-Montcalm tour was one of a few hours only and the glimpses taken were fleeting and incomplete, yet every moment of time was improved. Investigations were confined almost wholly to potatoes, though an exception or two was made in the case of bean fields where yellowed and dying plants was diagnosed by the experts as bacterial blight. No anthracnose was found.

Since 15 or more potato fields were visited and in most cases the owners were not there so that specific information was lacking as to varieties, methods of fertilization, spraying, time of planting, etc. One of the pleasant revelations was the way the pine lands in the vicinity of Trufant have been cleared up and made handsomely productive farms by the thrifty Danish people. No signs remain of the pine timber but the stump fences and some of the best potato fields visited were on the farms of Mr. Johnson and of Mr. Peterson in this section. A prolonged drouth was affecting this section at the time, but with rains in due season these light lands will produce around 300 bushels of tubers per acre this season.

Potato Diseases that were Found.

In general, the crops everywhere were looking good, and no diseases of an ugly nature were found. Of course, with so many plant doctors in the party, and all of them looking for trouble, armed and equipped with knives, microscopes and sharpened senses, some diseases were discovered, and the specimens were taken along for further use. For example, rhizoctonia was found and one of the experts was heard to assert that a potato field anywhere without some traces of this genus of fungi would be rare indeed. The outward sign of the trouble is a small and spindling plant or hill, and on pulling it up an investigation shows that the parasite has attacked the stem at or just below the surface, destroying bark in whole or in part, and often cutting off tuber stems. Small hard knots of mycelium, known as sclerotia, were also found on tubers. Sclerotia is a later stage of the disease and is nature's provision to carry over the fungus into succeeding years. This trouble infects soils also, and the remedy is to use clean seed, treating infected seed the same as for scab, and long rotation of crops. Dr. Orton stated that rhizoctonia would give no trouble in a seven-year rotation.

Fusarium was also found in some places, the first symptoms being light green foliage, especially the lower leaves, with partial wilting or rolling. This is a fungus trouble also, and cross sections of the main root of the

plant near the woody part are of a brownish color. The fungus also passes into the tuber at the stem end for some distance. This trouble is traceable to infected seed and to "potato sick" soils.

Then there were signs of early blight in some fields and one case was diagnosed as "curly dwarf." No late blight was found, the season being early as yet for its development. Plenty of signs were found of Paris green injury to foliage in spraying. The bugs have been unusually thick this season and the spray dope has been applied pretty strong.

Criticisms Offered.

Some fields were found where varieties were badly mixed and where the stands were poor. These faults rather than diseases, seemed to be criticized most by the experts. The check-row system of planting, with hills three feet apart, was also questioned by the visitors, on the theory that you are not getting half the yield that you might have, because only half the land is working. Some of the growers defended this practice, since the cultivation both ways does away with hand hoeing in keeping out weeds, and also stirs the ground on all sides of the hill. Montcalm county growers are planting the Late Petoskeys quite extensively and some large fields of this variety were visited. The Petoskey is not so white as some other kinds, but is an ideal potato in other respects. It developed that not many of the farmers of this section are treating their seed potatoes and yet comparatively little trouble is reported from scab. Little spraying is done with Bordeaux, and some of the experts questioned this non-use of the blight-preventive, saying that it pays to spray even should there be no blight because of prolonged life of the foliage.

Michigan Honored as Potato State.

No "black leg," and, of course, no powdery scab or other terrifying disease, was found. Michigan growers are just beginning to think about the southern seed trade and have not catered to this demand heretofore. The varieties required, purity of type and freedom from disease, will be given more attention in the future. It is complimentary to Michigan that these experts have elected to come here and to give the growers here a fair show, in competition with other ideal potato growing states, for the seed business of the United States and possibly of lands across seas. Experts are taking their notes with pen and ink, in each potato field, and are trying to give each section and every state a square deal.

Michigan has been further honored by selection as the meeting place of the National Potato Association, which will convene jointly with the Michigan State Potato Association, December 23, in Lansing. Local associations of potato growers, affiliated with the state body, have been formed recently in Branch, Newaygo and other counties. St. Clair county has been organized for many months, under direction of County Agent Crandall, and is specializing in potato culture by planting several carloads of imported seed of two varieties, an early and a late type. Houghton county has organized, under leadership of Leo F. Geismar and the growers there are planting pure seed, largely Sir Walter Raleigh. Menominee will hold a "potato congress" on October 21-23, open to the entire upper peninsula, with prizes aggregating upwards of \$500 for best exhibits. The Commercial Club of that city is promoting the potato meet and hopes to make Menominee the tuber center of Michigan.

Kent Co. ALMOND GRIFFEN.

LILLIE FARMSTEAD NOTES.

The splendid rain on August 10 and then again on August 15, has improved crop conditions in this vicinity very materially. Corn, alfalfa, beets, pas-

ture, new seeding, potatoes, and, in fact, all unmaturing crops needed rain quite badly. Had the drouth continued as late as it did last year, corn and potatoes, it would seem, would have been well nigh ruined. I never saw the corn crop improve so rapidly in August as it has since the rain of the tenth. It is simply miraculous. And alfalfa, one can almost see it grow. With no severe early frosts a fair corn crop is practically assured. It is somewhat spotted, owing to unfavorable conditions early in the season, but I predict the greatest corn ears on record.

Fertilizing Alfalfa.

Just as soon as the second cutting of alfalfa was safely in the barn, I started the drill and sowed 400 pounds of 9:3 fertilizer per acre. We fertilized the entire 30 acres that we now have seeded to alfalfa. Eight acres has been seeded several years. Seventeen acres was seeded a year ago last spring. Besides, we have top-dressed with stable manure that has accumulated during the summer nearly all of the 17 acres that was seeded last year. Here is where a manure spreader pays big. One can not spread manure by hand and do a first-class job in top-dressing meadows. We have two spreaders and by using three horses and having a man load we got along pretty well, but it takes a lot of time to haul out any amount of manure. It costs a lot of money. We had to lay off to do part of the threshing and now the alfalfa is so large I shall wait till the third crop is harvested before we finish the job. The wheels of the spreader will crush a lot of the tender plants that are growing rapidly. One man and team applied the fertilizer on the whole 30 acres in less than half the time it took for two men and two spreaders to apply the manure on about 12 or 13 acres.

We had to fairly coax our thresher to come and thresh so we could have some seed wheat to fill orders. He got started in a neighborhood and the people wanted him to stay and finish before he left. We simply had to have some wheat threshed and so he came, and has done about half the job and gone. There is no hurry about the balance, as I am in no hurry to sell wheat this year. The prospects for better prices look good to me, yet one can never tell.

As near as we can estimate, just about half of the wheat is threshed and if so we will have over 2,000 bushels, for we have 1,044 bushels threshed. Our oats yielded 63 bushels per acre and they are of fine quality. Oats and peas are not threshed but they are a poor crop. They are light and chaffy, besides the army worm destroyed some.

ERADICATING QUACK GRASS.

Will vetch kill quack grass? If not, do you know any plant that will? Also, what is the best commercial fertilizer to use for alfalfa? I have nearly an acre of alfalfa growing and I wish to increase its growth. I also have a little over an acre of land with spots of quack. I wish to get rid of it.

Oakland Co. T. C. W.

We believe there is little hope of subduing the quack grass by the use of any crop which is depended upon to crowd it out or smother it. We do not believe that vetch would accomplish this result, especially where it had not been previously grown, and where the soil might not be well inoculated with the bacteria peculiar to the plant. Some experiments have been made in other localities in the use of hemp as a crop for subduing quack grass, but nothing official in the way of results secured is obtainable at this date. The best way to get rid of quack grass is to keep it so thoroughly cultivated as to give it no opportunity to make a growth above ground. On small areas it may be covered with tarred paper and smothered out in this manner.

Cement Block Construction for Barns.

I want to build a barn 40x80 ft., with full basement for stock, and with driveway, mows, etc., on the ground floor. Would it be advisable to build a barn of this kind out of cement blocks all the way up to the rafters, or would dampness penetrate through them? Would like to hear from some one who has considered this kind of barn building.—O. T., Montcalm Co.

CEMENT blocks are now extensively used in the construction of dairy barns as well as in general-purpose barns. If the blocks are properly made and laid, the wall will be water-tight. Block should be made from concrete mixed in the proportions of one sack of Portland cement to two and one-half cubic feet of clean, coarse sand, graded in size up to a quarter inch, to four cubic feet of hard, durable gravel or broken stone, varying in size from one-quarter inch up to one inch. The mixture should be made as wet as the machine will permit. Although a somewhat dry mixture is required in the usual block machine on account of the necessity of immediately removing the block from the mold, the average block maker does not use as "quaky" a mixture as he can. To use a very dry mixture is quick and easy; a little more time and care make better block. Very careful attention should be given to curing blocks and if possible, arrangements should be made to cure them by steam.

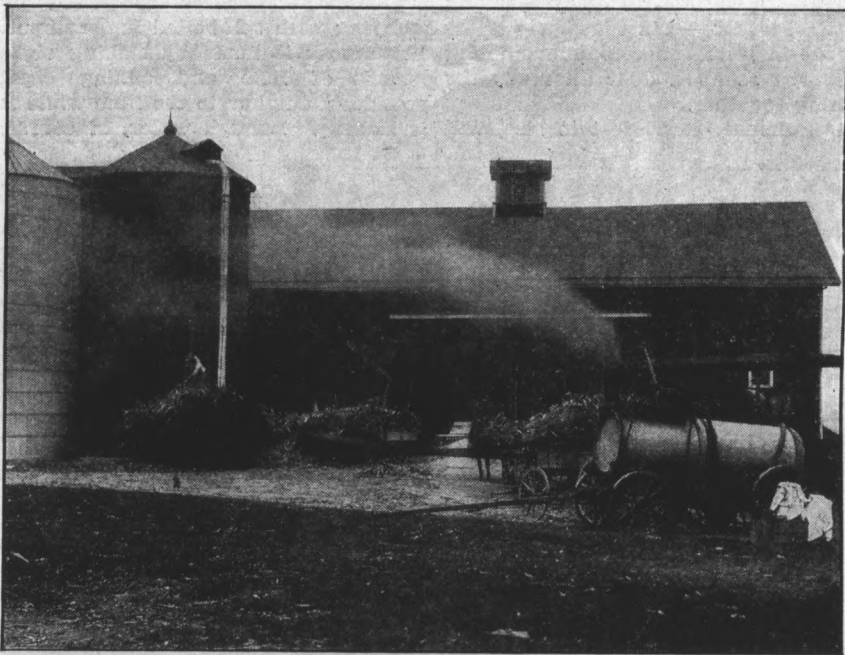
The prevalent belief that concrete block walls are not water-tight is largely chargeable to carelessness in

metal lath with concrete plastered on is more waterproof and gives better architectural appearance in the block walls than otherwise. By all means reinforce the walls with either block or solid concrete pilaster work. These relieve the monotony of the block walls and support the roof. If Mr. Thompson will make me a visit I think he will see some features of concrete barn construction that will enable him to construct his proposed barn to advantage.

Shiawassee Co. J. N. McBRIDE.

SMUTTY WHEAT.

The local millers complain that much of the wheat brought in to be ground is very smutty this season. Many farmers in this section are in the habit of having their wheat re-cleaned for seed at the flour mills. If the wheat re-cleaned in this way is not already infected with smut, it will become so infected because of smutty wheat being taken in and ground, almost daily, at these mills. For this reason it will pay every farmer, (especially in this vicinity), to treat his wheat before sowing, which is very simple and in-



The Cost of Silo Filling is Reduced by Employing an Experienced Feeder.

laying blocks in the wall. Blocks should be laid up with cement mortar mixed in the proportion of one sack of Portland cement to two cubic feet of clean sand. Hydrated lime to an amount not exceeding 10 per cent of the weight of the cement may be added to make the mortar work easier. Sometimes a concrete block wall is blamed for permeability when the real trouble is condensation of moisture upon the interior, caused by imperfect ventilation. In dairy barns especially, a large amount of vapor is given off with the animals' breath, and if proper ventilation is not provided this vapor condenses upon coming in contact with the cooler concrete surface, whereas in the case of a frame structure the vapor is absorbed by the wood* and although not noticeable to the eye, results in an unsanitary condition.

Illinois. H. H. RICE.
Michigan Experience.

In answer to Mr. Thompson, would say that the surface basement as compared to the sub-surface is in every way desirable and made possible by means of concrete and modern haying machinery. I would not advise the blocks in the gables but would use frame work and lumber siding for several reasons, particularly the cost and moisture penetration. If concrete work is desired in the gables, expanded

expensive, as the cost is not much more than one cent per bushel.

I will give my method of treating smutty grain. Sweep off a place perfectly clean on the barn floor or in the granary, (if there is room), then spread the grain about 10 or 12 inches thick on the floor. Next take a common watering pot or sprinkler, and put in two large tablespoons of formalin to each gallon of water that the sprinkler will hold, then pour in the water which will thoroughly mix the two together. Walk over the grain and continue to sprinkle the compound until the top of the grain is wet. Then shovel the grain over and continue to sprinkle and shovel over the grain until it all seems quite wet. One-half gallon of the compound is usually sufficient for one bushel of grain. If very smutty it will do no harm to put on more. After treating it is a good plan to cover the grain with some old blankets for a few hours. It is generally necessary to shovel the grain over some to get it dry before sowing. The formalin and water can be mixed in a pail and an old broom with the handle cut off short, can be used to sprinkle on the compound instead of a sprinkling pot, but I like a sprinkling pot best. It only takes a couple of hours to treat 25 or 30 bushels of grain, and it always pays where there is any smut. JOHN JACKSON.



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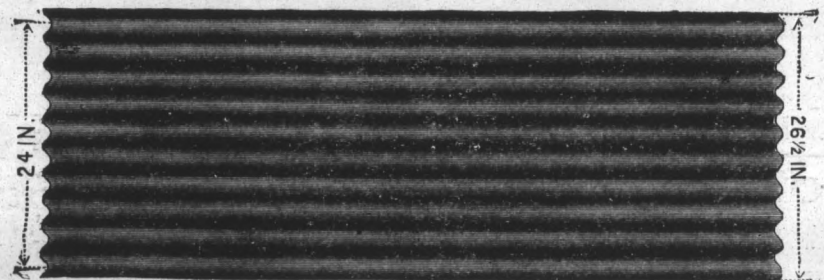
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THE SMALL FORCING HOUSE.

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Many who would like to experiment in raising early vegetables for the home market are kept from so doing by the item of expense. This, however, need not be prohibitive, since in the hothouse business a small start is usually essential to success. It is to be questioned whether, without experience, one may advantageously make a beginning with a forcing house larger than 20x50 feet. As in the poultry business, it is safer to expand one's operations as one gains experience.

A hothouse of this size can be had for about \$400. This will include the cost of foundation, labor, and so on. One who has gone into this matter very carefully told the writer that it is better to purchase such a house all ready for erection than to have it built to one's own specifications and by such labor as may be available. He has found that it will cost less in the long run and that one will have a house which will give longer service. The reason for this is that a structure of this kind demands so much work of a special nature and so many odd sizes in all the fittings, pipings, braces and other materials, that it is a saving of time, trouble—and consequently expense—to have the complete building delivered at one's door all ready for putting together.

A hothouse, 20x50 feet in size, will

Peach Scab.


What are the black spots about the size of a pin head that we find on our peaches frequently, and what can we do to prevent them another year?

SUBSCRIBER.

The black spots referred to are very likely the peach spot, or peach scab, which can in a way be likened to the scab of the apple. Like that disease it is a fungous trouble and the causes for its development are similar. Damp, hot, murky weather, and any condition involving dampness and heat, are favorable to the development of all fungous troubles.

The scab on the peach, of course, detracts from the appearance of the fruit and hurts its sale on the regular market. Often when fruit is not good enough for such sale, growers seek the canning factories as an outlet for their fruit. However, scabby fruit for this purpose is entirely out of the question. The canners use a chemical process for peeling the peaches, which works very well except on the scab spots. It apparently has no effect on these spots and therefore the canners are particular about getting fruit free from scab.

This scab can be controlled by spraying with self-boiled lime-sulphur. This spray is made by slaking eight pounds of lime and adding eight pounds of sulphur to the lime while it is slaking. Enough water, of course,



Cabbage Worms Destroyed by Dusting with Hammond's Slug Shot

So used for 30 years. SOLD BY ALL SEED DEALERS.

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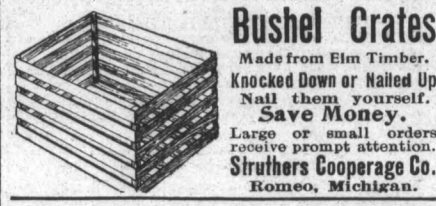
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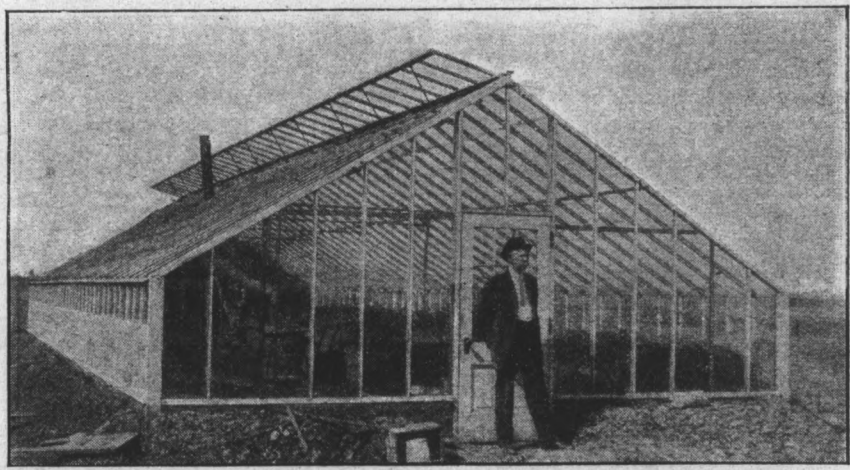
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Forcing House, 20x50 Feet, has Capacity for 5,000 Tomato Plants.

grow enough plants to keep the novice busy. Five thousand tomato plants can be raised without crowding. Tomato seed sown in the latter part of February will produce plants bearing small tomatoes ready to be set out from the tenth to the middle of May. Ripe tomatoes may be marketed by June 20. Early cabbage and cauliflower are both good forcing crops, but the beginner will probably get larger returns from tomatoes.

A common practice is to grow a crop of cucumbers in the hothouse immediately following the removal of the tomato plants. This is a "velvet" crop, costing practically nothing to raise. The vines are trained on trellises and a large crop matures under the ideal conditions of heat and moisture provided under glass. It is usually figured that four or five crops of cucumbers will pay for a hothouse.

One season's experience with a small forcing house will give one more information than he can absorb from all the books ever written. The second season, with a ready-built house, it is a comparatively easy matter to extend one's structure and consequently one's field of operations. Being of standard proportions the manufacturer can supply such extensions in any amount from 25 to 500 feet. The greenhouse business need not require extraordinary expense if one is content to grow with one's experience.
O. E. CROOKER, Illinois.

should be added to keep the lime from burning and as soon as the lime is through slaking more water should be added to cool the mixture. The above amount is enough for 50 gallons of spray. It should be strained before it is put into the spray tank.

This mixture should be applied about two weeks after the shucks have dropped, and again one month before the fruit ripens.

Cutting Back Raspberries.

We have some rapidly growing raspberries that were set in the spring of 1914. We have removed last year's growth and headed back this year's growth by removing the tips of the main shoots, but the lateral shoots are now growing abnormally. Would it be advisable, at this season of the year, to remove the tips of these also?
SUBSCRIBER.

It would not be advisable to prune back the laterals on the raspberries at this time of the year, as such pruning might cause new growth which would not mature before the winter set in. It would be advisable to leave them until spring when they should be cut back about a foot in length.

Everything should be done to check this season's growth. If the patch is now in cultivation the cultivation should cease immediately and the weeds or a crop of rye or similar crop, be allowed to grow. Fertilizers, of course, should also be withheld. Your soil is undoubtedly quite rich for a raspberry plantation.

Live Stock.

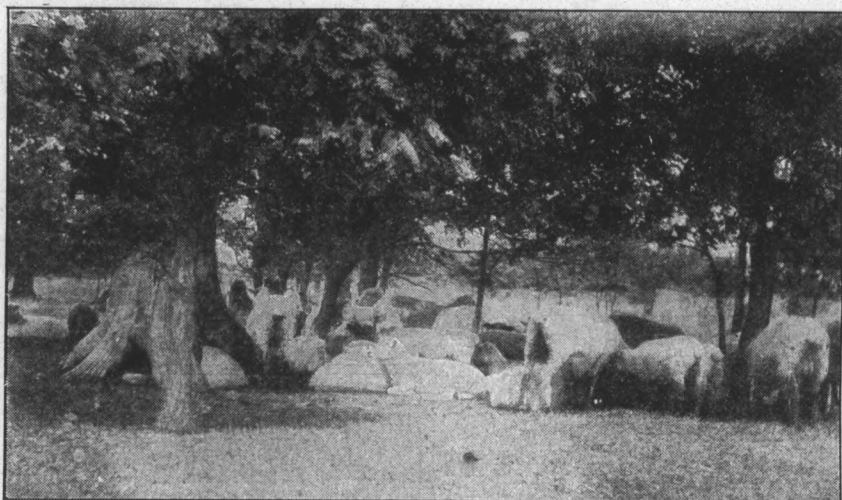
ALTERNATING THE SHEEP PASTURE.

Frequent alternation of pasture is not only advantageous in promoting the thrift of the flock, but highly advisable in sustaining the health of its individual members. Sheep thrive better when allowed access to a wide range of diet and a frequent change of pasture during the hot summer months has an economic value too great to be overlooked. Parasitic infection of pastures has become prevalent on practically every farm where sheep are maintained, and unless wise precaution is exercised to control this condition, serious loss is sure to result. This evil of the sheep industry has become common in the last few years and flock owners must employ precautionary measures to safeguard attack.

These parasites, because of their obscure means of reproduction, infest pastures and make rapid headway before the flock owner becomes aware of the infestation. Wet seasons, (like the present), and low marshy pasture lands are favorable to the parasites. Pastures that have been grazed for two or more years are most likely to

ow pasture requires some precautionary measures or greater injury and loss than gain may result. Sheep generally during the early summer season become accustomed to scant slow-growing pasture. The change from this kind of pasture to quick-growing forage such as second growth clover, is quite likely to cause digestive disorder both among the old sheep and lambs. Trouble of this nature is hard to overcome and care should be taken from the start to prevent it. Some very palatable and nutritious pasture can be obtained for the flock by turning onto stubble land after the grain crops have been removed. Of course, a very large portion of the green growth is weeds, but some grass always comes in, and besides, the fence corners may be relied upon to furnish some splendid feed.

Three things can be accomplished by frequently alternating the flock from one field to another. First, the change of pasture stimulates appetite and promotes physical recuperation; second, it assists in the utilization of waste about the farm and converts it into profit, and third, the sheep are afforded opportunity to use their natural ability to clean up the farm of



Shade is an Appreciated Comfort to the Occupants of the Sheep Pasture.

become infested, and give untold trouble during a season of abundant rainfall and when the atmosphere is damp. Flock owners are frequently misled in thinking that rapid growing, luxuriant pasture is less likely to infestation and continue to pasture when conditions are most favorable for the development of the parasites.

When members of the flock begin to fall away in flesh, become weak and debilitated, show a depraved appetite and a craving for dirt and litter, it may safely be assumed that a change of pasture is necessary. As a rule, sheep that have gone too long and become weakened to such an extent that they have lost their appetite are beyond medical assistance. Such animals should be destroyed immediately. The flock should be removed from the pasture and the land plowed and cultivated. Permanent pasture for sheep is a dangerous and unprofitable method of handling the flock. Lambs are much more likely to become infested with pasture parasites than older sheep, although aged animals are capable of carrying the parasites for some time without becoming noticeably debilitated and in the meantime transmit the infection to the lambs.

Alternating the flock frequently from one pasture to another is an effectual and convenient method of partially controlling pasture parasites during the hot weather months. After the hay crop has been removed and the meadow allowed a little time to recuperate, excellent pasture can be obtained from this source if pastured judiciously. Turning onto new mead-

harmful vegetation. There is nothing that adds more to the appearance of a farm than clean well-kept fields and fence corners.

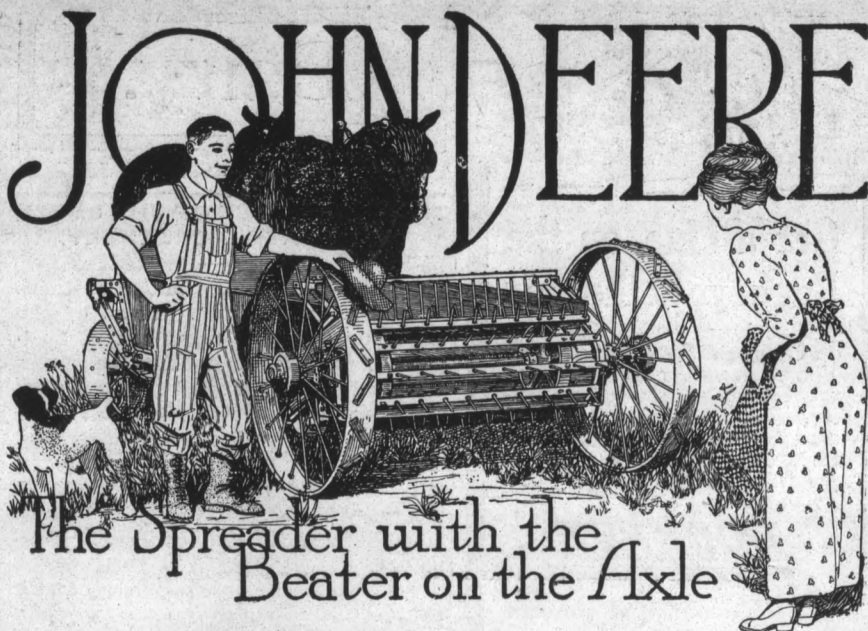
Shiawassee Co. L. C. REYNOLDS.

FEEDERS' PROBLEMS.

Fall Sown Forage Crops for Next Year's Pasture.

We have a ten-acre field of wheat; six acres is seeded to clover. What can we sow on the remainder of the field to make good pasture next summer? We wish to pasture the whole field at once. The soil is on the light order.

Kent Co. C. J. S.
There is nothing better to sow in the fall for spring and summer pasture than rye and winter vetch. There is some objection to the use of winter vetch for this purpose, provided it is sown on quite strong land on which wheat is made a factor in the crop rotation, as it is likely to re-seed to some extent and a volunteer crop may appear in the wheat, which is objectionable, as the seed is difficult to separate without special devices for the purpose. In the event that it is thought undesirable to sow vetch for this reason, then rye could be sown and a liberal seeding of timothy made with the rye. Some alsike clover might also be sown, although this or other clovers can be sown in the spring and with only ordinarily close pasturing will ordinarily make a fairly good stand. On light soil, such as is described, however, the winter vetch would be a good addition from the standpoint of producing good pasture next season.



HERE'S the low down spreader with the big drive wheels. The beater and all driving parts are on the rear axle. That means no clutches to give trouble, no chains to break or to get out of line; it means less than half the parts heretofore used on the simplest spreader.

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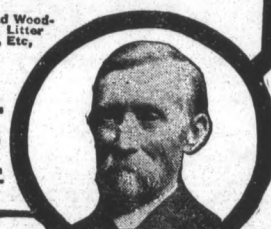
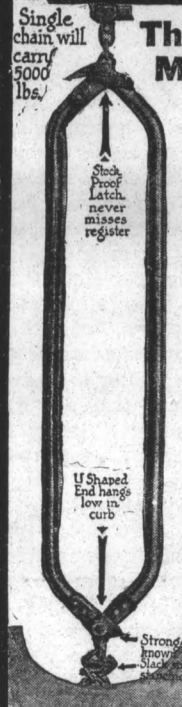
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Sanitary Construction—No cracks or crevices to catch dirt and breed bacteria. Fitted throughout with overlapping, dust-proof malleable iron construction.
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The Louden Line Includes Steel Stalls, Tubular Steel and Wood-Lined Stanchions, Food and Litter Carriers, Barn Door Hangers, Hay Tools, Power Hoists, Etc., Etc.

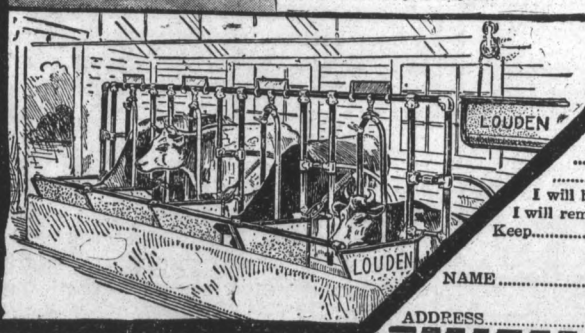
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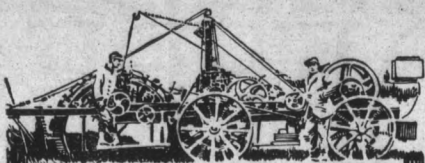
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WHOLESALE FEED Save your money. Ask for price list. Everything in Feed. THE BARTLETT CO., 100 Mill St., Jackson, Mich.

Dairy.

CONDUCTED BY COLON C. LILLIE.

THE IMPORTANCE OF THE SMALL CO-OPERATIVE CREAMERY.

The condition of the butter business is gradually changing. Some of the big companies are going out of business as producers and are becoming wholesale purchasers of the output of small creameries, many of which are farmers' co-operative creameries. The big producing creameries are going out of business because of the high prices paid for milk by distributors in cities, and by the condensing companies.

The wholesale summer price of milk in and near cities ranges between \$1.45 and \$1.65 per hundred pounds, and the winter price is between \$1.80 and \$1.90, while the butter-fat from a hundred pounds of milk sold to a creamery brings in the neighborhood of \$1.33 to \$1.35. Therefore it does not pay to make butter in cities and other localities where farmers are getting \$1.90 per hundred for milk. And the business of buying milk at wholesale by big city distributing companies has been so systematized and perfected, and the milk is so thoroughly cooled before it starts for the city that the territory for purchasing milk has been extended until it pays city distributors to buy milk from farmers 75 and 100 miles away and ship it to the city, either in crated bottles or ten-gallon cans.

The High Price of Butter.

It is therefore no wonder that some large commercial creameries are gradually going out of business as manufacturers of butter because they cannot get milk at a price which will allow them to make butter at a profit. Neither is it strange that the price of butter is high, especially during the winter season. The big creameries continue in the business of selling butter, however, by buying up the product of small creameries, packing it and selling it under brands which they have made popular with the public.

It is here that the small co-operative creamery serves a very good purpose, for by continuing in business in small towns remote from large cities, and sometimes even near these cities, they keep the price of butter from becoming exorbitant, and they enable themselves to buy butter from their own creamery much cheaper than the public gets it. They also stimulate the breeding of fine cattle, also the hog business and the poultry business by having for sale or enabling the surrounding farmers to have for sale, or for their own use so much skim-milk for feeding to the calves, pigs and chickens.

The Small Creamery a Benefit.

Therefore, when an association of farmers establishes a co-operative creamery they are doing something which benefits a great many people—themselves, the public, the breeders of fine stock, the hog man, the poultryman, and even the dairy farmer who sells milk to the distributors. They are preventing the slaughter of calves, because they make it cheaper and easier for dairymen and other stockmen to raise calves. They help dairymen also, because when a greater number of heifer calves are allowed to live, milk cows become cheaper. The price of milk and butter will thus be guaranteed against sudden and abnormal boosts. It is difficult to imagine how high the price of butter might soar during winter seasons were it not for farmers' co-operative creameries and other small creameries in dairy districts at a distance from the great cities and other wholesale markets for milk.

The small creamery benefits farm-

ere by enabling them to purchase good butter cheaply from their own creameries—better butter than they could make by churning at home. The saving in this way alone is considerable, where a farmer has a large family, all of whom like good butter. It saves the farmer's wife and her daughters from the trouble of butter making at home. The price of this butter to the farmer who owns shares in the creamery is in the neighborhood of 25 cents a pound, while the same butter sells to the trade at from 30 to 38 cents, depending on the season.

Advantages of a Local Creamery.

The small association creameries tend to equalize conditions in a number of ways, so even though the butter-fat doesn't yield as large a profit when sold to creameries as the milk does when sold to city distributors, the value of the by-products of the creamery balances the lower price of butter-fat, and justifies a farmer in selling butter-fat to his co-operative creamery anyway. He has the skim-milk from his separator for the calves and he can get all the buttermilk he wants at the creamery for his pigs and chickens, at a nominal price.

It is therefore fortunate for many classes of people and for different industries that milk distributors and condensing companies do not have a monopoly of the milk trade and force out of business the small creameries. Even near cities the establishment of small co-operative creameries should have a salutary effect on industrial conditions. A condition of keen competition is a desirable one. If dairy farmers sell all their milk to distributors and condensing companies and drive the creameries out of business, they are thereby stifling competition and raising the price of butter. After this competition is destroyed, and distributors and condensers have nothing to fear in the way of competition from creameries they might reduce the prices they are now paying for milk at wholesale, and dairy farmers would have no recourse against such a combination. The co-operative creamery is therefore, the dairy farmer's friend, even though he doesn't patronize it or hold stock in it.

Small Creameries Make Calf Raising Profitable.

Speaking broadly, the more small creameries we have the better will be the wholesale price of milk paid by distributors and condensers. Also the price of butter will be kept down to a reasonable figure, the scare about the abnormally high price of beef will subside, and likewise the cry about the slaughter of calves, for it will pay a farmer with plenty of skim-milk and a good pasture to raise every promising grade heifer calf, not to mention the pure-breds. And when two years old they will sell at a good price to farmers who sell milk at wholesale, but who cannot afford to raise calves themselves. There are thousands of dairy farmers with whom it is far cheaper to buy good two-year-old heifers than to raise their own heifer calves.

Missouri. I. H. MOTES.

THE COW'S VACATION.

How long a vacation should the cow have? It depends something on the cow herself. She, like some people, can sometimes get along with a short vacation and keep in vigorous working condition. It always depends on how she is kept. If fed liberally, and well cared for, she can give milk almost continuously without loss of vigor. These things should be duly considered in each instance. Usually, however, it pays to allow, or even compel, a cow to take six weeks to two months vacation each year. That is, she should go dry for that time, to store up enough reserve to do her best for the balance of the year. She will almost invariably have a more vigorous calf if given a good rest.

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In breaking a heifer, or milking a kicking cow, I never strike, or kick her, or use any violence except to milk her in spite of all she can do to prevent it. The principle is the same made use of by John S. Rarey, Gleason, and other noted horse trainers. In single-handed contests, the animal is made to exhaust its strength in a futile endeavor to become master, and will always yield when conquered by the superior power and intelligence of man.

Use Determination.

To break a kicking heifer with her first calf, I put her into a stall and tie her head up short to the manger, so that she cannot back out, nor surge ahead, and give her some dry meal to eat in order to put her into an amiable state of mind. But this will not prevent her from kicking if she don't want to be milked. I do not place the pail directly under her bag. I put an old cap on my head, stand on my feet, bent over to milk, place my head in the heifer's groin, and take a firm hold of the hind teat on the heifer's right side, with my left hand, and the front fore teat with my right. When she tries to kick, I brace my feet, and stiffen my neck, and back, and hold on to the teats with a bull dog's grip. The left hand is the one she tries to get loose, as it is the one that prevents her from hitting the pail which seems to be her particular object of spite. Standing on my feet, I can vary my position as she varies hers, and if my hold is maintained, she can kick but little, and cannot hit me nor the pail. I do not try to draw any milk while the struggle lasts. I only tighten my grip and maintain my hold.

The length of the struggle depends on the disposition of the heifer. Some, more stubborn than others, will make several fierce fights for the mastery at the first milking, and repeat them with less violence at the second. When she finds that I am master of the situation, and can "hold the fort," that I don't want to hurt her, that I do want the milk, and am determined to have it whether she is willing or not, she gives up the battle and there is no more trouble. I have never known a heifer to injure her teats by my holding on to them while she was kicking.

Old Cows Hard to Conquer.

Gentle old cows will sometimes kick when they have cracked teats that hurt when milked, and they must be milked forcibly. Our best, and gentlest cow, cut one of her teats badly in getting over a barbed wire fence, where a tree had been blown down across it. As she was in full flow of milk the teat had to be milked. It was very sore and she would not allow it to be touched, and when I took hold of it she kicked furiously. I had to milk that teat by force. She fought harder than heifers, but when she gave up, and allowed the teat to be squeezed, she trembled, and quivered with pain, and exhaustion. I never had a heifer, or cow, that I could not milk by force, and when broken they staid broken.

Pennsylvania. J. W. INGHAM.

CHILDREN AS MILKERS.

My judgment is, that milking is a man's job. At least it is a woman's job, and not a job for a young boy or girl. Children can not do the job properly. It is a physical impossibility. They are not strong enough. Besides the actual lack of strength, boys and girls are careless and irresponsible. It always has been so and always will be. Children can not, from the very nature of things, assume responsibility and for them to be given

the great responsibility of milking is asking too much of them. It is not business, it is folly.

The father who will allow, or compel, his children under 15 years of age to do any considerable part of the milking, is making a mistake. He is sure to lose money. He hasn't a proper conception of the importance of the job of milking cows. A cow should be milked rapidly and thoroughly, and every time just alike, and at the same time proper manipulation of the udder should be given. If one does not understand these things, or if he can't or don't do it, then he can not be a success as a milker. Children can not understand these things, and they are prone to be careless.

Children Not Good Milkers.

I have personally observed instances where the children were compelled to do the larger part of the milking. Almost invariably the father was a poor dairyman and also a poor milker himself. A father who has carefully observed that good milking gives better results and is a good milker himself, knows well enough that children cannot do this work properly. It is not out of place to have the boy milk the easy milking cows, or perhaps the girl try her hand, as this teaches them to milk, and we must all be taught. I am not arguing against such things. The cow the boy milks, we do not expect will do her best, but the boy must learn, and when he becomes mature enough and has sufficient strength, and last, but not least, when he has sufficient judgment, then responsibility of milking can be gradually placed upon him. But never should this be done until he has sufficient strength to do the job right. It is a job that won't stand but mighty little carelessness, if you want the cows to do their best.

THE WEST MICHIGAN HOLSTEIN BREEDERS HOLD ANNUAL PICNIC.

The Fourth Annual Picnic of the West Michigan Holstein Breeders' Association was held in John Ball Park, in the city of Grand Rapids, on Wednesday, August 5. The day was an ideal one for a picnic in this beautiful park, and after the breeders and their families had enjoyed a social hour in visiting, the lunch baskets were brought forward and the table spread with numerous good things to eat.

After the dinner was over with, seats were arranged in a shady place in the grove, and the meeting was called to order by President Arthur Clark. Hon. D. D. Aitken, of Flint, President of the Holstein-Friesian Association of America, was the first speaker introduced. Mr. Aitken gave a very interesting talk on "The Age of Progress in Holstein Development." He spoke at length on efficiency in methods on the farm in reducing the cost of operation. He advocated buying a few well-bred Holsteins and thus starting herds of registered cattle. He stated that if the female increase were all kept for ten years, that the herd would have a greater cash value than a good farm.

Hon. N. P. Hull, of Diamondale, former master of the Michigan State Grange, and at present secretary of the National Dairy Union, then gave a most excellent talk on "Future Prospects for Dairying with the Holstein Cow." He spoke of the necessity of keeping a herd of profitable milk and butter producers, and outlined the work of the National Dairy Union in fighting the dishonest manufacture and sale of oleomargarine, colored to represent good dairy butter. He stated that oleomargarine colored to represent butter could be manufactured at a cost of from nine to 14 cents per pound.

George H. Brownell, of Detroit, closed the program with a few well chosen remarks, after which the meeting was adjourned. W. R. HARPER, Secretary.



At the Fair This Year

WHEN the inviting shade of the big SHARPLES tent beckons you inside, slip into the welcome arm of a big, comfy chair in a cool corner—and while you rest your tired feet, watch the SHARPLES MILKER milk your neighbor's cows.

Smoke if you want to—the ladies don't mind. Relax and get all the good out of your little recreation trip. Feel that this big exhibit is *your* show—because we have gone to a lot of trouble to make these exhibits both interesting and instructive—but, after all, comfort is the thing which intensifies all our pleasures.

If you are interested in dairying—and every one is nowadays—here you will find food for thought. Cows strange to the machine will be milked at regular intervals. Here you will learn, in a few minutes, why the SHARPLES MILKER is now milking a quarter million cows. You can see the reason for its remarkable success instantly. Better still, you can talk with farmers and dealers who have shared in the upbuilding of that success—undisturbed.

The things a man finds out for himself are the ones most worth while to him. People learn—they are not taught nowadays. Farmers have a way of doing their own thinking. And if an article does not possess merit you cannot make them believe that it does. And, on the other hand, if it does possess that merit, you can't keep them from finding it out. We investigate and "buy" things in this progressive age. Farm implements are no longer "sold."

Every member of the family is interested in the MILKER, it seems. And it is right that they should be; because if a man can use a MILKER and it will do him good, the sooner he knows about it the better. We cannot put off the inevitable—and why, then, should we try? If a man can't use a MILKER it won't hurt him to know about it, because it is a big, new idea. But if he can use it, now or any time, why deny himself so good an opportunity of seeing it?

Clarifiers will be shown, too, and gasoline engines. And Separators, Whey Machines, and much else which interests the dairy fraternity.

Something Happens Every Minute at the Sharples Milker Show.

It's really interesting! You will be delighted with your visit—so will we.

Fairs and Expositions—1914

Name	Location	Date
California State Fair.....	Sacramento, Cal.....	Sept. 12-19
Connecticut State Fair.....	Hartford, Conn.....	Sept. 7-11
Illinois State Fair.....	Springfield, Ill.....	Sept. 18-26
Indiana State Fair.....	Indianapolis, Ind.....	Sept. 7-11
Iowa State Fair and Exposition.....	Des Moines, Ia.....	Aug. 26-Sept. 3
Kansas State Fair.....	Hutchinson, Kans.....	Sept. 12-19
Michigan State Fair.....	Detroit, Mich.....	Sept. 7-18
Minnesota State Fair and Exposition.....	Hamline, Minn.....	Sept. 7-12
Missouri State Fair.....	Sedalia, Mo.....	Sept. 26-Oct. 2
Nebraska State Fair.....	Lincoln, Nebr.....	Sept. 7-11
New York State Fair.....	Syracuse, N. Y.....	Aug. 31-Sept. 5
Ohio State Fair.....	Columbus, O.....	Aug. 31-Sept. 4
Oregon State Fair.....	Salem, Ore.....	Sept. 28-Oct. 3
The Allentown Fair.....	Allentown, Pa.....	Sept. 22-25
Tennessee State Fair.....	Nashville, Tenn.....	Sept. 21-26
Utah State Fair.....	Salt Lake City, Utah.....	Oct. 5-10
Vermont State Fair.....	White River Junction, Vt.....	Sept. 15-18
Virginia State Fair.....	Richmond, Va.....	Oct. 5-10
Wisconsin State Fair.....	Milwaukee, Wis.....	Sept. 14-18
Interstate Live Stock Fair.....	Sioux City, Ia.....	Sept. 21-26
New Jersey-Penna. Interstate Fair.....	Trenton, N. J.....	Sept. 28-Oct. 2
Spokane Interstate Fair.....	Spokane, Wash.....	Sept. 12-20
Pacific International Live Stock.....	Portland, Ore.....	Dec. 7-12
Dairy Cattle Congress.....	Waterloo, Ia.....	Oct. 12-18
National Dairy Show.....	Chicago, Ill.....	Oct. 22-31
Maine State Fair.....	Waterville, Me.....	Sept. 1-4
New Hampshire State Fair.....	Salem, N. H.....	Sept. 1-5
Rochester Industrial Exposition.....	Rochester, N. Y.....	Sept. 7-19
Maryland Interstate Fair.....	Hagerstown, Md.....	Oct. 13-16

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AGENCIES EVERYWHERE

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DETROIT, SEPT. 5, 1914.

A FEW LEADING ARTICLES OF THE WEEK.

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CURRENT COMMENT.

War and Its Echoes. This week marked the passing of another encampment of the Grand Army of the Republic, which was held at Detroit, with appropriate ceremony. This event is but an echo of the struggle which rent our land in the early sixties. Time has softened, if not effaced, the tragedies of that struggle and the thought of the hour was to fittingly honor the old soldiers, whose ranks are annually being thinned more rapidly by an enemy which cannot be vanquished.

Upon these occasions old comrades of the battlefield and, sadder still, of the military prison, are wont to recount the experiences of their soldier days and live again the thrilling hours of their triumph over a worthy foe. And last year, when their reunion was held on the historic field of Gettysburg, the foes of yore met as brothers on the scene of a memorable conflict. These are but echoes of war which each year grow more faint and less fraught with recollection, much less realization, of its horrors.

But this year, while our time-worn veterans were the honored guests of our state's metropolis, the sterner side of war was more than a shadow, due to the conflict of enlightened people's which was raging in all its fury on

the other side of the Atlantic. Long will it be before the tragedies of that conflict will have become but echoes of but annual recurrence in the lands that are sacrificing the flower of their manhood in this combat—and for what? If for great principles of vital interest to humanity at large it still remains for history to reveal the issue. If for no more worthy cause than to satisfy the ambitions of military governments and their despotic heads, then, too, must we wait for history, written in the life-blood of loyal, but peace-loving common people to reveal.

In the meantime we can but hope that when the tragedies of this mortal combat are become less terrible to contemplate through the softening influence of time, and when its memories are but echoes of other days, such as those of our own great war, which reach us through these gatherings of its remaining veterans, the world may have progressed in civilization to a point where even vital issues which involve sacred principles may be peacefully adjusted and a condition which will make it impossible to provoke human conflict in its sternest form for any less worthy cause. Only then can war, which Sherman so fittingly described as "Hell," send forth even the faintest echoes which savor of Heaven.

The fair season is at hand. The State Fair for 1914 will open its gates on Monday next, September 7, and will continue to and including September 18, which will give every person in Michigan who can arrange at all to attend this exposition, an opportunity to do so with a minimum of personal or business inconvenience.

There are very many reasons why the people of Michigan generally, and progressive farmers in particular, should attend Michigan's greatest fair. Too many people look upon agricultural fairs in general, and the State Fair in particular, simply as an opportunity to have a pleasant outing and a good time. While it does afford such an opportunity, there are other and greater reasons why every farmer who can possibly do so should attend the State Fair and take his family with him. Perhaps the most potent reason for such attendance lies in the opportunity which is offered to study breeds and types of live stock in this great section of the fair. The finest horses, cattle, sheep, swine and poultry which are produced in Michigan, and many of the best herds and flocks of the country will compete in the show rings of the various departments, thus giving the fair patron an opportunity to study the highest types of the various improved breeds at close range, and also get the viewpoint of judges who are well equipped by training and experience to award the honors where honors are due. Some live stock must be kept on every farm, and there is great opportunity for improvement in the type of live stock kept upon the average farm, hence the importance of Michigan farmers in general giving close attention to this department of the State Fair where better opportunities are offered for study and observation of the best of our pure-bred live stock than in any other place so easily and cheaply accessible. In like manner the products of the vegetable kingdom may be studied in the various fruit, vegetable and grain exhibits, and much information of value to any farmer can thus be derived.

Also a careful study of the machinery and implements on exhibit, many of them in actual operation, will be most beneficial and helpful to any farmer in making wise selections of needed additional equipment for the operation of his farm. Various other educational exhibits are of scarcely less importance; for instance, the great automobile show will afford the farmers who are contemplating the

purchase of autos an opportunity to study the different makes and models where direct comparison can be made. This show promises to be an even greater factor than at previous fairs, some thirty lines of automobiles and motor trucks, all made in or around Detroit, having been awarded exhibition space in the large automobile building.

Not the least important among the educational exhibits will be the milk tests for dairy cows, which will be conducted under the auspices of the fair, while the babies' health contest should be of vital interest to a very large number of fair patrons, and other educational exhibits made by the Agricultural College and the various state departments will be worthy of the most careful study. All of these things make the State Fair in fact what it is in name, an exposition of such value to Michigan farmers that none who can arrange to attend can afford to stay away.

In addition, there are the usual number of entertainment features, all of a high character of excellence. These include daily aeroplane flights by an aviator who does the modern thrilling stunts, an excellent racing program, which will include high-class automobile races, fine free musical programs, and other entertainment features of a high order, together with a high-class horse show and fireworks each evening.

There is no question but that the State Fair will offer entertainment features which alone would make it an object for any member of a farm family to attend, yet these should be considered secondary to the educational features, and incidental to the main object of acquiring up-to-date knowledge of many things which are important factors in success upon the farm.

Where Diversity is Profitable.

The diversity of Michigan agriculture is often a matter for congratulation. In some seasons there may be a serious failure of one crop, which is a serious matter in a one-crop section of the country, but such a crop failure is felt much less in a state like Michigan where a variety of crops are grown on nearly every farm. Then there may be an over production along some one line which will tend to reduce prices to a point which leaves little profit to the grower. But in a state like Michigan, this is not so badly felt, because nearly every farmer has a considerable variety of products to sell and may do very well even though one product may sell abnormally low.

Then, too, it is a decided advantage to have a choice of crops which may be grown with almost equal facility, as the acreage of any crop which seems to promise exceptional profits may often be increased without seriously disturbing the crop rotation. Just now the state millers' association is urging Michigan farmers to grow a larger acreage of wheat and issuing some good advice with regard to the methods of growing, such as the selection of a wheat of good milling quality (a long berried red variety is advised), treating the seed for smut, fitting the ground carefully and delaying seeding until about September 20 to avoid damage from the Hessian fly. Undoubtedly the area of wheat grown in Michigan could be increased with profit under present conditions, as the European nations now engaged in war will require even larger quantities of the grain than would be the case under normal conditions, while their production will be far less. Likewise, other staple Michigan crops, such as beans and potatoes, will be free from foreign competition under present conditions, and there is every prospect that the diversity of our agriculture will demonstrate its advantages to an even greater degree than is common during the coming year.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—During the past week the activities of the belligerent nations have been confined more closely to restricted districts. On land the fighting has been largely confined to the attempt of the Germans to swing around through Belgium and enter France from the north and northwest, and to the effort of the Russians to advance into Prussia and Austria. At sea the English war vessels engaged the German ships off the German shore and the Japanese have moved against the German Chinese port, Kiauchau. Thus far the campaign of the Kaiser's troops in France is reported successful. The German right wing has forced the left wing of the allies back beyond Aimeins, which is within 60 miles of Paris. The attempts of the German forces to cross the Meuse river to the northwest of Paris has not met with success thus far and the French are pushing the campaign hard at that point with the hopes of compelling the Germans to withdraw some of their troops from the right. The Russians have advanced well into Prussia, the eastern province of Germany, and made considerable headway against the Austrians in the province of Galacia, where they are now maneuvering to take Lemberg, an important position. Serbia is expecting to enter Austria and take the offensive, having successfully defeated every attempt of the Austrian soldiers to establish themselves on the south side of the Danube. It is reported that Bosnia will join with Serbia in this campaign. Italy still maintains her neutrality but she has sent an ultimatum to Austria, demanding explanation of the mobilization of troops on the Italian border, which, with the report that Turkey is preparing to enter the conflict, makes it very probable that Italy will soon be included in the list of belligerent nations. In the naval battle off the German coast 11 German ships are said to have been sunk or destroyed. The English ships were not badly damaged and she lost 29 killed and 38 wounded.

Peace seems now to be assured in Mexico. Gen. Zapata, the guerilla leader of the southwestern provinces of the country, has joined with other leaders to bring about a settlement of differences between the several factions. There is also an agreement between the feuds led by Governor Maytorena and Cornel Calles in the state of Sonora. With these difficulties overcome, rapid strides should be made to get the country reorganized and started on the road to peace and prosperity once more.

The national encampment of the Grand Army of the Republic meets in Detroit this week. It is estimated that between 20,000 and 40,000 of the soldiers who wore the blue back in the sixties, are present to participate in the exercises. The program continues throughout the week and includes the sessions of many auxiliary societies connected with the G. A. R.

National.

The wireless stations of the Panama Canal zone have been taken over by the federal government, that a stricter control over the transmission of messages during hostilities in Europe may be maintained.

It is positively declared that the announcement of the department of justice that the beet sugar business in one of the states would be the subject of a prosecution by the federal government, does not refer to Michigan. The evidence of an unwarranted and illegal advancement of prices on sugar by beet sugar men was gathered in a west central state.

An effort is being made by the post office department to bring the farmers of the country into closer touch with the consumers by means of the parcel post service. The plan is the continuation of the scheme started some time ago, of getting the names of producers into the hands of the consumers, and vice versa. Through this means the department may do much to threaten the existence of the alleged city food trusts of many of the larger cities.

Camp Ferris, the 1914 encampment of Michigan's militia at Grayling, was broken Sunday and the troops have returned home. The work of the men this year was such as to give a broad study of military duty and practice.

The first ballot is taken Tuesday for the selection of a new pope to succeed Pope Pius X, as head of the Roman Catholic Church. The election is held in the vatican, Rome, Italy.

President Wilson is resting at his summer cottage at Windsor, Vt.

Fire wiped out the Mio, Oscoda county, mercantile block on Sunday morning, entailing an estimated loss of \$40,000.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

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

Institutes for our Farm Boys and Girls

Our Present Educational System—Its Deficiencies—The Result—What Can Be Done to Relieve It—A Task for the Community and the State—By Earl W. Gage.

WE have been holding farmers' institutes for the farmer and his wife for a great many years. It now becomes important that we consider the welfare of the young people who spend their early life upon the old farm.

If these young people are members of a live institute, become interested in the various phases of farm life and work, the opportunity is very ripe for their remaining upon the farm and be-

ter the value and practicability of this new feature in education had been demonstrated by the towns and cities, some rural school authorities became interested and a few of the more progressive introduced it into their course of studies.

The rural school began its work of agricultural instruction by directing the scholars' attention to some of the simplest and more common nature study subjects in the neighborhood of

that the teacher of the single-room school, even though capable in this new line of study, has not the time necessary in which to give the instruction unless vacation and holiday periods are utilized for the purpose, and the vast majority of rural school districts are not financially able to support an additional teacher. The consolidated rural school, however, promises to overcome some of the chief difficulties that have heretofore hindered the development of this work, and is now opening the way for instructing the scholars along agricultural subjects, and the day of newness and usefulness is dawning for the country school as a result.

The purpose in this movement by the elementary schools, so far as it has definite aim, is to awaken in boys and girls an interest in farming and domestic operations by bringing them to see and appreciate the beauty, independence, and general desirability of rural life. By the proper study of these various subjects mental culture can also be secured as effectively as by the exclusive use of the so-called disciplinary studies, while at the same time a broader view and better appreciation of life is imparted to the pupil.

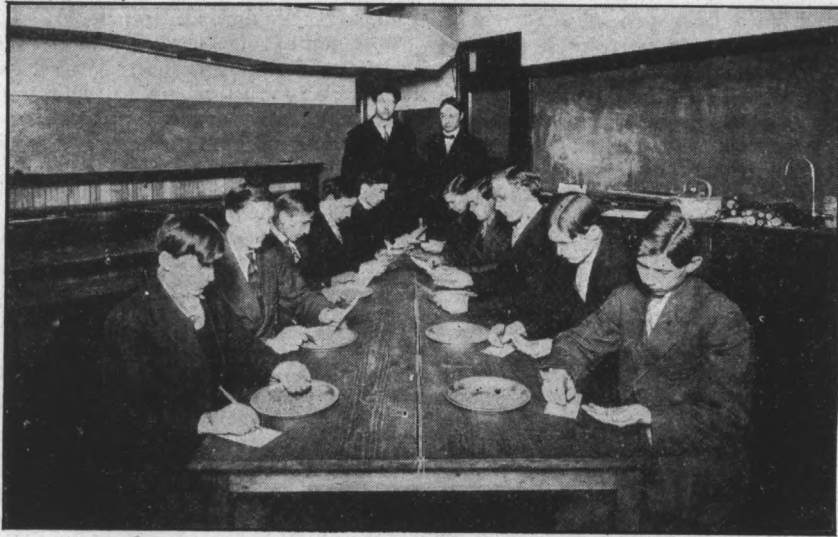
As a part of the course in education for children of public school age, a system of "clubs" has been organized in many sections by rural teachers and county superintendents of schools, intended to interest the pupils in country life and at the same time prove of actual service in preparing them for their future work, whether that work be on a farm or in some other occupation or profession. The club is usually composed, both as to membership and officers in immediate charge of the work, of children in the public schools. The organiza-

practically limits it to children under 14 or 15 years of age; and the agricultural training during this period, whether in class or through the agricultural clubs, is of necessity restricted to such instruction as the teacher in charge of the school can find time to give outside of the many other duties the curriculum requires.

If, as statistics reveal, the education of the country child with few exceptions, ceases with the rural school, it follows that the great body of young people of the country are left without special training that will give them practical knowledge or acquaintance with the business operations of a farm.

In order, therefore, that opportunity to become acquainted with agricultural operations may be given to those who have left the public school and from whose ranks the future farmers and their wives must be supplied, the farmers' institutes in the several states have organized and are today conducting what is known as "institutes for young people on the farm." The majority of these, however, are not as yet institutes in the sense in which the work of the farmers' institute has come to be defined. They are in reality boys' and girls' clubs conducted in the same manner as those organized and operated by the public schools.

That the institutes should have taken up the work for young people along lines similar to those of the schools, is not surprising. The great need among young people beyond the school age for agricultural instruction was so urgent that it could not be longer delayed, consequently the institute undertook, to what extent it could, to supply that need without waiting to make thorough previous



The Boys Test Seeds for the Farmers of the Community.

coming successful in a line of endeavor of which their heritage grants a most promising future.

Out of every 500 young people in the rural districts of our country, only one enters an agricultural college. Only five others enter any type of college. Of every 100 rural and urban children, only five reach the high school, and only six go beyond the elementary grades. Ninety-four out of every 100 children therefore, finish their education for life with the little district school. Inasmuch as these 94 children include those in cities and towns as well as those of the country districts, and since city and town children continue longer in school than do those of the country, it is safe to state that fully 97 out of every 100 rural boys and girls finish their education with the district school.

That we may reach the 499 out of every 500 rural boys and girls who can go to an agricultural college, and yet in whom some attachment for and interest in rural life should be inoculated, there has developed quite generally a demand for the introduction into rural schools of subjects that will serve to educate in the direction of appreciation of rural life and its opportunities. Teaching hitherto confined to studies that ignore the country and direct the scholar's attention to the occupations of the towns and cities, has done much to encourage our farm youth to become mere cogs in a great grinding machine of industrial centers.

The first effort to meet this demand was made by the town and city schools through the introduction of topics which later were all embraced under the term "nature study." Af-

ter the school itself. Gradually this was extended to the critical observation of various phenomena in the growth and development of plants and animals. Later, elementary text-books on these and other general subjects connected with the rural life were introduced and studied.

Among the country schools, however, only the most favorably situated have been able to conduct even ele-



The Scope of the Institute Can be Enlarged to Meet Educational Needs of the Youth of Our Farms.

mentary work along this important line. There are a number of reasons for this. The subject is new in school work with children and the majority of public school teachers are not prepared to give instruction in agriculture and consequently no provision had been made either for qualifying a teaching force for imparting it or for equipping the schools with suitable apparatus.

There is also the further difficulty

tion, however, is subject to general oversight by the teacher in charge of the school. The club activities are mainly in the form of contests in judging grains and animals, with some field work, such as growing corn, potatoes, or similar crops. The field operations are restricted to small areas, and to comparatively few varieties of products. The fact that the work for the most part is confined to young people who are in the rural schools,

study of the conditions or of the methods best adapted to improving these same conditions. It simply started, and then following the lines of least resistance, which have been the methods that were pursued by the schools. It has gone on until now a radical departure from these methods is seen to be necessary and is proposed.

Because of the fundamental difficulty in securing teachers capable of giving vocational instruction in agri-

culture in the rural schools, and from the fact that after the scholars leave school no provision has been made for giving them opportunity to receive such instruction, the farmers' institute in certain sections has undertaken the training in agriculture of rural children after leaving school. In doing this it has found it necessary to drop from its system of instruction the purely educational feature and devote itself strictly to the vocational instruction.

Such studies and practice, therefore, as the institute utilizes, have in view the perfecting of the individual in his vocation. The institute-trade-school methods as intended for youth above 14 years of age, is the system most in vogue. It differs from the work carried on by other agencies employed in training country youth in that its primary object is to build up a better agriculture by teaching young people methods for increasing crops, improving farm animals, restoring worn-out soils, and disposing, in a profitable way, the products of farms in general.

The great object in view, therefore, will be appreciated at once as being to teach the youth how to make money in agriculture. It is endeavoring to do this by giving them information respecting the raising of crops, the breeding and care of animals, and by bringing them to appreciate the value of organization and co-operation in securing enlarged political and commercial advantages as well as better social and intellectual privileges and by teaching them how to secure and use these same advantages. By undertaking this work the farmers' institute will be certain to occupy a field separate and distinct from all others, and one which is not now covered by any other organization. It will become the connecting link be-

tween the agriculture club movement by the schools on the one hand, and the regular farmers' institute for adults on the other.

The method best adapted to giving vocational information is still to a certain degree unknown, yet it is assured when we once discover the local rural conditions and characteristics of rural youth and their relation to country life by careful study and observation. That an effective method should be had is evident to all thinking men. When it will be had will depend solely upon the seriousness with which the whole matter of the vocational training of country youth is regarded by those who are in a position to provide for it.

The very fact that there can be no physical compulsion exerted in bringing those who are to be reached to attend any course of teaching makes it at once necessary that the methods employed for securing their attendance and attention be both attractive and non-resisting. There are at least two characteristics in the rural youth that can be depended upon to respond to proper appeal—ambition and the desire for gain. With respect to the first, young people are naturally interested in a subject or exercise when presented in the form of contest. Their plays for the most part are of this nature. When properly planned and conducted such exercises not only serve to interest young people, but they possess in addition features of great practical educational value. They stimulate the creative faculties of the contestants, teach the relation between cause and effect, develop power and desire to do things, show how to apply knowledge gained from books or school to solving the problems of life, and by keeping the mind occupied with useful purposes they

serve to stimulate to further and more determined effort.

The contest method, therefore, has wisely been adopted by the institute for awakening interest and creating enthusiasm among young people in agricultural operations. In this direction lie great possibilities. To fully realize these possibilities and benefit by them the institute should study to discover additional subjects suitable for competitions, and of value in the improvement of rural affairs. The number of such subjects in use at present is extremely limited, being confined, in crops, almost wholly to corn; in animal husbandry, to stock judging, and in domestic science, to the preparation of a few of the simpler articles of food diet. Exercises of this nature should be extended to other lines of rural activity, and be utilized by the institute for instructing in a much wider range of agricultural operations.

While the farm presents problems most complex and difficult to be thoroughly understood, on the other hand many of its operations are apparently so simple that they seem to require no particular thought or skill for their performance, and consequently come to be regarded as of minor importance when in truth, they are of vital import.

Many of the manual processes are of this character. They are largely matters of practice, or operations repeated until a degree of dexterity is acquired in their performance. The general lack, however, of both knowledge and skill on the part of many of those who engage in these everyday operations is very marked when their performance by an ordinary worker is compared with the rapidity and perfection of their execution by an accomplished expert.

In view of these facts, the institute

offers prizes to young people on the farm for superior skill and proficiency in manual processes, and hold competitive exhibitions at which dexterity and skill are recognized and regarded approvingly. The most general and common manual practices in need of general improvement are the operations of milking, grooming horses, wood chopping, fence building, corn husking, ditching, draining, grain shocking, mowing and stacking, fruit gathering, fruit grading, fruit packing, whitewashing, spraying, pruning, plowing, horseshoeing, sheep shearing, setting up implements, cotton chopping, cooking, baking, canning, preserving, dressmaking, house decorating, papering, millinery, and similar everyday matters, all requiring skill, the exercise of good judgment, and discrimination for their proper performance, while some demand a highly cultivated aesthetic taste.

In more progressive communities, the list of contests also is extended to the preparation of papers and the holding of oral examinations upon subjects requiring wider culture, knowledge, and experience than those mentioned. Such a list embraces farm management, orchard management, landscape gardening, vegetable gardening, flower gardening, practical dairying, preparation of balanced rations for all types of farm animals, as well as papers upon local history, laws, markets and sanitation.

The contest feature of the young people's institute is usually graded so as to be as far as possible a complete and progressive course. When completed a certificate is given to the contestant stating the work performed by the contestant during the period in which he or she was a member of the institute. The course begins with

(Continued on page 193).

CHAPTER I.—(Continued).

HE was, however, a humane man, and considerate of the beasts that worked for him, and accordingly thrust his hand inside the old fur coat when he had loosed the uninjured horse, and drew out a long-bladed knife. Then he knelt, and setting down the lantern, felt for the place to strike. When he found it his courage almost deserted him, and meeting the eyes that seemed to look up at him with dumb appeal, turned his head away. Still, he was a man who would not shirk a painful duty, and shaking off the sense of revulsion turned again and stroked the beasts' head.

"It's all I can do for you," he said.

Then his arm came down and a tremor ran through the quivering frame, while Winston set his lips tightly as his hand grew warm. The thing was horrible to him, but the life he led had taught him the folly of weakness, and he was too pitiful to let his squamishness overcome him.

Still, he shivered when it was done, and rubbing the knife in the withered leaves, rose, and made shift to gird a rug about the uninjured horse. Then he cut the reins and tied them, and mounting without stirrups rode towards the bridge. The horse went quietly enough now, and the man allowed it to choose its way. He was going home to find shelter from the cold, because his animal instincts prompted him, but otherwise almost without volition, in a state of dispassionate indifference. Nothing more, he fancied, could well befall him.

CHAPTER II.

Lance Courthorne.

IT was late when Winston reached his log-built house, but he set out once more with his remaining horse before the lingering daylight crept out of the east, to haul the wagon home. He also spent most of the day repairing it, because occupation of any kind that would keep him from

Winston of the Prairie

BY HAROLD BINDLOSS.

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Synopsis.

Richard Winston, the hero of the story, having ridden in from his backwoods clearing to the postoffice in the Canadian settlement in the hope of receiving news of financial assistance to carry on his farming operations, meets only disappointment. Returning on his twenty-mile drive to his cabin in the cold and storm, his horses scare, plunge down an embankment and one of them has to be killed.

unpleasant reflections appeared advisable, and to allow anything to fall out of use was distasteful to him, although, as the wagon had been built for two horses he had little hope of driving it again. It was a bitter, gray day with a low, smoky sky, and seemed very long to Winston, but evening came at last, and he was left with nothing between him and his thoughts.

He lay in a dilapidated chair beside the stove, and the little bare room through which its pipe ran was permeated with the smell of fresh shavings, hot iron, and the fumes of indifferent tobacco. A carpenter's bench ran along one end of it, and was now occupied by a new wagon pole the man had fashioned out of a slender birch. A Marlin rifle, an ax, and a big saw hung beneath the head of an antelope on the wall above the bench, and all of them showed signs of use and glistened with oil. Opposite to them a few shelves were filled with simple crockery and cooking utensils, and these also shone spotlessly. There was a pair of knee boots in one corner with a patch partly sewn on to one of them, and the harness in another showed traces of careful repair. A bookcase hung above them, and its somewhat tattered contents indicated that the man who had chosen and evidently handled them frequently, possessed tastes any one who did not know that country would scarcely have expected to find in a prairie

farmer. A table and one or two rude chairs made by their owner's hands completed the furniture, but while all hinted at poverty, it also suggested neatness, industry and care, for the room bore the impress of its occupier's individuality, as rooms not infrequently do.

It was not difficult to see that he was frugal, though possibly from necessity rather than taste, not sparing of effort, and had a keen eye for utility, and if that suggested the question why with such capacities he had not attained to greater comfort, the answer was simple. Winston had no money, and the seasons had fought against him. He had done his utmost with the means at his disposal, and now he knew he was beaten.

Winston's nod signified comprehension, for the struggle between the great range-holders across the frontier and the smaller settlers who, with legal right, invaded their cattle runs, was just over. It had been fought out bitterly with dynamite and rifles, and when at last, with the aid of the United States cavalry peace was made, sundry broken men and mercenaries who had taken the pay of both parties, seeing their occupation gone, had found a fresh scope for their energies in smuggling liquor, and on opportunity transferring cattle, without their owner's sanction, across the frontier. That was then a prohibition country, and the profits and risks attached to

supplying it and the Blackfeet on the reserves with liquor were heavy.

"Business this way?" said Winston. Courthorne appeared to consider a moment, and there was a curious little glint in his eyes which did not escape his companion's attention, but he laughed.

"Yes, we're making a big run," he said, then stopped and looked straight at the rancher. "Did it ever strike you, Winston, that you were like me?"

Winston smiled, but made a little gesture of dissent as he returned the other's gaze. They were about the same height and had the same English type of face, while Winston's eyes were gray and his companion's an indefinite blue that approached the former color, but there the resemblance, which was not more than discernible, ended. Winston was quietly-spoken and somewhat grim, a plain prairie farmer in appearance, while a vague but recognizable stamp of breeding and distinction still clung to Courthorne. He would have appeared more in place in the states upon the southern Atlantic seaboard, where the characteristics the Cavalier settlers brought with them are not extinct, than he did upon the Canadian prairie. His voice had even in his merriment a little imperious ring, his face was refined as well as sensual, and there was a languid gracefulness in his movements and a hint of pride in his eyes. They, however, lacked the steadiness of Winston's, and there were men who had seen the wild devil that was born in Courthorne look out of them. Winston knew him as a pleasant companion, but surmised from stories he had heard that there were men, and more women, who bitterly rued the trust they had placed in him.

"No," he said dryly. "I scarcely think I am like you, although only last night Nettie at the settlement took me for you. You see, the kind of life I've led out here has set its mark on

(Continued on page 192).

Little Farm Fables—By AUNT QUILLA.

Bob's Difficulty.

One hot Saturday in vacation Joe was telling how he dreaded having Sunday come. His parents lived on the outskirts of a large town and, with them, he attended services there.

"I like church all right enough in some ways," he said. "The minister we have now knows how to interest boys pretty well, and I like the music, especially when they turn on the operatic kind. But when it comes to sitting up as straight and stiff as a deacon, why I confess I don't like it. Rather weed out a big onion bed any time."

No one who knew him would have doubted his statement, for of late he had got to lounging about so lawlessly that Aunt Melvina had been obliged to call him down—or up rather—for three successive Sundays.

Tall boy that he was, his head had a way of utterly disappearing before

the sermon was half over, that no one in the rear could see it. Meantime his legs sprawled over so much territory in front that his feet had threatened to crush the crisp hem of Aunt Melvina's frock so often that she had been forced to call him to order with several vigorous pokes of her parasol.

"You bet," he concluded, "that I would be mighty glad to get out of sitting up straight in church."

"Well," replied Bob who had difficulties of his own, "I have more trouble outside of church than in. Ever since I charged Widow Green a quarter more than it was worth for plowing her garden my conscience has poked me worse than Aunt Mell's parasol and I guess I've got to make it right or be miserable the rest of my natural life. Reminds me of what I was reading the other day: 'It is easier to sit up straight in church than to walk upright in the world.'"

The Shingle Weavers—By J. A. SYMES.

IN the long ago, ere the first pioneer farmers of that section of Michigan known as "The River Country," a tract of land lying north and west of the village of Grand Rapids on either side of Rogue River, and extending clear through to Rice Lake, the source of the river, had begun to enter their homesteads, there were crews of hardy woodsmen, nomadic in their vocation, that followed the river, never straying far from its banks, but building their shack in some sheltered grove of small spruce or hemlock. These were known as "Shingle Weavers." The land along the river was covered with a growth of lofty white pine, with occasional cedar and hemlock swamps. A crew usually consisted of about three able-bodied men, and a boy or two to "pack." The camp was selected with the sole idea of having plenty of stock in sight. No regard was paid to section lines, as it was all "government land," and therefore nobody owned it.

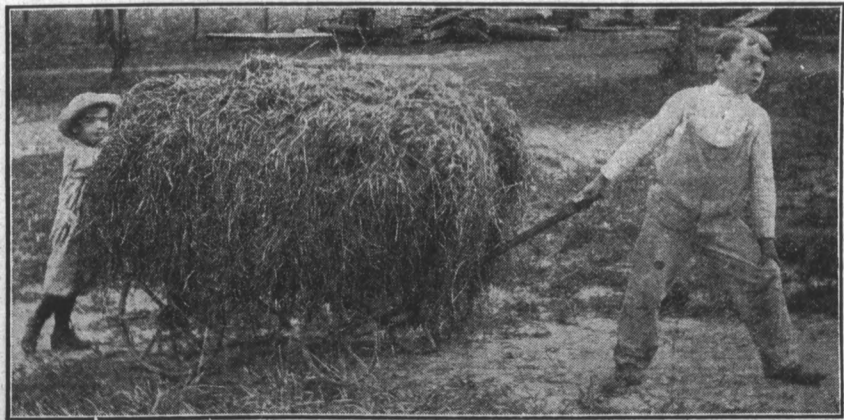
A camp was constructed by planting two good strong crotches about twelve feet apart, placing a pole across at about eight feet from the ground and laying several poles from this ridge pole to the ground and covering the poles with hemlock boughs, thus forming no mean shelter, the dense forest breaking the lower strata of air so there were no severe winds close to the earth. I have seen several of these camps or shacks many years after they had been deserted, all the cream of the timber having been worked up.

The first thing after having selected a site and constructing a camp was to fell one of the giants of the forest, tall, straight as an arrow, and a hundred feet to the first limb. The selection was made by boxing in about three feet from the ground and splitting out a large chip and trying it to see if it would "rive" good; that is, to see if it would split freely and even without eating from the sap toward the heart. If it proved to be good timber, the notch called the "scaff"

was, by repeated blows, sunk in to near the heart on the side where the trunk was expected to fall. The two sawyers would then begin on the side farthest from the boxing, and after burying the saw for some ways, would "corner" by sawing diagonally from the corner of the boxing to the scaff on the back side of the tree. This being done to prevent the tree from splitting when it is felled. If the butt showed signs of being shaky, it was discarded altogether, sometimes leaving as much as ten feet; the top from the first limbs was also rejected. I have often seen tops and butts rotting in on the ground that would form a single tree contain a thousand feet of what would now be called first-class lumber.

While the sawyers and axmen were cutting the bolts, the boys busied themselves by carrying in hemlock boughs for the bed and doing other light work. The bolts were sawed to sixteen inches in length, unless upon special contract, eighteen-inch shingles were wanted. The blocks, after being split and spalts taken off, the shive was used to mark the thickness of the butts of the shingles. The froe was then used to rive the shingles, which is splitting the bolt transversely so that when shaved smooth, the butts will be about three-eighths of an inch thick. The shaving is the part that requires the most craft and skill. A good shingle shaver will have all shingles of uniform thickness at the butt and a true taper and not to a feather thinness at the point, a trifle narrower at the thin end than at the butt. The shaving is done by using what is called a "shaving horse," a rude bench about six feet long with a raised bed, so that when the rives are laid on the butt and held in place with a clamp operated with the foot, they are readily shaved with a long drawing knife. One man will rive for two shavers and one boy will pack for two shavers.

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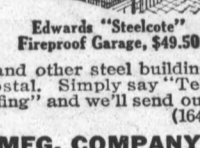
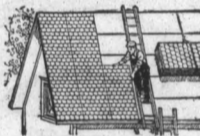
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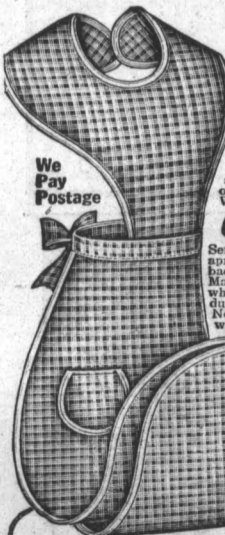
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boxlike frame, holding one-half thousand shingles, pressing them firmly and fastening the bands together with light hoop iron. None of the cheaper grades of shingles were manufactured, as "stars" were only \$1.50 per thousand.

When a sufficient number of bunches were packed to make an ox team load, some of the gang would take a hike to the settlement and prevail on someone with a team and wagon to haul them to Grand Rapids on shares. In the village they were "legal tender" for corn meal, "nigger toe," "rot gut" and "pigtail," meaning, in the parlance of the woods, molasses, whisky and tobacco. Game and fish could be had at any time of the year for the seeking. Corn dodgers were baked before the fire made of shavings and saps, fitches of venison roasted or grouse broiled over the coals. With a pinch of salt, plenty of exercise, and all outdoors for fresh air, a clean new shingle every meal for a plate, conspired to develop a good healthy appetite and a robust physique.

For recreation the boys made bows, arrows and darts out of the soft free pine, snared rabbits and drowned woodchucks, while the men hunted, fished and played cards with a pack so greasy and pitchy that the jack of spades could scarcely be told from the queen of hearts.

Following on the heels of the shingle weavers came the early lumbermen, who took the best of the remaining timber, usually spending one winter, what was made the previous one, and in the end, as in most lotteries, failing. Finally, with improved methods of manufacture and facilities for transportation, business-like operations, and the increased price of the product, fortunes were made lumbering off the culls of these same pine lands along the river. Farms have been made, fenced with the stumps of those once majestic, graceful trees, and now their last vestige is being destroyed by hauling the stumps and roots to the towns and cities to be consumed in the furnaces and ranges as kindling wood.

The hardy race of "Lumber Jacks" and "Shingle Weavers" have passed, but their memories linger and their works do follow them. A few years ago I had occasion to repair a roof that had done service for forty years. Many of the shingles were sound and bright as ever, except that part exposed, which was worn out by the elements. The fact that the shingles were nailed with the old cut iron nails had much to do with the durability of the roof. Wire nails and sawed shingles have shortened the efficiency of wooden roofs.

WINSTON OF THE PRAIRIE.

(Continued from page 190).

me, and my folks in the old country were distinctly middle-class people. There is something in heredity."

Courthorne did not parry the unexpressed question. "Oh, yes," he said, with a sardonic smile. "I know. The backbone of the nation—solemn, virtuous and slow. You're like them, but my folks were different, as you surmise. I don't think they had many estimable qualities from your point of view, but if they all didn't go quite straight they never went slow, and they had a few prejudices, which is why I found it advisable to leave the old country. Still, I've had my fill of all that life can offer most folks out here, while you scarcely seem to have found virtue pay you. They told me at the settlement things were bad with you."

Winston, who was usually correct in his deductions, surmised that his companion had an object, and expected something in return for this confidence. There was also no need for reticence when every farmer in the district knew all about his affairs, while something urged him to follow Courthorne's lead.

"Yes," he said quietly. "They are. You see, when I lost my cattle in the blizzard, I had to sell out or mortgage the place to the hilt, and during the last two years I haven't made the interest. The loan falls due in August, and they're going to foreclose on me."

"Then," said Courthorne, "what is keeping you here when the result of every hour's work you put in will go straight into another man's pocket?"

Winston smiled a little. "In the first place, I've nowhere else to go, and there's something in the feeling that one has held on to the end. Besides, until a few days ago I had a vague hope that by working double tides, I might get another crop in. Somebody might have advanced me a little on it because the mortgage only claims the house and land."

Courthorne looked at him curiously. "No. We are not alike," he said. "There's a slow, stubborn devil in you, Winston, and I think I'd be afraid of you if I ever did you an injury. But go on."

"There's very little more. My team ran away down the ravine, and I had to put one beast out of its misery. I can't do my plowing with one horse, and that leaves me stranded for the want of the dollars to buy another. It's usually a very little thing that turns the scale, but now the end has come, I don't know that I'm sorry. I've never had a good time, you see, and the struggle was slowly crushing the life out of me."

Winston spoke quietly, without bitterness, but Courthorne, who had never striven at all but stretched out his hand and taken what was offered, the more willingly when it was banned alike by judicial and moral law, dimly understood him. He was a fearless man, but he knew his courage would not have been equal to the strain of that six years' struggle against loneliness, physical fatigue, and adverse seasons, during which disaster followed disaster. He looked at the bronzed farmer as he said, "Still, you would do a little in return for a hundred dollars that would help you to go on with the fight?"

A faint sparkle crept into Winston's eyes. It was not hope, but rather the grim anticipation of the man offered a better weapon when standing with his back to the wall.

"Yes," he said slowly. "I would do almost anything."

"Even if it was against the law?"

Winston sat silent for almost a minute, but there was no indecision in his face, which slightly perplexed Courthorne. "Yes," he said. "Though I kept it while I could, the law was made for the safe-guarding of prosperous men, but with such as I am it is every man for his own hand and the devil to care for the vanquished. Still, there is a reservation."

Courthorne nodded. "It's unlawful, but not against the unwritten code."

"Well," said Winston quietly. "When you tell me what you want I should have a better opinion."

Courthorne laughed a little, though there was something unpleasant in his eyes. "When I first came out to this country I should have resented that," he said. "Now, it seems to me that I'm putting too much in your hands if I make the whole thing clear before you commit yourself in any way."

Winston nodded. "In fact, you have got to trust me. You can do so safely."

"The assurance of the guileless is astonishing and occasionally hard to bear," said Courthorne. "Why not reverse the position?"

Winston's gaze was steady, and free from embarrassment. "I am," he said, "waiting for your offer."

"Then," said Courthorne dryly, "here it is. We are running a big load through to the northern settlements and the reserves tomorrow, and while there's a good deal of profit attached to the venture, I have a notion that Sergeant Stimson has had word of it.

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Now, the Seargeant knows just how I stand with the rustlers though he can fasten no charge on me, and he will have several of his troopers looking out for me. Well, I want one of them to see and follow me south along the Montana trail. There's no horse in the government service can keep pace with that black of mine, but it would not be difficult to pull him and just keep the trooper out of carbine-shot behind. When he finds he can't overtake the black, he'll go off for his comrades, and the boys will run our goods across the river while they're picking up the trail."

"You mentioned the horse, but not yourself," said Winston quietly.

Courthorne laughed. "Yes," he said, "I will not be there. I'm offering you one hundred dollars to ride the black for me. You can put my furs on, and anybody who saw you and knew the horse would certify it was me."

"And where will you be?"

"Here," said Courthorne dryly. "The boys will have no use for me until they want a guide, but they'll have an unloaded pack horse handy, and, as it wouldn't suit any of us to make my connection with them too plain, it will be a night or two later when I join them. In the meanwhile your part is quite easy. No trooper could ride you down unless you wanted him to, and you'll ride straight on to Montana—I've a route marked out for you. You'll stop at the places I tell you, and the testimony of anybody who saw you on the black would be quite enough to clear me if Stimson's men are too clever for the boys."

Winston sat still a moment, and it was not avarice which prompted him when he said, "Considering the risk one hundred is very little."

"Of course," said Courthorne. "Still, it isn't worth any more to me, and there will be your expenses. If it doesn't suit you, I will do the thing myself and find the boys another guide."

He spoke indifferently, but Winston was not a fool, and knew that he was lying.

"Turn your face to the light," he said sharply.

A little ominous glint became visible in Courthorne's eyes, and there was just a trace of darker color in his forehead, but Winston saw it and was not astonished. Still, Courthorne did not move.

"What made you ask me that?" he said.

Winston watched him closely, but his voice betrayed no special interest as he said, "I fancied I saw a mark across your cheek. It seemed to me that it had been made by a whip."

The deeper tint was still visible on Courthorne's forehead, where the swollen veins showed a trifle, and he appeared to swallow something before he spoke. "Aren't you asking too many questions? What has a mark on my face to do with you?"

"Nothing," said Winston quietly. "Will you go through the conditions again?"

Courthorne nodded. "I pay you one hundred dollars—now," he said. "You ride south tomorrow along the Montana trail and take the risk of the troopers overtaking you. You will remain away a fortnight at my expense, and pass in the meanwhile for me. Then you will return at night as rancher Winston, and keep the whole thing a secret from everybody."

(Continued next week.)

INSTITUTES FOR BOYS AND GIRLS.

(Continued from page 190).

the simple exercise, like growing some common crop and end with the more difficult, as a daily record for 12 months of operations of a farm, with comments on these operations, and a set of books showing the loss or gain of the enterprise for the year.

The series of courses embrace cer-

veal crops, staple crops, forage crops, marketing products, etc., requiring for graduation the completion of the course. By thus systematizing the instruction experience is had along all lines of farm operations. A similar course is prepared for contest work in domestic science and household art.

In a few states the farmers' institutes and the college of agriculture, by conducting what are called boys' encampments, have interested in agricultural subjects many boys who would not join the ordinary club contest. The camping-out idea appeals to them as a pleasant and enjoyable diversion, and the lectures, demonstrations, and judging contests which form a part of their daily life for the week or two during which the camp is held are pursued with pleasure as well as with profit. Their interest is aroused by the scientific features of subjects which they have before understood and which are here exhibited in their relation to the practical. Many boys who otherwise would never have been reached are thus started in search of further useful information. These boys' encampments are, strictly speaking, young peoples' institutes. The members live and study together during the entire meeting; prizes are awarded for winners in stock, grain, and similar judging contests, and for proficiency in other agricultural subjects as determined by a final examination of the work pursued at the encampment.

The time and place of meeting, the outlining of programs, the selecting of speakers, and all other arrangements for the young peoples' institutes is under the direction of the regular farmers' institute, and the expenses are paid by this organization. The institute for young people will thus become a branch of the regular farmers' institute, organized and conducted entirely by it.

The custom in this work is to hold three meetings each year—one in the early spring, another in midsummer, and a third in the late fall. The first or spring meeting is for instruction along lines that are to be put into practice and followed during the spring and summer. The autumn meeting is devoted more especially to a discussion of the results obtained from putting the information received at the previous meetings into practice and for judging contests and awarding prizes to prize winners. The midsummer meeting in some instances, might in addition, be made a field meeting or an encampment at which the exercises would cost be in connection with observation of growing crops and the examination of farms, orchards, herds and flocks in the neighborhood where the institute or encampment is held.

The instruction is by lectures and demonstrations, given by competent institute speakers, much in the same manner as is now practiced in dealing with adults, and special effort is made to induce free discussion of the various points that the speakers present.

What the secondary schools may ultimately accomplish in this direction has not yet been revealed. In the meantime these youths are growing up, many of them with no proper appreciation of country life or of its advantages and opportunities in a business way over those of the towns and cities. The farmers' institutes may change all this by modifying its present methods to suit the ages, needs, and degrees of advancement of these youth. It should avail itself of the opportunity now presented and occupy this field. It is far better to go ahead and instruct and interest the lad and lass while in youthful years, than to set around a parlor stove and discuss the vital problem, "Why do our young people leave the farm?"

Second weekly installment of the splendid serial, "WINSTON OF THE PRAIRIE," appears on page 190.



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Woman and Her Needs

At Home and Elsewhere



Pleasant Conversation.

A CERTAIN woman, whose books for girls are making her name well known, traces most of her success to her ability to make "pleasant conversation." Her characters talk much, they talk entertainingly, pleasantly, but not bookishly. The reader likes the book folks, and talks the books up into "best sellers," because of the bright conversation.

Among her friends the modest author is equally famous for her "pleasant conversation." Like the girl in the olden fairy tale, pearls and diamonds drop from her lips when she speaks. There is much that is unpleasant in her life, but you never hear of it from her. She speaks only of the sunshine which occasionally comes her way; of the little gift this friend made her; the book another loaned her; the lecture for which a distant relative sent her a ticket. You know from other sources that the friend who made the gift only did it as a sop to conscience for previous neglect and abuse, but the writer lady forgets that. She thinks, and rightly, that the world is not interested in her troubles only as they furnish food for gossip, so she keeps them to herself.

In fact, she keeps most personalities to herself, only telling personal things which will put someone else in a better light. Life is more to her than the little things of the day, and she talks mostly of matters of general interest. The woman movement, the child labor problem, educational movements of all sorts, politics, religion, books, art, all reforms, are to her of greater importance than how tired she was when she got up this morning, how she likes her eggs cooked, and the disagreeable things her brother said at breakfast.

This one woman is an inspiration to her friends because of her conversation. But she is one in 10,000, for with most of us the personal is our chief topic of conversation. We talk of ourselves or about our neighbors the greater part of the time. In fact, some of us never talk of anything else, never have even a flash of inspiration to lighten the dead level of our conversation.

The optimist brags of her success, the size of her house, her new parlor rug, the money cleared this year, how well Mary is doing in music, and Johnnie in school, her stylish new dress, etc., etc. Between times she sighs for friends and relatives who aren't doing so well, and remarks on the cut of your dress and the size of your pumps.

The pessimist tells you her troubles, real or near, mostly near. Everything is only coming out half a crop, she works from morning till night and never gets any sympathy, the children are going to turn out bad, John's mother is trying to make trouble in the family, the family across the road are light-fingered—you know all the rest.

The idea is that it is all personal—unrelieved by any hint that your friend has an inner life which mere things can not touch. If she has a mind capable of grasping ideas outside of her personal ambitions she seldom mentions it. The woman who does venture to go beyond clothes,

babies, recipes and gossip is looked upon as queer.

If we all stopped to analyze our conversations, would we not change? Are you interested, for instance, in your neighbors' troubles in a sympathetic way? Hardly! You are interested only if they promise to make gossip—just the everyday worries bore you to death, they're so much like your own. Why, then, should you expect her to be interested in yours?

Why talk about your troubles, anyway, and leave an impression of un-

A Sheaf of Suggestions for the Beginner.

As I recall my youth, with its ignorance, trials and mistakes, I feel that I would like to offer a few hints that might help, some other young home maker. Experienced housekeepers, not being interested will doubtless "skip it."

To know how to make good fudge is doubtless quite an accomplishment, but to know how to make good bread and pie will please Mr. Young Husband much better. For good pie crust, take three cups of flour, one cup of lard, one-half teaspoon of salt and about half a cup of water. Rub the lard into the flour, add the water and salt, mix and roll out. This makes the crust rich and flaky, good enough for anybody. As there is a difference in lard it may not always be the same, but experience or practice will show you when it is right. Should you sometime think it not quite rich enough, dot the upper crust with bits of lard just before putting in the oven.

There are so many things to make pies of that it is hardly worth while to name them. A raisin pie is 'most too good to eat, made with one cup of raisins, one cup of sugar, one cup of sweet cream. Bake with two crusts. It is quite as good, though not so rich, with one beaten egg in a cup of milk, in place of the cup of cream.

Fruit, for pies or anything else, should always be washed and the washing is not only a simple matter but the fruit is easier handled. If you have berries to wash, put water into pail or pan and pour the berries into it. Have more than enough to cover the fruit, then pick them over, from the water. You can pick them up without bruising them at all and when they are looked over they are clean. Pit your cherries in the same way. It isn't necessary to break every cherry open, you can soon learn to tell a wormy cherry by the feeling, and also a wormy cherry has a dirty pit, but break any that appear at all suspicious.

If apples are washed before paring and care taken not to put in any wormy cores, the peelings may be used for jelly. Peaches and pears are not so "mussy" if taken from water, and should be put into water as pared, to prevent turning black.

I have no difficulty in having canned fruit to keep. I boil the can covers, keep my fruit boiling while filling cans, see that the covers are perfectly air tight by turning upside down, and never, never tighten a cover after the fruit is cold. I am careful not to even lift the covers. That is about all

happiness? As Montague Glass puts it, "The only difference between the happy ones and the unhappy ones is the happy ones keep still about their troubles." Why not, then, gain a reputation for happiness by cheerful conversation? In order to make it you will have first, to think it, and as thoughts make the man you'll become happy in time.

Why not build up the whole tone of your conversation? Instead of talking of people, talk of things and abstract ideas. You'll be more interesting and in time more interested. And life will lose much of its sordidness.

DEBORAH.

there is to canning, sugar or no sugar makes no difference.

Meat, thoroughly cooked and canned the same way will keep for months.

Sweet apples are not appreciated as they should be; they make one of the most delicious sauces. Wash the apples, cut in halves, core and lay in a baking pan, side down, a layer of apples, sprinkle liberally with sugar and dot with butter. Add as many layers as desired. Nearly cover with water and bake until tender. When done the water should form a rich, thick syrup, but care should be taken that they do not become dry. If the syrup should be too thin, it can be boiled down after the apples are taken up, and when done poured over the apples. Talman Sweets are delicious cooked this way.

Mix a little flour or cornstarch with your sugar when cooking juicy fruit, set the fruit back where it will stop boiling while you stir in the sugar and flour, and then let boil up again.

When cooking eggs, melt some butter in your frying pan or a granite dish, break in the eggs and your around them some good rich milk or cream. Add salt and pepper as liked, and fry as usual, or they may be baked, but require more time. Or, after melting the butter, put in a few thin slices of cheese, put in the eggs, milk, seasoning, and bake. They are good broken into boiling milk instead of water when poaching them.

Now just a few words about butter-making, and I am done. So many times you will head someone say, "I can't make good butter, we only milk one cow and it takes so long to get a churning."

That's all nonsense. You can make good butter if you only have half the milk from one cow. You can make good butter from a teacup of cream, but, of course, there will not be much of it.

The secret of good butter-making is this, when your cream is ready to churn, churn it. Whether it is every day or once a week. Never churn less often than once a week, and twice a week usually is about right, though there may be times when that isn't often enough. Don't let the cream rot before you skim it, and skim with as little milk in it as possible, and when it is ready, churn it. You can shake it in a fruit jar, if you like, stir it with a wooden paddle, silver fork or spoon, use the ice cream freezer or you can make a little churn out of a crock. I stir the cream from two cows in a milk crock, with a butter stick, but do it any way you like, just so you do it.—W.

HELP THE RURAL HOME.

The International Congress of Farm Women has now fairly launched a movement to erect a Farm Woman's building on the grounds of the Panama-Pacific Exposition. This farm house is to represent every advance that has been made to make life on the farm and in the farm household more attractive. The model farm home is to be built by the women of America for the women of the world to see and enjoy at the exposition.

It will cost, not half a million, as did the model village at Ghent, Belgium, last year, but the modest sum of \$50,000, and in order that as many women as possible may own a brick or a step or a pan in it, each farm woman is only going to be asked to tender her good offices with her neighbors.

Will you not at once send us your name and address with an offer to do a little service for us? All we ask just now is a few minutes of your time—nothing more. Write to Mrs. Belle V'D. Harbert, president, 340 Century Building, Denver, Col., and she will tell you just how you can be helpful to the cause.

HOME QUERIES

Household Editor:—How do you make German coffee cake?—Mrs. D.

The coffee cake is easily made when you are baking bread. Take enough dough to make a medium-sized loaf, add two-thirds of a cup of melted butter, one-half cup sugar, one teaspoon of salt, two slightly beaten eggs and a lemon rind grated. Mix thoroughly into the dough and set to raise. When light mix down and spread as evenly as possible in two or three pie tins. When light again, brush with beaten egg, sprinkle thickly with granulated sugar and cinnamon mixed, and bake about 20 minutes in a quick oven.

Household Editor:—Can you give me a nice recipe for stuffed cabbage?—Mary B.

Clean the cabbage thoroughly and hollow out the stalk end. Fill with a stuffing of chopped beef, and bread-crumbs soaked in milk, bound with beaten egg, and steam until the cabbage is tender.

Household Editor:—Can you tell me how to put down sardines in mustard so they taste like those we buy? Will small fruit can do to put them in?—Mrs. P. B.

I do not think you could do this successfully at home.

Household Editor:—Can you give me any recipes for pickling cucumbers?—Mrs. L. K.

Chop two dozen ripe cucumbers, six onions and four peppers, leaving rather coarse. Add one cup of salt and one ounce of mustard; place in a bag and drain one day. Then put in cans, cover with cold vinegar and seal.

Peel and quarter ripe cucumbers, remove the seeds and place in brine three days. Put in clear water one day, changing the water at night. In the morning put one pint of vinegar, one pound of brown sugar, two spoonfuls of broken cinnamon, a piece of ginger root and some mace in the preserving kettle, add the cucumbers and cook until tender. Then seal in jars.

Ripe cucumbers, or watermelon rind may also be used in your mixed pickles instead of green cucumbers.

Practical Science.

CANNING VEGETABLES IN THE HOME.

(Continued from last week).

Germ which cause decay may be divided into three classes—yeasts, molds and bacteria. All three of these are plants of a very low order, and all attack other plants of a higher order in somewhat the same way. Every housewife is familiar with the yeast plant and its habits. It thrives in substances containing sugar, which it decomposes or breaks up into carbonic acid and alcohol. This fact is made use of in bread making, as well as in the manufacture of distilled spirits. Yeasts are easily killed, so they can be left out of consideration in canning vegetables. Molds, like yeasts, thrive in mixtures containing sugar, as well as in acid vegetables, such as the tomato, where neither yeasts nor bacteria readily grow. Although more resistant to heat than yeasts, they are usually killed at the temperature of boiling water. As a general rule, molds are likely to attack jellies and preserves and are not concerned with the spoiling of canned vegetables. The spoiling of vegetables is due primarily to bacteria.

Bacteria are also much more resistant to heat than yeasts. They thrive in products like milk and in meats and vegetables rich in protein, such as peas, beans, etc. All known species of molds require air in which to work. This is not true of bacteria, certain species of which will live and cause vegetables to decompose even when no air is present. When these particular species are present the exclusion of air is no safeguard against decay, unless the vegetable is first thoroughly sterilized. Bacteria are so small that they can only be seen with a microscope, and they reproduce themselves with amazing rapidity. One bacterium under favorable conditions will produce about twenty millions in the course of 24 hours. Accordingly certain vegetables spoil more rapidly than others, because they furnish a better medium for bacterial growth.

The reproduction of bacteria is brought about by one of two processes. The germ either divides itself into two parts, making two bacteria where one existed before, or else reproduces itself by means of spores. These spores may be compared with seeds of an ordinary plant and they present the chief difficulty in canning vegetables. While the parent bacteria may be readily killed at the temperature of boiling water, the seeds retain their vitality for a long time even at that temperature, and upon cooling will germinate, and the newly formed bacteria will begin their destructive work. Therefore it is necessary in order to completely sterilize a vegetable to heat it to the boiling point of water and keep it at that temperature for about one hour, upon two or three successive days, or else keep it at the temperature of boiling water for a long period of time, about five hours. The process of boiling upon successive days is the one that is always employed in scientific work and is much to be preferred. The boiling on the first day kills all the molds and practically all of the bacteria, but does not kill the spores or seeds.

As soon as the jar cools these seeds germinate and a fresh crop of bacteria begin work upon the vegetables. The boiling upon the second day kills this crop of bacteria before they have had time to develop spores. The boiling upon the third day is not always necessary, but is advisable in order to be sure that the sterilization is complete. Among scientists this is called

fractional sterilization, and this principle constitutes the whole secret of canning. If the housewife will only bear this in mind she will be able, with a little ingenuity, to can any meat, fruit or vegetable.

Exclusion of the Air.

Even after sterilization is complete the work is not yet done. The spores of bacteria are so light that they float about in the air and settle upon almost everything. The air is alive with them. A bubble of air no larger than a pea may contain hundreds of them. Therefore it is necessary after sterilizing a jar of vegetables to exclude carefully all outside air. If one bacterium or one of its spores should get in and find a resting place, in the course of a few days the contents of the jar would spoil. This is why the exclusion of air is an important factor, not because the air itself does any damage but because of the ever-present bacteria.

All of this may seem new-fashioned and unnecessary to some housekeepers. The writer has often heard it said, "my grandmother never did this, and she was the most successful woman at canning that I ever knew." Possibly so, but it must be remembered that grandmother made her preserves—delicious they were, too—and canned her tomatoes, but did not attempt to keep the most nutritious and most delicately flavored vegetables, such as lima beans, string beans, okra, asparagus, or even corn.

So-called "Preserving Powders."

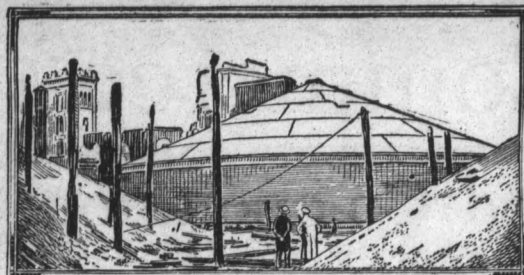
There are a great many brands of so-called "preserving powders" on the market. These are sold, not only under advertised trade names, but by druggists and peddlers everywhere. In the directions for use the housewife is told to fill the jar with the fruit or vegetable to be canned, to cover with water, and to add a teaspoonful of the powder. It is true that these powders may prevent the decay of the fruit or vegetable, but they also encourage uncleanly, careless work, and in the hands of inexperienced persons may be dangerous. While, with small doses the influence may not be apparent in an adult in normal health, with a child or an invalid the effect may be of a serious nature. The proper way to sterilize is by means of heat, and as this can be done very easily and cheaply the use of chemical preservatives in canning is not to be recommended.

Kinds of Jar.

The first requisite for successful canning is a good jar. Glass is the most satisfactory. Tin is more or less soluble in the juices of fruits and vegetables. Even the most improved styles of tin cans which are lacquered on the inside to prevent the juice from coming in contact with the tin, are open to this objection. While the amount of tin dissolved under these conditions is very small, enough does come through the lacquer and into the contents of the can to be detected in an ordinary analysis. While the small amount of tin may not be injurious, it gives an undesirable color to many canned articles.

There are a great many kinds of glass jars on the market, many of them possessing certain distinct points of advantage. The ordinary screw-top jar is the one in most common use. Although cheap in price, these jars are the most expensive in the long run. The tops last only a few years and, being cheaply made, the breakage is usually greater than that of a better grade of jar. The tops also furnish an excellent hiding place for germs, which makes sterilization very difficult.

(Continued next week).



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The Evening World.

SHINGLES TO BLAME

MASSACHUSETTS is still bending a thoughtful brow over the ruins of Salem. Everybody agrees that the one thing which contributed most to the spread of the fire was—shingles. House after house burst into flame the instant the rain of sparks touched the tinder-like shingle roofs.

—a dry, weathered shingle makes about the finest kindling known. In a closely populated town a brisk wind carries flames over shingle roofs as fire sweeps over sunburnt prairie grass.

The Bay State is using the Salem fire to start a strong argument against shingles. It will do the rest of the country no harm to listen.

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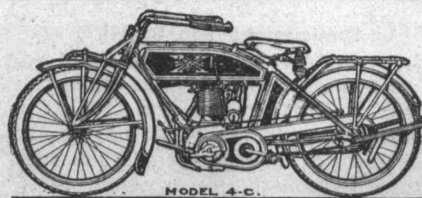
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STEP IN AND SEE OUR USED

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Farm Commerce.

Michigan and Co-operation.

By D. W. FRANCISCO.

IS it possible that a few years hence the greater portion of Michigan's fruit crop will be marketed through one large co-operative association such as are now found in the states along the Pacific coast? I believe so, and I do not believe that time to be far distant. Picture such an organization, if you will, to be in operation in Michigan six years from today. Let us take a glance at its organization.

How it May be Organized.

In the city of Grand Rapids, where it can easily place a hand in either the state's orchards or markets, we see the central office. Here are located the sales, traffic, legal, advertising, purchasing and mutual protection departments. Here we find the directing brain of an organization comprising thousands of growers and see it educated to the minute every day in the country's marketing conditions. A sweeping glance reveals a striking similarity of underlying principle existing between our exchange and Uncle Sam's postal system. Both assemble their respective commodities from widely scattered sources, divert them into the main arteries of transportation and place them ultimately at their destination with the greatest saving of time, money and labor. The enormous proportions of the business handled is the basis on which each has established its wonderful efficiency. Both aim to put indirect dividends into the pockets of those who utilize their organization and not to render profits other than salaries to those actually engaged in their operation.

Like a Great River.

The flow of fruit products, we observe to be not unlike that of a great river. An apple, perhaps, first packed in a basket with others by some grower, mingled with similar baskets, these in turn grouped with those of another orchard into one car, this linked to a long train to be hustled along, and then, through an inverted series of steps which separate instead of unite, the little apple finally finds itself in the palm of the consumer. Perhaps it may be astonished to find that after all it is not unlike the one which plucked it from the tree. It does not realize the intricate mechanism necessary to accomplish this and to accomplish it efficiently.

The tributaries of our stream of "rolling" produce we may trace back to such points as Benton Harbor, South Haven, Fennville, Paw Paw, St. Joseph, Lawton, Fremont, Shelby, Pentwater, Ludington, Frankfort, Traverse City and Northport. These seem to group themselves into natural geographical districts each having a head office which is in turn dominated by the central "brain" at Grand Rapids. Thus we see that the local associations at Fennville, Paw Paw, Lawton, St. Joseph and other towns in that region are under a district exchange at St. Joseph.

The Outlet.

And now let us look to the "delta" of our stream. We find the assembling process reversed and the produce stream broken up so that it reaches the turbulent sea of markets at different points. Our exchange has placed bonded agents in Pittsburg, Cleveland, Detroit, Chicago, New York and all the principal markets in America, as well as a few abroad. The head office seems to know which markets are offering the most for fruit and possesses the ability to get the

shipments there at the time when they are most needed. In consequence both grower and consumer are being benefited.

And the Benefits.

Sixty per cent of Michigan's growers are marketing through this medium. They inform us that they are shipping ten times the quantity of grades and the creation of a reliable fruit as was loaded a few years ago and that due to the standardization of brand, combined with well directed advertising by the central exchange, that they are receiving more for their fruit than ever before. Furthermore, they declare that they are paying less for their equipment and supplies and that the cost of marketing has been reduced to two per cent on the gross sales. They say they are at liberty to join or withdraw from an association at will, that outside of the auction markets they may dictate the selling price of their own products, that they are privileged to have their own brand, that each grower receives a

paying for that which some receive free.

The by-laws of most of Michigan's co-operative associations specify that no member shall ship any part of his crop "to be sold on commission in any market to which the association ships or to ship with any party shipping in competition with the association." The punishment for the violation of this rule is the forfeiting of "all rights to and interest in, any benefits in the association except stock held," but the violator may be "reinstated the following year by a payment of a fine of five dollars."

Whether a member of an association or not, no shipper can be deprived of the advantages of a co-operative association which exists in his community. He is simply a vandal, stealing the advantages of those who contribute for them. Such thrusts at the vitals of co-operative organization should be much more seriously considered and violators accorded much more severe treatment than a mere fine of five dollars.

The Misdemeanors of Members.

Those interested in co-operation in the vicinity of Paw Paw say that they find it difficult to induce the small growers to haul their products any distance to the central shipping house and that many of the growers when they have sufficiently large crops to ship in carload lots will promptly withdraw from the association.

With all classes of growers in an

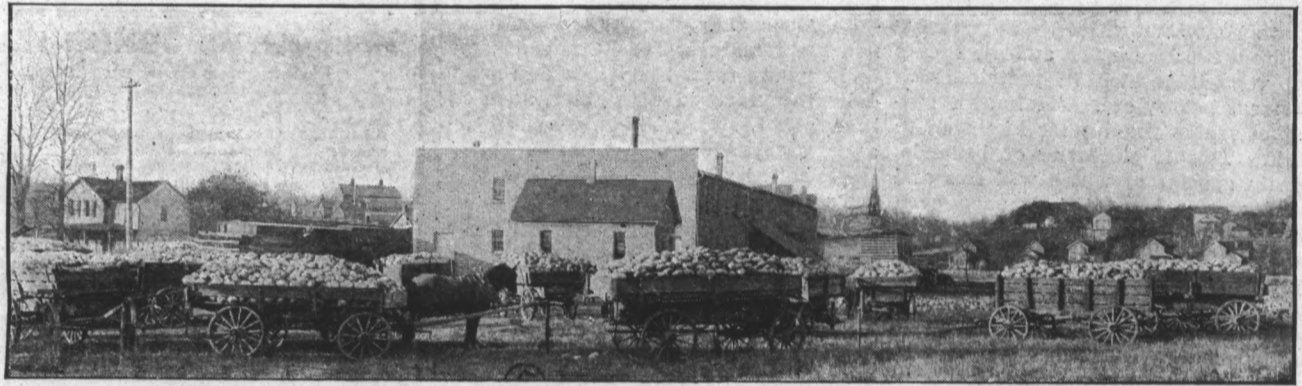
delayed sometimes until very late at night before his day's work is ended.

In one district an inspector was discharged because he truthfully reported the fruit of the president of the association to be below the required standard, and ordered it returned. In other instances it is apparent that officials of the exchange were permitted to ship a little earlier, or at a time when their fruit was somewhat greener, to take advantage of favorable market conditions. This, of course, worked to the detriment of the other growers.

The South Haven Fruit Exchange refers all complaints among their growers to a board of arbitration consisting of three members whose decision is final, and who have the power to suspend members who fail to comply with the orders of the association in regard to the handling of their crop.

Growers Dissatisfied.

At Paw Paw there are three associations which are constantly at odds. The managers have been receiving a flat rate on every box of fruit sold, a plan which leaves little incentive to the securing of highest prices. Some of the growers there recently became dissatisfied and accepted the opportunity of a Chicago commission house to combine with three or four other growers and ship them a carload a day during the season. The fruit was used for a special trade, the commission house demanded careful packing



By Pooling and Shipping Farm Products in Car Lots, Farmers Can Reduce Marketing Cost.

bulletin daily which sets forth the marketing conditions throughout the country, that regardless of the amount produced each grower has the advantage of car lot rates, that their transportation disease and marketing problems have been reduced to a minimum. In short, we feel as we talk to these men, the spirit of thrift and satisfaction with which they are surrounded. The roster of growers includes the names of doctors, lawyers, bankers, real business men. Fruit raising itself has become a profession.

And now, how about Michigan, itself? But if you have followed in our glimpse of Michigan's co-operative organization of the future, I need not point out the new markets opened, more certain handling of crops, more and better fruit, increased value of property, greater thrift, higher rating among horticultural states and vastly greater reputation as a prosperous state and producer of fine fruits.

The Reality is Quite Different.

Michigan's co-operation is still in its adolescence. It is receiving its "bumps." But we recall that it took California 25 years to make a success in co-operating. We know that Michigan has the resources, it is fast feeling the necessity and can easily acquire the spirit of co-operation. Let us look at a few typical examples of the knocks which have been dealt Michigan's pioneer efforts at co-operation.

Punishment Too Small.

In every community there are always some individuals who make full use of the information for which the association pays, and while begging at the door of co-operation stubbornly refuse to contribute so much as a word of approval. Such tactics are likely to disrupt an organization for no one of us is desirous of continually

organization, some will pack a poorer grade in packages of the same brand than will others. The growers making the better pack find that through the pooling system they are receiving no more for their fruit than the poor packer. In fact, he is delivering extra fine fruit and receiving prices on that of average quality. If such a condition does not provoke the withdrawal of the better shippers, it at least lowers the reputation of the brand or renders it absolutely worthless.

The Michigan Fruit Exchange, which was formed at Benton Harbor in 1890, was a failure simply through lack of provision for actual fruit inspection.

Lack of ability to compel the growers to adhere to the regulations which they had themselves signed, cost the growers in the vicinity of Paw Paw a profitable season a few years ago. They refused to comply with the orders regarding spraying, with the result that the downy mildew became so bad that half the crop was lost. Worse than that, the growers insisted on shipping as usual, with the result that the poor quality of fruit ruined the marketability of that of several years following.

Hesitate to Invest.

At Fennville there has always been considerable complaint on the part of some of the members because of the inability to use home help in packing, and constant grumbling is heard about the initial expense of erecting a packing house and of meeting the insurance, investment, interest and other items. Some growers consider the necessity of packing in the central house a hardship, because they can not pack as they pick, but must wait until late in the day, and then haul the fruit to the shipping station to be pooled. The farmer is consequently

and was usually able to pay two cents more than the association was offering to its growers.

Contrary to the expectations of the growers who first organized at Fennville the buyers opposed co-operation even though it offered them opportunities to secure larger quantities of fruit of the same grade, variety and brand with less trouble. In sections where competitive associations existed they lost no time in playing one against the other, offering outside growers higher prices and frequently resorting to fraud and misrepresentation to force down the price paid the associations. The three exchanges at Lawton finally solved the situation, temporarily, at least, by getting together and selecting an "arbiter" who kept each association informed of the prices being quoted by the others.

Poor Seasons Bring Dangers.

During the years when the crop is very small and as a result there is little impetus to keep the association going, grave danger exists of disorganization. An association of peach growers at Shelby was dissolved through the devastation wrought by a severe frost and numerous grape shipping associations around Paw Paw and Fennville have been unable to survive through seasons when their orchards were severely ravaged by disease. Failing to fill their many orders in such seasons when they did not operate they found it difficult, with the abundant yields of succeeding years, to secure sufficient demand.

Capital is Needed.

An organization without sufficient working capital may fail because of inability to meet its obligations promptly. Money matters have greatly troubled the Fennville associations, due, in part, no doubt, to lack of sufficient business organization and also

to dealings with unreliable parties who recognized the weak points of the association. Great difficulty has been encountered in this section in securing proper shipping facilities and in some instances it was apparent that the railroad and express companies were working together against the farmers' best interests. As a result the growers were obliged to raise the price placed on their commodities in order to eke out even the smallest profit. Similar complaints are continually heard from other sections.

Good Manager the Greatest Asset.

A poor manager may be the cause of more dissatisfaction than any other one thing. The manager must be competent, he must be aggressive, he must be an expert in shipping and marketing, and above all, his personality must gain for him the loyalty and confidence of the growers. The Michigan Fruit Exchange once encountered serious difficulty through a lack of sufficient confidence and power being placed in the hands of the manager, while in certain associations at Paw Paw the conditions were reversed and the manager ruled supreme, with equally bad results. Numerous instances may be cited where the members have clearly failed to realize the importance of securing a competent manager as the most paying investment.

Several organizations have failed because of the influence of persons wholly unfamiliar with conditions who are in associations in which the membership is not restricted to producers and the voting power of members is not limited, or by the prejudice of some individual producer who owns a large block of stock.

Trying to do Too Much.

If the scope of the association is too broad its value may be lessened by the shipment of small quantities of many kinds of fruit. Many attempts to co-operate have failed at the outset because the promoters lacked the co-operative spirit or attempted to accomplish too much at first, and the path of co-operation is strewn with the wrecks of associations whose development has been forced and which were not borne of necessity.

Successes might be enumerated which more than balance the failures, but we must know what to avoid as well as what to seek and the experiences enumerated above must be sufficient to show that the path of endeavor of Michigan's co-operative organizations has certainly not been strewn with roses.

Crop and Market Notes.

Michigan.

Kalkaska Co., Aug. 26.—Heavy and frequent rains have damaged the oat crop, causing them to go down and making them difficult to harvest; corn and potatoes are doing fine. Pastures excellent; stock of all kinds in good shape and high priced. Fall plowing backward, although ground is in good condition to work. New clover seeding never was better; threshing now in progress; yield fairly good. Apples are a failure. Young cattle 6c on foot; hogs 8c; butter-fat 30c; eggs 20c; chickens 13c.

Lapeer Co., Aug. 22.—Late rains have provided sufficient moisture. Potatoes are doing well, and many are moving marketward at around 50c per bushel. Corn is booming and the early planted will soon do to cut. Threshing well along and yields are generally disappointing. Many fields of beans are ready to pull in a week, while others are green. No disease is apparent in them. Large acreage of wheat will be seeded. Pastures good; so are meadows and some are expecting a little cloverseed. Prices are higher on eggs, beans wheat and rye, and lower on meats and poultry.

Monroe Co.—Rains on the tenth and fourteenth broke the drought, and corn, potatoes, cucumbers and tomatoes were greatly benefited. Cukes sell at factory for 75c for firsts; 25c for seconds, and thirds 10c per 50 lbs. Early potatoes are a failure. About enough early apples for home use. Tomatoes bring \$8@10 per ton at factory. Threshing pretty well done. (Continued on page 198).

Tires at Before-War Prices

Goodyear Prices

It is Folly Today to Pay More

30 x 3 Plain Tread	\$11.70
30 x 3½ " "	15.75
34 x 4 " "	24.35
36 x 4½ " "	35.00
37 x 5 " "	41.95

There exists now a new, compelling reason for buying Goodyear tires. It results from War conditions.

These leading tires—built of extra-fine rubber, in the same way as always—are selling today at June prices.

You will find today a very wide difference between most tire prices and Goodyears.

Due to Quick Action

Early in August—when war began—the world's rubber markets seemed closed to us. Rubber prices doubled almost over night.

Men could see no way to pay for rubber abroad, and no way to bring it in. We, like others—in the panic—were forced to higher prices. But we have since gone back to prices we charged before the war, and this is how we did it:

We had men in London and Singapore when the war broke out. The larger part of the world's rubber supply comes through there. We cabled them to buy up the pick of the rubber. They bought—before the advance—1,500,000 pounds of the finest rubber there.

Nearly all this is now on the way to us. And it means practically all of the extra grade rubber obtainable abroad.

Today we have our own men in Colombo, Singapore and Para. Those are the world's chief sources of rubber. So we are pretty well assured of a constant supply, and our pick of the best that's produced.

We were first on the ground. We were quickest in action. As a result, we shall soon

have in storage an almost record supply of this extra grade of rubber.

And we paid about June prices.

Now Inferior Grades Cost Double

About the only crude rubber available now for many makers is inferior. In ordinary times, the best tire makers refuse it. Much of it had been rejected. But that "off rubber" now sells for much more than we paid for the best.

The results are these:

Tire prices in general are far in advance of Goodyears. And many tire makers, short of supplies, will be forced to use second-grade rubber.

Be Careful Now

In Goodyears we pledge you the same-grade tire as always. And that grade won for Goodyears the top place in Tiredom—the largest sale in the world.

And for the time being our prices are the same as before the war. We shall try to keep them there.

We accept no excessive orders, but dealers will be kept supplied. And we charge them, until further notice, only ante-bellum prices.

That means that Goodyears—the best tires built—are selling way below other tires.



Grandsons of King of the Pontiacs

From Choice A. R. O. Dams.

KING PONTIAC JEWEL KORNDYKE, their sire, has in the records of ten of the nearest dams and of forty daughters listed under the sires in his pedigree an average for the fifty of 31.25 pounds each in seven days.

Average per cent of fat of his three nearest dams 4.37.

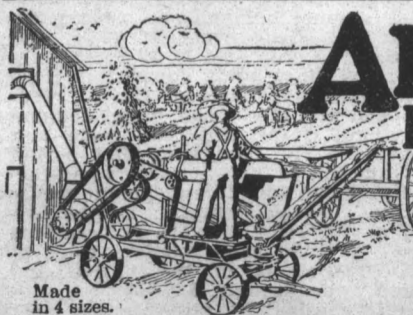
The sires in the first three generations of his pedigree have 500 A.R.O daughters

You can see these choice young sires, ready for service this fall, on your way to or from the State Fair, at Ashmoor Farms, Tecumseh, Michigan, R. F. D. 2; their sire, dams and half sisters. A few dams bred to "KING" might now be spared. Conveyances will on application meet you at Tecumseh, on Lake Shore Ry., or at Britton on Wabash. Telephone.

PRICES REASONABLE,

For further particulars as to breeding, if you cannot go out to the farm address.

HATCH HERD, YPSILANTI, MICHIGAN.



APPLETON Husker & Shredder

Half the food value of your corn crop is in the stalks. The fodder from the stalks pays the whole cost of operating an Appleton which shreds or cuts them while husking the ears.

The Appleton was the first successful machine husker made; the product of 42 years' experience in farm machinery making. Husks the cleanest, shells the least, and is equipped with the most efficient corn saver. Easiest and safest to operate.

Guaranteed to do more and better work with less power than any other husker of same size, working under equal conditions. Built by Appleton standards, it gives years of service; yet one season's income from it pays its cost. Send now for the Appleton Husker book—it's free. APPLETON MFG. CO., 520 Fargo St., Batavia, Ill., Est. 1872.

AGENTS WANTED!

We want an agent for EVERY FAIR held in Michigan to solicit subscriptions. Big pay. Write now. Address **THE MICHIGAN FARMER, DETROIT, MICH.**

Markets.

GRAINS AND SEEDS.

September 1, 1914.

Wheat.—Although prices have fluctuated the past week the general tendency of values for wheat has been upward, some of the advances being large, with reactions noted last Friday and Tuesday. The bear side of the market is very little in evidence, the prevailing opinion that the war in Europe will last much longer than at first thought, lends much support to the belief that American wheat will be much in demand for the coming year, at least. Early this week the activity among buyers indicated that the consumption here and abroad was fast catching up with stores, since the farmers who hold wheat are not selling because they have good reasons for believing that a better market will prevail later. In this country, too, the flour bins had been allowed to get empty, as millers thought they would be able to fill them again with cheap wheat because of the big crop, but the war put this amiss and now the condition adds to the strength of the bullish side of the market. Mills are running full capacity and orders are piling up. One year ago the price for No. 2 red wheat on the local market was 92½¢ per bushel. Quotations for the past week are:

	No. 2	No. 1	Red.	White.	Dec.
Wednesday	1.14	1.13½	1.19		
Thursday	1.14	1.13½	1.19		
Friday	1.10½	1.10	1.15½		
Saturday	1.12	1.11½	1.17½		
Monday	1.15½	1.15	1.21		
Tuesday	1.14	1.13½	1.19½		

Chicago, (Sept. 1).—No. 2 red wheat \$1.13½; Dec., 1.14½; May \$1.21½.

Corn.—Recent rains have greatly benefited the corn crop and the improvement has given the market an easier tone. Quotations have, as the result, shaded off despite the advancement noted in wheat and oats. Increased receipts and promise of liberal deliveries in the immediate future has aided bears to hold figures down. One year ago the price for No. 3 corn was 76½¢ per bushel. Quotations for the past week are:

	No. 3	No. 3
	Mixed.	Yellow.
Wednesday	84	86
Thursday	84½	86½
Friday	84	86
Saturday	84	86
Monday	83	85
Tuesday	81½	83½

Chicago, (Sept. 1).—No. 2 corn 80¢@80½¢; December corn 72½¢ per bu; May 74c.

Oats.—This grain has followed wheat. The advance amounted to about three cents for the week. The disappointing yields being reported by farmers, and the strong foreign demand for the grain are the two important factors in advancing values. The call from abroad is not likely to cease and this will force many to accumulate stock for future needs. Dealers seem to be looking for better prices and farmers are not selling freely. One year ago the price for standard oats was 43¢ per bushel. Quotations for the week are:

	Standard.	No. 3
	White.	White.
Wednesday	49	48½
Thursday	50½	50
Friday	50	49½
Saturday	50	49½
Monday	51	50½
Tuesday	51	50½

Chicago, (Sept. 1).—Standard 49¢@50½¢; Dec., 51¼¢; May 54½¢ per bushel.

Rye.—An advance of 10¢ was made last week. Demand is steady and the supply limited. No. 2 is quoted at 95¢ per bushel.

Cloverseed.—Although prices have fluctuated, present figures are steady with last week. Offerings are light. Prime spot \$10.75; October and December \$11; alsike sales were made at \$9.25. At Toledo prime cash is \$10.85; October \$10.87½; December \$10.97½ and September alsike \$9.25.

Beans.—Prices 10¢ higher and the market firm. Immediate and prompt shipments \$2.75 per bu; October \$2.53. Chicago.—Prices steady and trade moderate. Holders are firm. Pea beans, hand-picked, choice, are quoted at \$3; common at \$2.75@2.85; red kidneys, choice \$3.75@4.25.

Timothy Seed.—Prime spot \$2.95 per bushel, or 20¢ higher.

Alfalfa Seed.—Prime spot \$9.75.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent \$6.25; second \$5.65; straight

\$5.35; spring patent \$6.50; rye flour \$5.25 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$27; standard middlings \$30; fine middlings \$32; cracked corn \$36; corn and oat chop \$31 per ton.

Hay.—Carlots on track at Detroit are: New, No. 1 timothy \$16.50@17; standard \$15.50@16; No. 2, \$14.50@15.

New York.—Market is steady. No. 1 timothy \$22.50; No. 3 to No. 2, \$18@20.50.

Chicago.—Demand light and offerings large. Choice timothy quoted at \$16.50@17 per ton; No. 1, 14.50@15; No. 2, \$13@14.

Straw.—Steady. Rye \$8@8.50; oat straw \$7.50@8; wheat straw \$7@7.50 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—Market active, with prices unchanged. Extra creamery 30¢ per lb; firsts 28¢; dairy 20¢; packing stock 19¢.

Chicago.—The market is quiet with prices steady and unchanged. Extra creamery 30¢; extra firsts 28½¢@29¢; firsts 26@27½¢; seconds 24@25¢; packing stock 21@21½¢.

Elgin.—Bids of 30½¢ were made but holders asked 31¢. No sales made.

New York.—The market is firm with prices ½¢ higher. Creamery extras 31½¢@32¢; firsts 28½¢@31¢; seconds 26@28¢.

Eggs.—Market is steady with prices slightly higher. Fresh stock sells at 24¢ per dozen.

Chicago.—Market is easy with the prices slightly higher. Offerings are more liberal. Miscellaneous lots, cases included, 22@22½¢; ordinary firsts 20½¢@21¢; firsts 22@22½¢.

New York.—Market is firm with prices on fresh stock higher. Fresh gathered extras 29@31¢; extra firsts 27@28¢ per dozen; firsts 25½¢@26¢; seconds 24@25¢.

Poultry.—Market quiet with prices on broilers lower. Other prices are unchanged. Live broilers quoted at 16¢ per lb; hens 14@16¢; ducks 14@15¢; young ducks 15@16¢; geese 11@12¢.

Chicago.—The market steady with prices unchanged. Demand for fowls good. Receipts of springs are very heavy. Quotations on live are: Fowls 15¢; spring chickens 16¢; ducks, good stock 12@14¢; guinea hens, per dozen \$2@4; spring geese 12@13¢.

FRUITS AND VEGETABLES.

Fruits.—Pears \$3.50@4 per bbl; plums \$1@1.25 per bushel; Champion grapes 13@14¢ per 8-lb. basket; Moore's Early 15@16¢; peaches, Elberta, choice \$2@2.25.

Chicago.—Elberta peaches \$1.50@1.75 per bu; Bartlett pears \$2@3 per bbl; Seckel \$2.50@3.50; grapes 12½¢@13½¢ per 8-lb. basket; Transcendent crab apples \$3 per bbl.

Vegetables.—Home-grown cabbage, \$1.25 per barrel; new beets 65¢ per bushel; radishes 10¢ per dozen; home-grown green corn \$1@1.10 per sack; leaf lettuce 10¢ per lb; green beans 75¢ per bu; wax beans 75¢ per bu; carrots 75¢ per bu.

Apples.—Supply is liberal and demand not very active. Wealthy \$1 per bu; other kinds 50@75¢.

Chicago.—The feeling is easy. The large supply makes selling hard. Common stuff and that in baskets especially hard to sell. Duchess \$2@2.25; Wealthy \$2.50@3.25; Strawberry Pippin \$3@3.50; Maiden Blush \$2.50@2.75.

WOOL.

Increased strength prevails in wool quarters. A widened demand has made manufacturers more anxious and buying at Boston the past week exceeded that of any previous week for a long time past. Imported woolen goods are diminishing because of the war and domestic makers must supply the shortage. All wools are included in the calls, fleeces are becoming more popular because of their limited stores. Boston quotations for Michigan unwashed delaines 27@28¢; do. combing 23@29¢; do. clothing 23@26¢.

GRAND RAPIDS.

Eggs are firm and higher, with the dealers quoting 21@22¢ to the trade and asking 25¢ for the best candled stock. Dairy butter is quoted at 22¢. Apples, plums, grapes and pears are coming in more liberal quantities and while quotations have wide range, depending on quality, these figures give some idea of this week's market: Apples 40¢@51¢; plums 75¢@1.25; pears \$1; grapes \$1.25@1.50 per dozen. The potato market varies from day to day, according to offerings, but is around 70¢. Muskmelons are in liberal supply this week, with the price around 80¢ per bushel. Local mills were quoting \$1.05 for red and \$1.04 for white wheat Tuesday, an advance of 4¢ over Monday.

DETROIT EASTERN MARKET.

The rain Tuesday morning kept a great many buyers away from the market and prices were easier as a consequence, there being a large number of wagons in. Tomatoes are offered liberally at from 40@65¢ per bu; apples, better grades, rule from \$1@1.40, and others 60¢@1; pears \$1@1.25; plums \$1.25@1.50; peaches \$1.50@2.50; melons 60@80¢ per bu; cucumbers 25@60¢ for large and 12@15¢ per hundred for small; corn 50@60¢ per bag; onions \$1@1.25 per bu; string beans 50@65¢; celery 20@25¢ per large bunch; loose hay is not coming in and the price is nominal at \$16@18 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

August 31, 1914.

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

Receipts here today as follows: Cattle 140 cars; hogs 80 d. d.; sheep and lambs 37 d. d.; calves 900 head.

With only 140 cars of cattle on our market here today, we had a good brisk and active market from start to finish, and while the top prices were not so high today as the past two weeks, the quality being considered, the cattle sold fully 15@25¢ per cwt. higher than last week. The best load of cattle here today was a load of plain, fat, grassy Canadas that topped the market at \$9.40. Had there been any strictly prime cattle here, they would have sold much higher. At the close of the market about everything was sold and the feeling was strong.

Hog trade on all grades was active with a fair supply. Mixed, medium, heavy and yorkers sold 5@10¢ higher, while pigs were in light supply and sold from 25@50¢ per cwt. higher than the close of last week. Quite a sprinkle of good weight hogs sold from \$9.60@9.75, while handy weights landed at \$9.85 generally. Pigs and lights \$9.50@9.75, as to weight and quality. Roughs \$8.25@8.50; stags \$7@8. Late market was strong, and with a good clearance, trade looks fairly good for the balance of the week.

The market was active today on lambs and sheep. Prices ten higher than the close of last week. Choice handy lambs selling mostly at \$8.75. We look for steady prices the balance of the week.

We quote: Spring lambs \$8.65@8.75; cull to fair \$6.50@8.50; yearlings \$6@7; bucks \$3@3.50; handy ewes \$5.50@5.75; heavy do \$4.75@5.25; wethers \$6@6.25; cull sheep \$2@3.75; veals, choice to extra \$12.25@12.50; fair to good \$10@12; heavy calves \$6@8.50.

Chicago.

August 31, 1914.

Receipts today...19,500 30,000 40,000
Cattle. Hogs. Sheep.
Same day 1913...18,421 31,563 37,332
Last week...43,955 113,462 148,366
Same wk 1913...51,691 153,142 133,678

Highest day of the year was shown in fat cattle Monday, a moderate supply balancing demand and choice to prime steers sold firm to 10¢ higher than the close of last week. Medium and plain grade natives opened slow with killers bidding lower, but later the bulk cleared full steady. Receipts included 6,000 range cattle, and the rangers had mean call selling 15@25¢ lower than last week's close. A new high market for the year and an August record was made in native trade, two loads of prime 1547-lb. steers from A. W. Bragg, of Illinois, selling at \$10.90, and two other loads of 1537-lb. Bragg steers made \$10.85. Other prime beeves made \$10.70 and a big crop of choice goods went upwards of \$10 with yearlings at \$10.25. Bulk of medium to good light and handy weight killers sold at \$8.75@9.60 and the grass steers down to \$7.50@8.25 for common to decent. She stock sold steady to strong on broad packer demand and it was a firm trade for feeder cattle at last week's advance.

Hog market advanced 5@15¢ over the close of the previous week on a brisk shipper demand and good packer action. Tops went at \$9.55, and bulk of the crop sold at \$9@9.40, only the rough hogs going down from \$8.85 with pigs at \$8@8.05 for fair to good.

Sheep and lambs had broad demand at steady rates with the close last week, the big decline of that period having put values on a worth-the-money basis and killers bought freely of the generous supply. Lambs topped at \$7.75 for rangers and natives at \$7.65 while good wethers went at \$5.75 and most of the native and range ewes brought \$5@5.35.

Horses sold with fair freedom most days of the past week and prices were practically unchanged. Late trade was quiet but on early days buyers were numerous. Receipts totaled 1,100

against 567 the week before, and 799 a year ago. High-class drafters made \$235@260, while 1,400-lb. cunks sold at \$170@180. The 1,100 to 1,300-lb. animals of medium to fair quality cleared at \$75@160, bulk making \$115@150.

CROP AND MARKET NOTES.

(Continued from page 197).

Wheat yielded fair; oats 30 to 70 bushels per acre. Many new silos are going up. Much wheat will be sown. Wheat \$1; oats 45¢; corn 86¢; potatoes \$2.25@2.35 per 150-lb. bag; timothy hay, loose, \$15 per ton.

Pennsylvania.

Crawford Co., Aug. 25.—Corn promises a good crop; potatoes fair; pastures are short. Oat crop light. Hay \$5@6 per ton. Hogs and other live stock bring good prices. Early and late crops of apples large. Eggs 24¢; butter 25¢; chickens 10¢; potatoes 80¢; fancy apples \$1.25 per bushel. The buckwheat looks fine. Farmers here are threshing and plowing for wheat.

Tioga Co., Aug. 24.—Rains timely. Potatoes improving and late ones are promising. Hay and oats were good. Fodder corn heavy and grain corn promises well. Wheat poor; rye will yield from 20 to 25 bushels. Buckwheat is good. There is a heavy crop of fruit. Stock in good condition. Turkeys and chickens have done well. Butter 28¢; eggs 26¢; corn \$1.05 per cwt; oats 55¢; hay \$12 per ton; hogs 9¢. Young hogs are plentiful. Milch cows a little easier in price.

Ohio.

Madison Co., Aug. 24.—While a number of small showers have fallen lately, the drought still continues in some sections. Corn will be light and potatoes are a failure. Cloverseed will be fair. Wheat averaged about 20 bushels and oats were poor. Farmers will not sell hay at any price. Fruit is very scarce, some few apples can be had at \$1 per bushel. Hogs are not so plentiful and are high. Cattle and sheep also high. Lambs are now being marketed at \$7@7.50. Wheat 90¢; corn 80¢; oats 37¢; rye 50¢; eggs 22¢. Horses are selling well at strong prices for this season of the year.

Highland Co., Aug. 27.—The drought has been broken by recent rains. Corn will be half a crop and potatoes are a failure. But little cloverseed to be hulled. Wheat averaged about 13 bu. per acre. Young hogs are plentiful, but feeding cattle are scarce. Apples are almost a failure. The pear crop is very light. Peaches are more plentiful, and selling from \$1.25@2. Old corn 90¢; wheat 90¢; hay \$15 per ton.

Columbia Co., Aug. 24.—It has been dry here, and plowing is slow work. Corn will be light and late potatoes are badly in need of rain. Threshing well along and wheat yielded well, while oats were poor. Apples and peaches are a fair crop but the market is slow. Live stock not being marketed, but prices are high. Wheat 85¢; oats 40¢; potatoes 80¢; butter 26¢; eggs 22¢.

Indiana.

Laporte Co., Aug. 26.—Fine heavy rains the past week helped out corn, potatoes and plowing. Corn has freshened up beyond the expectations of farmers. Farmers are busy plowing for wheat and alfalfa. Some corn is cut but since the rains the stocks have seemingly started growing again and will stand a couple of weeks longer. Late potatoes will make a fair crop if rains continue.

Wayne Co., Aug. 27.—Our severe drought is partly broken by recent rains. Corn is only fair and cloverseed promises an average yield. All fruit is scarce. Although pastures have been poor, stock is in fair condition. Little plowing has been done because of the dry condition of the soil. Wheat yielded from 15 to 25 bushels per acre and oats 25 to 35 bushels. Wheat 85¢; corn 75¢; oats 35¢; hogs \$8.75; chickens 12@15¢; eggs 20¢.

Illinois.

Marion Co., Aug. 26.—Corn is very poor crop. Have had very little rain this season. Until this week have had only light local showers. Potatoes, beans and all garden truck, clover seeding and oats a failure. Wheat averaged around 12 bushels; hay was a quarter of a ton to the acre. There will be some timothy and wheat sown on corn land as it has been too dry for plowing other ground. Hogs and cattle have been shipped out on account of lack of feed. Many silos are being put up and some are now being filled. No early apples and very few late ones. Fair crop of pears and peaches. Peaches \$1; hogs 8@8½¢; cattle 5@6¢; butter 25¢; eggs 20¢; hens 11¢; chickens 15¢; farmers are paying 90¢ for corn and 50¢ for oats.

Second weekly installment of the splendid serial, "WINSTON OF THE PRAIRIE," appears on page 190.

THIS IS THE LAST EDITION.

The first edition is sent to those who have not expressed a desire for the latest markets. The late market edition will be sent on request at any time.

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

September 3, 1914.
Cattle.

Receipts 1337. Market steady; cow stuff strong.
Best heavy steers \$8.50@9; best handy weight butcher steers \$7.50@8.25; mixed steers and heifers \$7@7.75; handy light butchers \$6.75@7; light butchers \$5.50@6.50; best cows \$6.50@7; butcher cows \$5.50@6.50; common cows \$4.50@5.50; canners \$3.50@4.25; best heavy bulls \$6.50@7; bologna bulls \$6@6.25; stock bulls \$5.25@6.50; feeders \$7@7.50; stockers \$6.25@7; milkers and springers \$4@9.

Roe Com. Co. sold Mich. B. Co. 2 bulls av 865 at \$6.25, 2 do av 1140 at \$6.50, 1 do wgh 680 at \$6, 3 do av 857 at \$6; to Kamman B. Co. 5 butchers av 664 at \$7; to Mason B. Co. 1 steer wgh 1010 at \$6.75; to Findlay 10 do av 630 at \$6.75; to Parker, W. & Co. 7 cows av 1000 at \$5.50; to Heinrich 23 steers av 923 at \$8; to Goose 2 bulls av 1075 at \$6.75, 4 do av 820 at \$6; to Mich. B. Co. 6 cows av 1030 at \$6.25; to Breitenbeck 6 do av 908 at \$5.50; to Rattkowsky 1 do wgh 1040 at \$5, 2 bulls av 885 at \$6.25; to Findlay 12 stockers av 603 at \$7, 9 do av 677 at \$6.85, 6 do av 673 at \$6.75, 1 do wgh 460 at \$6.50, 1 do wgh 750 at \$7; to Parker, W. & Co. 1 bull wgh 1650 at \$6.75, 2 cows av 890 at \$4.25; to Kamman B. Co. 14 steers av 855 at \$7.50; to Green 2 cows av 760 at \$5.10; to Rattkowsky 3 do av 1070 at \$5.75; to Grant 3 do av 747 at \$5.80; to Marx 2 steers av 1120 at \$7.75; to Applebaum 1 cow wgh 990 at \$5, 2 bulls av 670 at \$5.75.

Spicer & R. sold Schroeder 1 steer wgh 1080 at \$7.50, 2 do av 1075 at \$7.25; to Kull 2 butchers av 970 at \$6.50, 1 steer wgh 800 at \$7, 8 do av 926 at \$7.50; to Parker, W. & Co. 1 cow wgh 920 at \$4.50, 3 do av 1057 at \$6, 2 do av 1050 at \$6.25; to Newton B. Co. 5 steers av 864 at \$8; to Mich. B. Co. 1 bull wgh 1230 at \$6.50; to Rattkowsky 2 butchers av 925 at \$6.75; to Sullivan P. Co. 8 cows av 1020 at \$6.50, 2 steers av 810 at \$7.25, 4 cows av 1037 at \$6.35; to Goodwin 4 do av 1000 at \$4.90.

Bishop, B. & H. sold Parker, W. & Co. 1 cow wgh 990 at \$4.50, 1 do wgh 1040 at \$6.25, 1 bull wgh 1170 at \$6.50, 3 butchers av 875 at \$6, 1 cow wgh 1270 at \$7, 6 butchers av 990 at \$6.25, 1 cow wgh 1060 at \$6.25, 2 steers av 850 at \$7, 1 bull wgh 1250 at \$6.75; to Sullivan P. Co. 7 steers av 1031 at \$7.25; to Schneider 2 bulls av 820 at \$7.75; to Kull 3 steers av 870 at \$7, 1 do wgh 710 at \$7, 17 butchers av 773 at \$7.25; to Sullivan P. Co. 2 cows av 875 at \$7, 15 steers av 1027 at \$7.75, 3 bulls av 883 at \$6.15, 2 steers av 970 at \$8.25, 4 do av 767 at \$7; to Mason B. Co. 5 cows av 804 at \$6.50, 6 steers av 895 at \$7.75; to Parker, W. & Co. 1 bull wgh 1170 at \$6.50, 1 cow wgh 1180 at \$6.25, 1 do wgh 1330 at \$7, 1 bull wgh 1550 at \$6.50, 4 cows av 1107 at \$7; to Findlay 4 feeders av 837 at \$6.85, 11 stockers av 545 at \$6.50; to Mason B. Co. 4 steers av 902 at \$7.35; to Ratner 2 cows av 815 at \$4.75; to Greene 3 stockers av 617 at \$5.50, 14 feeders av 743 at \$7.40, 9 stockers av 544 at \$7, 5 feeders av 866 at \$7.15; to Reardon 12 stockers av 460 at \$6.50; to Thompson Bros. 2 bulls av 1230 at \$6.75; to Mills 20 stockers av 616 at \$6.75; to Hammond, S. & Co. 6 cows av 1033 at \$4.60; to Bresnahan 14 stockers av 717 at \$6.70, 8 do av 732 at \$7.

Haley & M. sold Newton B. Co. 4 bulls av 680 at \$5.75, 1 do wgh 1360 at \$6.50, 2 do av 720 at \$5.75; to Mich. B. Co. 2 cows av 970 at \$6, 3 steers av 1093 at \$8, 3 bulls av 823 at \$6; to Hammond S. & Co. 2 cows av 1090 at \$6.40, 3 do av 1120 at \$6.40, 1 canner wgh 700 at \$3.50, 1 do wgh 970 at \$4.25, 1 cow wgh 960 at \$6.50; to Kamman B. Co. 4 steers av 865 at \$7.75, 10 do av 831 at \$7.20; to Goose 2 butchers av 535 at \$5.75, 4 bulls av 967 at \$6.60; to Torrey 4 stockers av 437 at \$6.40, 5 do av 570 at \$6.50; to Breitenbeck 2 steers av 620 at \$6.50, 4 cows av 935 at \$5.25; to Reardon 2 feeders av 700 at \$7.50, 10 stockers av 587 at \$7.15, 10 do av 600 at \$7.25; to Bowersox 6 do av 686 at \$7.25, 4 do av 582 at \$6.85; to Sullivan P. Co. 6 cows av 1108 at \$6.35; to Cooke 10 steers av 890 at \$8; to Lachalt 4 butchers av 840 at \$7; to Hinrschleman 16 do av 716 at \$7.35; to Bresnahan 19 do av 637 at \$6.60.

Veal Calves.

Receipts 411. Market steady. Best \$11@12.50; others \$8@10.
Roe Com. Co. sold Mich. B. Co. 4 av 155 at \$11; to Newton B. Co. 1 wgh 180 at \$12, 1 wgh 190 at \$11.50; to Thompson Bros. 1 wgh 180 at \$7; to Rattkowsky 4 av 250 at \$10; to Thompson Bros. 6 av 130 at \$11.
Haley & M. sold Parker, W. & Co. 9 av 165 at \$11.50, 1 wgh 220 at \$11.50,

3 av 165 at \$11.50, 3 av 150 at \$11.50; to Shaparo 5 av 225 at \$11, 3 av 180 at \$11.50; to Thompson Bros. 5 av 155 at \$12; to Mich. B. Co. 2 av 185 at \$11.50.

Sheep and Lambs.

Receipts 3415. Market 25@35c lower than last week on lambs; sheep steady. Best lambs \$7.50@7.85; fair lambs \$6.50@7; light to common do. \$5.50@6; fair to good sheep \$4.50@5; culls and common \$2.75@3.50.

Haley & M. sold Thompson Bros. 45 lambs av 70 at \$8; to Parker, W. & Co. 40 sheep av \$5 at \$4.50, 15 do av 105 at \$4.75, 14 lambs av 75 at \$7.50, 10 sheep av 123 at \$4.75, 30 lambs av 60 at \$7.50, 10 do av 75 at \$7.75, 6 sheep av 120 at \$5.25, 7 lambs av 65 at \$7.50.

Spicer & R. sold Parker, W. & Co. 8 lambs av 55 at \$7.25; to Mich. B. Co. 29 do av 60 at \$7.50, 13 sheep av 105 at \$4.75, 8 do av 115 at \$4.75, 5 lambs av 52 at \$6, 36 do av 70 at \$7.50; to Parker, W. & Co. 44 do av 73 at \$8, 44 do av 65 at \$7.50.

Hogs.

Receipts 3924. Pigs \$9@9.50; others \$9.40@9.50; 10c lower.
Bishop, B. & H. sold Parker, W. & Co. 1500 av 170 at \$9.50, 315 av 170 at \$9.40.

Spicer & R. sold Hammond, S. & Co. 350 av 175 at \$9.50.

Haley & M. sold same 310 av 175 at \$9.50, 175 av 160 at \$9.40.
Roe Com. Co. sold Sullivan P. Co. 380 av 120 at \$9.50.

Friday's Market.

August 28, 1914.
Cattle.

Receipts this week 1044; last week 1394; market steady.

Best heavy steers \$8.50@9; best handy weight butcher steers \$7.50@8.25; mixed steers and heifers \$7@7.25; handy light butchers \$6.75@7; light butchers \$5.50@6.50; best cows \$6.50@7; butcher cows \$5.50@6.50; common cows \$4.50@5.50; canners \$3.50@4.25; best heavy bulls \$6.50@7.25; bologna bulls \$6@6.25; stock bulls \$5.25@5.50; feeders \$6.75@7.50; stockers \$6.25@6.75; milkers and springers \$4@8.00.

Veal Calves.

Receipts this week 442; last week 607; good grades steady, common grassers 50c@1 lower. Best \$11@11.50; culls \$8@9; common grassers \$6.

Sheep and Lambs.

Receipts this week 4223; last week 4223; market dull. Best lambs \$8; fair do \$7.25@7.75; light to common lambs \$6@6.50; yearlings \$6@6.25; fair to good sheep \$4.50@5; culls and common \$3@4.

Hogs.

Receipts this week 3076; last week 2205; market steady to 5c higher. Pigs \$8.75@9; others \$9.20@9.25.

ADDITIONAL CROP AND MARKET NOTES.

Missouri.

Nodaway Co., August 21.—We are having the most drouth in history; corn is drying up, with not more than half a crop; pastures and meadows are burned up; stock is not doing well, but everything is high priced. There is no potatoes and no garden stuff. Water is very scarce and all prospects are very poor; farmers are much disheartened.

Polk Co., Aug. 20.—Continued dry weather has injured the corn crop and pastures. A bumper crop of wheat and oats is being threshed. The dry weather will prevent seeding of a large wheat crop unless rains occur within a few weeks. Eggs 10c; hens 10c; springs 12c; hay \$12; baled straw \$5@6.

Vernon Co., Aug. 25.—We are having showers, which are a great help in plowing for wheat. There will be a large acreage of wheat put out; crops of all kinds have done fine this year. Chinch bugs have damaged the late corn some. Peaches have been an immense crop and are worth \$1 per bushel. Prairie hay is good but is considerable weedy. Live stock is scarce and high in price. Wheat 80c; corn 85c; oats 28c; hay \$8; hogs \$8.75; cattle \$4@8; butter 22c; eggs 17c; hens 12c; springs 13c.

Kansas.

Cowley Co., Aug. 25.—Corn is poor; lots of it being cut up. Potatoes a fair crop. Ground is very hard and not plowed for wheat. Wheat yielded from 20 to 35 bushels; oats 20 to 40 bushels; hay one and a half tons to the acre. Hogs and cattle are scarce. Prospects are not very good for apples, pears and peaches. Eggs 16c; butter 16c; hens and pullets 10½c; turkeys 10c; hogs \$8.50; cows and heifers \$3.50@6; wheat 80c; alfalfa \$10; corn 80c; oats 40c.

Nebraska.

West Centra Otoe Co., Aug. 24.—The weather is very dry here now; corn crop cut short on account of the drouth. Pastures are about all dried up. The wild hay crop is ready to harvest now and is very good. Potatoes are better than they have been for several years. Not many fields of clover seed to harvest but the crop is

well filled where cut for seed. Farmers are cutting down considerable wheat acreage for this fall. Not much fall plowing done yet, as the ground is so hard and dry. Wheat yield averaged from 10 to 20 bushels; several 30-bushel yields reported. Oats yielded from 40 to 60 bushels per acre and was of a very good quality. Hogs are scarce; quite a few cattle; apple crop is good. Corn 73c; wheat 82c; oats 30c; eggs 17c; cream 25c; chickens 11@12c; cattle \$60@80 per head.
Todd Co., Aug. 24.—Hay and grazing fine. Much grass is being cut. Cattle are all fat and milk flow is generous. Small grain all in the stacks. Yields promise well. Millet looks fine. Hogs \$7.80; wheat 79c; rye 45c; corn 60c; cream and butter 20c; eggs 15c; chickens 8½c alive.

Colorado.

West Kit Carson Co., Aug. 20.—Dry weather is drying early corn very fast. Some are beginning to cut for fodder. Early potatoes are good; late ones no good. Mexican beans are fine. Farmers will begin seeding as soon as they are through threshing. Some discing done now. Hogs are scarce. All live stock in good condition. Farm sales beginning. Butter-fat 23c; eggs 16c; wheat 65c; sugar \$8.50 per cwt.

Idaho.

Power Co., Aug. 21.—The potato crop in this county is rather light. There are few beans raised but those that I have seen are doing pretty well. The farmers are harrowing to a great extent; seeding will begin soon; practically all the harvesting is done, and threshing is well under way. The second crop of alfalfa is being put up at present. The fruit crop is not very heavy this year. Peaches \$1.25 per bushel; wheat \$1.10 per cwt; eggs 22½c; flour \$2.30 per cwt.



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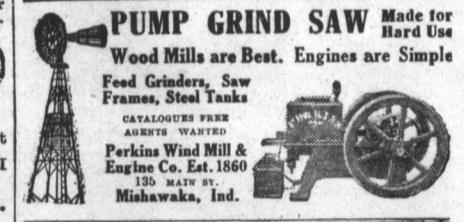
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That has been our guaranty for 42 years. A Regulator with such a record is worth asking for and insisting that you get it and none other.

PRATT FOOD COMPANY
PHILADELPHIA CHICAGO TORONTO

Poultry and Bees.

MEDICINE CHEST FOR POULTRY MEN.

The article, "Poultry Diseases and Their Treatment," in the Michigan Farmer for July 25, 1914, is an exceedingly interesting and valuable one for the practical poultryman, and although Mr. Marcano virtually says that the ax is the best cure for most of the poultry diseases, yet some of them may be cured by applications of medicine. No poultry keeper believes in drugs or dosing hens continually, yet accidents "will happen in the best of regulated hencoops," and there are a few remedies which should always be kept on hand. A simply constructed medicine chest is desirable. Of course, it must be understood that medicine is not supposed to, and will not take the place of sanitation. Whitewashing the interior of the henhouse twice yearly and spraying the roosts every 10 to 14 days with carbolyzed kerosene (1 to 3) should not be disregarded.

A Convenient Chest.

A drygoods box may be made into a chest which will serve the purpose by putting hinges on one side. If the door is fastened shut with a hook, it will never be found open, for it takes a pretty clever hen to unhook this door, while occasionally a biddy will learn to fly up onto a button and thus unlock the door.

First of all, the chest should contain a good sharp ax to be used on all hens afflicted with any incurable disease. Next there should be a good supply of vaseline for use on frozen combs, wounds, and sores. A bottle of Douglas mixture for tonic should also be included. This is made by dissolving one-half pound sulphate of iron, in a gallon of water and adding one ounce of sulphuric acid. The resulting clear liquid is one of the best hen tonics that the poultry keeper can use and is used in the proportions of one pint to a pail of water. Often times ginger and red pepper in small quantities are used in the mashes as a stimulant, so a quantity of each of these should be found in the chest. While charcoal acts medicinally, some poultrymen regard it more as a food and it should be fed liberally—more will be needed than could possibly be gotten into the chest. There should also be about a half-pound of potassium permanganate. This is one of the finest internal disinfectants there are for fowls. A few crystals may be dropped into the drinking water each time a new supply is given. Peroxide of hydrogen is also indispensable in treating poultry wounds and in stopping blood flow. The brooders and incubators will need kerosene, while a quantity of tincture of iron should be kept on hand, to be used as a tonic in the drinking water.

An Easily Made Lice Powder.

Besides the remedies enumerated above, a box of lice powder completes the list of remedies to be used on ordinary cases. This powder is made as follows: Three-fourths of a pint of crude carbolic acid, is thoroughly stirred with two and one-half pounds of plaster of paris. The lumps may be pulverized by forcing them through a sieve. Now the pulverized mass is put out to dry, after which it is put in a bottle and tightly corked. The stock mixture will stay effective indefinitely. It may be used by making nail holes in the bottom of a tin can and the can used as a shaker. The chicken is held by both legs with the head down, and in this position the feathers fall outward from the body. This allows the powder to work down to the skin.

Then, granting that the ax is the

best remedy for most diseases of poultry, the poultryman's chest will contain the following: Ax, vaseline, bottle of Douglas mixture, ginger, red pepper, potassium permanganate, peroxide of hydrogen, tincture of iron and a box of lice powder—all cheap, yet effective remedies.

Ingham Co. I. J. MATHEWS.

A VILLIAN OF THE CHICKEN YARD.

Most destructive of chicken life, and yet the most easily captured, is the weasel. It will work in darkness or light, and has no idea of economy in regard to its prey, but seems to stay for the sake of the work itself. One would say, if it were warm blood or flesh that it desires, it would take more time for its eating and less for slaying. A weasel has been known to hunt and kill 30 chickens running in the grass, all within an hour or two. Within a radius of 40 rods my neighbor and myself have lost more than 100 chickens, by weasels.

The balm for healing the wound was the capture of four of them, and the work of destruction has ceased. Destroying four weasel lives could in no way restore the chickens, but it restored considerable peace of mind during the day and rest at night. As I said before, the weasel is easily captured. If one can be on hand when it has begun to kill chickens, just take one warm chicken, if still able to peep the better, suspend it a few inches from the ground and set a steel trap directly beneath. In reaching for the chicken it will be quite apt to release the trap spring, and thus bring its liberty to an end. We caught two in this way, one was trapped in a woodchuck burrow, and one was pinned to the ground with a piece of board while reaching for a chicken recently killed.

If bloodthirsty, a weasel is very bold, but when filled with blood or meat it spends a day or two dozing, usually in a woodchuck burrow. In either case, it is easily captured. It will pay to be a little thorough in hunting down these animals, for there is no lack of thoroughness on their part to damage the chicken flock.

New York. C. M. DRAKE.

STOPPING ROBBER BEES.

If through careless handling, or from any cause, robbing is started, I think the best thing to do is to throw a sheet over the hive. After a short time this should be raised so as to let the robber bees out which have collected on the underside, and the bees from the colony which have been shut out go in. Replace the sheet for another half-hour, then remove it and put a handful of dry grass or hay over the entrance, and on top of this a handful of wet hay. This will allow them to dwell in peace for the rest of the day, as robbers do not like to crawl through wet hay, unless there are some coming out loaded with honey. These you have stopped with the sheet before the hay was put before the entrance.

KEEP DROPPING BOARDS CLEAN.

In order to keep the droppings boards in a sanitary condition, dry muck or woods earth should be spread upon them immediately following each cleaning. This will absorb the moisture which might otherwise go to waste. All the litter from the pens should be carefully swept up at intervals and spread with the purer product. It is all worth saving and, in fact, is usually more than half manure anyway.

POULTRY.

PINE CREST WHITE ORPINGTONS 3 and 4 months old, pullets and cockerels, few yearling hens. Get a start, now. The Willis Hough Pine Crest Farm, Royal Oak, Mich.

PLYMOUTH Rock cockerels 5 to 11 lbs., according to age, hens 5 to 8 lbs., 15 eggs \$1; Mammoth Bronze Tom Turkeys 8 to 35 lbs., according to age. Price \$8 to \$25, 10 eggs \$3. A. E. ORAMTON, Vassar, Mich.

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Barred Rocks—All prize winners and breeding stock, at half price. Won 20 prizes last winter. W. C. COFFMAN, R. No. 6, Benton Harbor, Mich.

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Government Farmers' Wanted—Examination Good Salary. Write OZMENT, 17-F, St. St. Louis, Mo.

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

Cow Gives Bloody Milk.—I have a cow about five years old that gives bloody milk from one quarter of udder. I have applied home remedies which appeared to give temporary relief. J. G. D., Crystal, Mich.—Apply one part tincture of arnica and 15 parts water to affected quarter three times a day. Perhaps she bruises her udder, and if so you may be able to ascertain the cause and remove it.

Cow Coughs.—I have a cow that has a cough and I would like to know what to give her. B. H. C., Marcellus, Mich.—Mix 1 oz. of guaiacol in 15 ozs. of raw linseed oil and give her 1 oz. at a dose three times a day. Rub her throat with camphorated oil once a day.

Warts.—I have a mare that has seven warts; some of them are flat, others resemble tumors. Our local Vet. cut one out but it came back again. H. J. B., LeRoy, Mich.—Every one of the warts that has a well defined neck should be cut out completely, but all the warty tissue should be removed, then apply tincture of iron to edges a few times, then apply one part iodoform and nine parts boracic acid daily. Apply lunar caustic to flat ones once a day or you might apply acetic acid or cider vinegar once a day.

Distemper.—We have a four-year-old colt that has had distemper for the past six weeks, and although he is some better, he still coughs. At no time has he had much of a discharge from nose. C. B. C., Elk Rapids, Mich.—Mix together equal parts of powdered licorice, ground ginger and gentian and give him a tablespoonful at a dose twice a day. Apply one part turpentine and three parts camphorated oil to throat every day or two.

Knee-sprung.—I would like to know what can be done for a horse that is knee-sprung. A. H. H., Bridgman, Mich.—Apply one part turpentine, one part aqua ammonia and four parts olive oil to back tendons every day or two. Kindly understand the natural conformation of your horse may predispose him to tip forward on his knees.

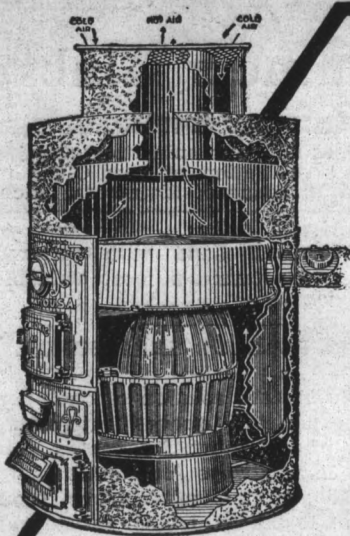
Barren Mare.—I have a pacing mare 20 years old that I would like to breed. She has been in heat once this summer at which time she refused horse. H. M., Saginaw, County, Mich.—Either your local Vet. or owner of stallion should dilate opening in neck of uterus. A forced service might have the desired effect of bringing her in heat, or she may come in heat regularly, but show it little.

Sweeneyed Hip.—I have a mare that had a colt last spring at which time she injured left hip; since then she has favored this quarter and travels with a hitch and very often rests leg when standing. J. B., Twining, Mich.—Apply one part tincture cantharides, one part turpentine, one part aqua ammonia and six parts raw linseed oil to hip once a day.

Shoe Boil—Elbow Tumor.—My horse has what I call a large shoe boil which came on him some time ago. This bunch is the size of my two fists and I have applied hot water, also cold water, and also an ointment. How can I manage it so that he will not bruise this bunch? W. B. R., Muskegon, Mich.—Stabling a horse of this kind in a narrow stall is bad, for when they lie down the shoe is pretty sure to come in contact with elbow, which, of course, is apt to bruise it. A roll should be applied to pastern much the same as if surrounded by an auto tire to protect tender elbow. These are usually made out of light leather and stuffed with curled hair, then buckled around pastern. Another plan is to pad heel of foot or apply protector made out of sheep skin with wool next to body. When a horse is stabled in box stall they are less apt to bruise elbow than if kept in open stall. Apply shoe with rubber pad or without calk or sharp cutting edges and apply equal parts tincture of iodine and spirits of camphor to bunch every day or two and later in season it should either be opened up freely or cut out.

Ringbone.—One of my work horses has a hard bunch on fore part of

(Continued on page 203).



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Here is a new furnace—"The Pipeless Wonder"—requires neither flues nor pipes in walls or cellar. Guaranteed to keep the house warmer and cozier for less money than any other system. No more carrying coal upstairs and ashes downstairs. No floor space wasted for stoves. Makes the farm home as comfortable and cozy as the steam-heated flat.

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I don't ask you to risk one penny. All I ask you to do is to fill out the coupon below—send no money. I'll feed all your stock 60 days before you pay. Why go on wasting feed—losing profit—inviting disease into your herd and risking terrible losses, when I offer to rid your stock of worms or no pay? Fill out the coupon—mail today.

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Sal-Vet is the wonder-working, worm-destroying, medicated salt you have heard and read so much about. It not only destroys the worms that cause 90 per cent of all live stock diseases, but it aids digestion, sharpens the appetite, relieves constipation and makes all farm animals thrive better and grow into profit faster.

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Just tell me how many head of stock you have and I will ship you enough Sal-Vet to last your stock 60 days. You pay the freight charges when it arrives—and feed the Sal-Vet according to directions for 60 days. At the end of that time report results. If Sal-Vet has not done all I claim, I'll cancel the charge—you won't owe me a penny. Send the coupon now.

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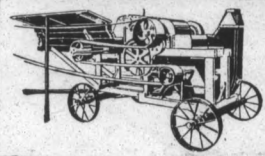
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Farmers' Clubs

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."

FARMERS' CLUB EXPERIENCE.

Sometimes the relation of one's personal experience proves interesting and helpful reading for others. At least I have always found this to be the case and in hundreds, yes, thousands of instances, I have gained valuable and helpful ideas from reading the experiences of other men. Quite generally these published experiences are confined to the discussion of concrete problems relating to some phase of farm management or some method of doing farm work, but it is the idea that experiences of a more general character, relating to our relations with other farmers and farm families in our home neighborhoods, might be of equal interest and benefit to many readers that I have decided to record my experience bearing on the above topic.

As a young man I began farming with small capital and a very considerable debt, and upon land that was not the best at the start, and which had lost much of its virgin fertility by injudicious management. My wife was a willing, but not too strong co-worker in the task which confronted us, and the first half-dozen years of our married life were spent in unbroken toil, with scant social relations outside the circle of our immediate families, and almost no recreation at all. While this seemed to be the sensible course to follow, I have since come to see that it was a mistaken idea, as it was wholly unnecessary, and it is with the idea of keeping other young people from the making of similar mistakes that I have been constrained to write this experience.

During that time there was a live Farmers' Club in our township. It was one of the earlier organizations of the kind in the state and at once became affiliated with the State Association. But I lived on the extreme edge, rather than near the center of the territory from which its membership was drawn, and as no one gave me a special invitation to attend any of the Club meetings, a natural reserve which was perhaps coupled with a degree of mistaken pride, prevented me from making an effort to affiliate myself with the organization.

I recall one incident in particular which well illustrates the deep-seated nature of this difficulty, which I will relate for the reason that I believe my own idiosyncrasy in this connection is a somewhat common human fault and its relation may possibly prove of indirect benefit to others who may be similarly situated. The Farmers' Club had been instrumental in getting up a farmers' institute, which was held at a centrally located church about five miles from my home. This was the first farmers' institute that I recall being held in the community and I very much desired to attend, particularly because several speakers of note had been secured for the occasion, among them the then governor of the state. At that time I had never even seen a governor and shared the natural awe of the unsophisticated toward such a dignitary, as well as a natural curiosity regarding his appearance and personality. But I didn't go. Although it was a public meeting, I held tenaciously to the idea that it was a Club affair, gotten up for Club members, and wouldn't attend it without a special invitation, which, of course, I didn't get. Although more than 20 years have elapsed since that momentous date, I distinctly recall my thoughts and impressions while engaged with the task at hand when I should have been at the institute, which chanced to be repairing the lock on the kitchen door.

(Continued next week).

Grange.

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

FOUR-COUNTY PICNIC A SUCCESS.

Some 2,000 Grangers from four counties, Ionia, Kent, Ottawa and Montcalm, gathered at Lowell, Wednesday, August 19, for their annual rally and picnic at Island Park. Following a parade of floats, autos and other vehicles, with several hundred of these in line, a picnic dinner on the island and a fine program was given.

The address of welcome was given by S. P. Hicks, of Lowell, who said the people of his town were proud to have this Grange gathering, which stood for mental, social and industrial improvements. Lowell has put on her good clothes and the town belongs to the Grangers for the day.

Response of welcome was given by Mayor Ellis, of Grand Rapids, who in part said: "Everyone has some ambition to make the future better, and the farmers are the most satisfied people because most farmers own their own homes. They have learned the great lesson of fraternalism as men, and stand firm for making the world better."

Ashley Berridge, of Montcalm county, said he was glad his county was included in this great picnic, and that due to the hospitality of the people of Lowell, they felt more than repaid for coming. The closer friendship these meetings caused was also commented upon.

C. M. Freeman, National Grange Secretary, then told of his life work in the Grange with the boys and girls; his personal experience in teaching them that farm life was worth living. He said that New York state was the banner state in Grange work but he hoped to see Michigan stand first soon.

J. C. Ketcham, of the Michigan State Grange, congratulated Lowell citizens for their hospitality, and gave a word of appreciation to the different committees for their efforts in arranging so great a picnic. His address was to the voters and about the things they could bring about through the Grange and legislation; that we do not want to vote for an unlimited amount to build good roads, but we do want a national primary law and a guaranty bank deposit law, and a market commission bill should be passed to help the farmers.

Ex-Master of the Michigan State Grange George B. Horton, and Mr. Landsman, of Grand Rapids, who spoke in place of Ex-Gov. Osborn, besides several others from the different counties concluded speech making. The recitations, readings and music were exceptionally fine.

The tug of war between South Boston and Graton Granges, which concluded the day's doings, was won by the former Grange.

AMONG THE LIVE GRANGES.

A Good Crowd in Spite of the Hot Weather.—Although Tuesday, August 18, was one of the hottest days this summer, over a hundred Grangers attended the meeting of Kalamazoo County Pomona Grange with Galesburg Grange, where an all-day session was held in their hall. The forenoon was devoted to a business meeting. Reports from the various Granges in the county were given and it was found that the Galesburg Grange had the largest number of members, 168 in good standing. After these reports, balloting for four candidates for the fifth degree took place. Then dinner was served in the Congregational dining-room by the ladies of Galesburg Grange. The candidates who had been balloted on in the forenoon were given the degree work the first thing after dinner. Then followed the afternoon program which was open to the public.

(Continued from page 201).

pastern about one and one-half inches above hoof, which causes him to limp. Whatever it is it has been gradually growing for the past two years. M. F. D., New Baltimore, Mich.—Apply one part red iodide of mercury and four parts lard every ten days. But remember, it is important to give the animal rest.

Chronic Stifle Lameness.—I have a 12-year-old mare that has what our local Vet. calls stifle lameness and he says there is no cure for this trouble and advises me to destroy her. A. S., Vassar, Mich.—Many cases of stifle lameness are incurable and when the joint is stiff the animal is, of course, of no value. You had better be guided by your Vet., if you consider him competent to make a correct diagnosis. The best application you could make would be one part red iodide mercury, one part powdered cantharides and eight parts lard every ten days.

Noisy Cow.—I have a cow that calved three weeks ago without any trouble, but since then she bellows and bawls almost constantly. So far as I can tell, she is in good health. J. A., Saginaw, Mich.—Give her 1 dr. of ground nux vomica, 1/2 oz. ground gentian at a dose three times a day, and breed her. If she is in heat continually, it is possible that she will have to be spayed before she will cease making noise.

Acute Indigestion.—I have a six-year-old cow that came fresh last spring, but lately she has fallen off in milk yield and is getting quite thin. About three weeks ago she had a sick spell at which time she only gave one quart of milk at a mess, a few days gave four, but now has fallen off again. She has fair pasture but it is low land and swamp with quite a little brush. C. W. R., Birmingham, Mich.—Give your cow a teaspoonful of salt, a tablespoonful of ground gentian, 1 dr. of ground nux vomica and two tablespoonfuls of baking soda at a dose in feed night and morning.

Inbreeding.—I would like to know if it would do to breed a Percheron horse to a half-sister of his mother; both are registered and would the colt be eligible to registration? A. J. A., Tekonsha, Mich.—I believe it would be all right to mate them if both are sound and rugged animals; furthermore, the produce of registered sire and dam must be eligible to registration.

Partial Loss of Power.—We have a sow that farrowed eight nice pigs in May; shortly after we took the pigs from her, the last of July, she lost the use of her hind quarters, but is gradually regaining use of them. We would like to know what the trouble was and the probable cause, and if it would be safe to breed her again. E. W. M., Cheboygan, Mich.—Feeding an unbalanced ration, lack of exercise, keeping hogs in a clean dry place and not giving sufficient exercise is doubtless the most common cause of loss of power of hind quarters. Corn is not a balanced ration for hogs; it has a tendency when fed to produce fat, rather than bone, muscle and tendon. Feed oats, oil meal, tankage and grass and exercise her every day. After you breed her, notice that she has exercise daily.

Barren Cow.—I have a cow that I have bred several times, but she fails to get with calf. G. W. A., Scottville, Mich.—Dissolve 2 ozs. of cooking soda in three pints of tepid water and inject her when she comes in heat. Do not breed her closer than four or five hours from the time you injected her.

Acute Congestion.—I turned my colts out to pasture Sunday morning, and noticed nothing wrong with either of them; about ten o'clock it started to rain and I put them in. I soon noticed that one was wrong, stood with right fore foot pointed in advance of body; the kidneys and bowels were not active, and there was considerable tenderness in glands of throat. The colts eat and drink all right, but move about rather stiff. Colts walk with sprawling gait and show symptoms of founder. G. G., Rapid City, Mich.—Stand colts in wet clay or apply wet clay to feet, keeping them moist most of the time and apply spirits of camphor to tender glands twice a day. Apply lanolin to fore hoofs once a day and give 30 grains of powdered nitrate of potash at a dose twice a day.

Acute Indigestion—Colic.—I have a Percheron mare 12 years old that has had frequent sick spells, which come on suddenly, causing her considerable pain, followed by pawing and rolling. Some of the attacks have lasted four or five hours and I forgot to mention that she usually bloats. C. A. L., Bendon, Mich.—Careful feeding and watering will come nearer preventing future attacks than giving her drugs. Give her a tablespoonful of cooking soda, a tablespoonful of ginger and a teaspoonful of hypo-sulphite of soda at a dose in feed two or three times a day. She should be exercised daily.

101-Reg. Holstein Cows-101

To be Sold in 5 hours (1 every 3 minutes.)

Friday, Oct. 23, at 12 m.

AT THE Sale Pavilion, Howell, Mich.

Consigned by the Howell Sales Company of Livingston Co.

Daughters of 30-lb. Bulls bred to 30-lb. Bulls, A.R.O. cows and daughters of A. R. O. cows bred to 30-lb. sires. These cattle have been selected from the herds of 24 prominent breeders of Livingston county and are a fair representation of their stock. The object of this sale is to give the breeders of the state an opportunity to buy representative Livingston County Holsteins at a public auction and every effort is being made to present the finest lot of young cows ever offered at a Howell sale. Sold without reserve at your own price. Catalogs Oct 1.

A. RALPH EASTMAN, Sec. COL. D. L. PERRY Auc. S. T. WOOD, Ped. Expert.

ONE HUNDRED HEAD OF Stock Cattle Steers and Heifers ready for sale at once. Five cars of two-year-old steers will be ready for sale Oct. 15, 1914. J. B. GARDNER, Cadillac, Michigan. L. B. 437.

Purebred Collie Pups. Dam dies all kinds of live stock and poultry. Sire will handle 2000 sheep perfectly. Pups from this superb mating \$10 each. G. A. Wigout, Watervliet, Mich.

Feeding Molasses

to your pigs is guaranteed to increase your profits 20 to 50 per cent. For prices and full particulars, write WATTLES & COMPANY, Box 13, Litchfield, Michigan.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN ANGUS

Bull calves and yearlings ready for service. Sired by Louis of Viewpoint II. Closely related to five Grand Champions—Brother, Sister, Sire, Sire's Brother and Grand sire. (International Grand Champion for three years in succession. Prices \$75 up. Will meet prospective purchasers either at Somerset, Addison or Addison Junction.

You are bound to get good calves from these bulls even with strongly dairy type grade cows. GEO. B. SMITH & CO., ADDISON AND SOMERSET, MICHIGAN.

ABERDEEN-ANGUS

HERD FOUNDED IN 1900. Strains represented consist of Trojan Ericas, Blackbirds and Frides, only. Black Quality No. 1, a bull of rare individuality and merit, heads the herd. WOODCOTE STOCK FARM, Ionia, Mich.

MILO D. CAMPBELL. GHAS. J. ANGEVINE.

BEACH FARM GUERNSEYS

We have for sale imported and home bred Bull Calves, guaranteed free from tuberculosis. They are fine and have had the best of care. Send for sale list, or what is better for both parties, come and see them.

CAMPBELL & ANGEVINE, Coldwater, Mich.

Buy Guernseys for Profit

Your investment in GUERNSEYS will return a larger profit than that from any other dairy breed. WRITE FOR LITERATURE. Guernsey Cattle Club, Box 25, Peterboro, N.H.

Guernseys—Famous May Rose Strain. A select herd. Tub. Tested. Several A. R. O. Cows. J. K. Blatchford, Windermere Farm, Watervliet, Mich.

We have for sale a number of pure Guernsey cows, heifers and bulls, also Berkshire hogs. VILLAGE FARM, Grass Lake, Michigan.

HEREFORD BULLS 2 six months old 1 18 months old ALLEN BROS., Paw Paw, Michigan.

Holstein-Friesian Breeder—The best families of the breed represented. D. D. AITKEN, Flint, Michigan.

HOLSTEINS & BERKSHIRES—Stock guaranteed and priced reasonable. B. B. REAVEY, Akron, Mich.

THE THREE BEST HOLSTEIN CATTLE Poland China Hogs and S. C. White Leghorns. FOREST SIDE STOCK FARM, M. H. Chamberlain Jr. Prop., Romeo, Mich.

Very Choice Holstein Bulls At Farmers Prices. Long Beach Farms, Augusta, Kalamazoo Co., Mich.

Holstein Cows I have on hand 100 high grade Heifers, age 6 mo. to 2 3/4 yrs., lots of quality and in good condition. Also a fine selection of full matured cows. Arthur Birks, New Buffalo, Mich.

HOLSTEIN FRIESIAN CATTLE Bulls for sale, the kind that will satisfy or money refunded. JONES & LUTZ, Oak Grove, Michigan.

Holstein Calf—Full brother to the triplets (see Mich. Farmer March 10, 1914 issue), cousin to Pontiac De Nijlander. Maria McLanin, Redford, Mich.

FOR SALE—At reasonable prices Registered Holstein Friesian Young Sires of world's record breeding. HATCH HERD, Ypsilanti, Michigan.

I Will Buy and Sell Holstein Cattle on commission. Bull a specialty. Large acquaintance among the breeders. Bank references. Freeman J. Fishbeck, Howell, Mich.

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Breedsville, Michigan, Breeder of high class Registered Holsteins.

\$100 BUYS express paid, high record, registered eight months old HOLSTEIN BULL 25-lb. sire, King Segis and Hengerveld De Kol blood. RIVERVIEW FARM, R. No. 8, Vassar, Mich.

"Top-Notch" Holsteins. Extra large fine young bull, 3/4 white, born Oct. 4, 1913. Dam has official record of 29.40 lbs. butter in 7 days, 117.50 lbs. in 30 days. Sire's dam is a 22.64 lb. 4 yr.-old daughter of a 35.50 lb. cow.

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ROSE HALL PONTIAC MAHOMET, three years old, four-fifths white, a fine individual, bred right, is right and the price is right. He is by one of the best individual and best producing sons of King of the Pontiacs, and out of Nettie Mahomet Lyons De Kol, butter 23.79 lbs. from 531 lbs. of milk at 12 years old.

I am also offering Your Choice of Ten Cows from my entire herd. This is a chance to get the right kind of a bull and just such cows as you should have.

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Register'd Holsteins

Bull Calves \$50 to \$200.

An absolute guarantee with each purchase. CHASE S. OSBOEN, ADAM E. FERGUSON, Owners, L. M. HATCH, Supt.

Two Beautiful Holstein Heifers 4 and 5 months old, high class in every respect. \$135 each, \$250 for both, delivered free. ROBERT W. FAY, Mason, Michigan.

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MAPLE Lane Register of Merit Jersey Herd—Tuberculin tested by U.S. Government. Bull calves from cows in R. of M. test. Heifer calves whose dams, grand-dams, and great grand-dams are in the Register of Merit. IRVIN FOX, Allegan, Michigan.

JERSEYS—YEARLING BULL READY FOR SERVICE. Also bull calves. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

NOW IN SERVICE—A Son of the \$50,000 sire King Segis Pontiac Alcartra. GREGORY & BORDEN, Howell, Michigan.

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

HILL CREST JERSEYS See them at the fairs, Grand Rapids and Detroit. Wednesday, Sept. 9, is Jersey day at Detroit. S. B. WATTLES, Troy, Michigan.

JERSEYS—For list of stock for sale and Jersey facts write A. P. EDISON, Sec. M. J. C., 325 W. Bridge, Grand Rapids, Mich. If a breeder and a member of M. J. C. C. send list of stock for sale to the above.

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

Dairy Bred Shorthorns, A Few Females For Sale. J. B. HUMMEL, Mason, Michigan.

FOR SALE—A yearling Shorthorn bull, color red and little white. Write for pedigree and price. Wm. D. McMullen, 67 Madison St., Adrian, Mich.

Young Shorthorn Bulls And Oxford Down Yearling Rams for sale. H. B. PETERS, Burton, Michigan. R. R. Elsie.

\$500 buys two cows three and four yrs., one yearling heifer and two calves six months. A. A. PATTULLO, Deckerville, Michigan.

Shorthorns—Bulls and females, all ages. Tell just what you want. Also P. C. Hogs, Oxford Sheep. C. W. Cram, Sec. Cent. Mich. Shorthorn Ass'n. McBrides, Mich.

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IT PAYS TO BUY PURE BRED SHEEP OF PARSONS "The Sheppan of the East"

I sell and ship everywhere and pay express charges. I will start one man in each town. Write for club offer and descriptive price list. Oxfords, Shropshires, Ram-houlets and Felled-Delaines. PARSONS, Grand Ledge, Michigan R 1

RAMS—SHROPSHIRE OXFORDS AND HAMPSHIRE. Good strong well woolled fellows ready for business. Shipped to you without the money. Jan. 5 that fair. If so write ROPE KON FARM, Kinderhook, Michigan.

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Shropshire Yearling and Ram Lambs, large frames. Wool and Mutton type. Also O. I. C. swine. G. F. ANDREWS, Dansville, Michigan.

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FOR SALE—Reg. Shropshire Rams and Ram Lambs, also Ewes and Ewe lambs. Extra well covered with wool. M. A. BRAY, Okemos, Ingham Co., Mich.

HOGS.

Durocs & Victorias—A few extra Sept. Boars and bunch of Gilts for 1st of April farrow. M. T. STORY, Lowell, Mich., Citizens Phone 55.

ROYALTON BRED BERKSHIRES—Eight to ten weeks old, registered stock, \$6.00 and \$8.00. D. F. VALENTINE, Supt., Temperance, Michigan.

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BERKSHIRES Choice spring boars and gilts, priced to move quick. Farmers stock. ELMHURST STOCK FARM, Almont, Mich.

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Chester Whites—Reg. Bred Gilts—Orders taken for spring pigs and Collio pups. Holstein Bulls at Bargains. FAY B. PARHAM, Bronson, Mich.

Chester White Boars & Gilts—Ready to ship and sure to please, we offer the pick of our spring crop of pigs. Registration papers free. Thos. W. Eager, Mgr., The Osborne Farm, Area, Ill.

O. I. C.—Choice spring boars from A. No. 1 Stock. Pedigrees furnished. N. H. WEBER, Royal Oak, Michigan.

O. I. C.—Bred sows and spring pigs, large and growthy. Pairs and trios, not akin. Write your wants. GLENWOOD STOCK FARM, Zeeland, Mich.

O. I. C's All sold. Would be pleased to book your order for spring pigs. C. J. THOMPSON, Rockford, Michigan.

O. I. C's—Large boned, shipped on approval, long bodied kind. Serviceable boars. J. W. HOWELL, Elsie, Michigan.

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O. I. C.—Choice spring boars of March and April farrow. Prices right. JOHN BERNER & SON, Grand Ledge, Michigan.

O. I. C. Choice pigs two to four mos., the long bodied kind. Serviceable boars. ALVIN V. HATT, Grass Lake, Michigan.

O. I. C's—Growthy spring boars. Satisfaction Guaranteed. A. R. GRAHAM, FLINT, MICHIGAN.

O. I. C. SPRING PIGS—Have some extra good pigs. H. W. MANN, Dansville, Michigan.

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Spring Pigs and Yearlings From Prize-Winning Stock

Special Prices for 30 Days. Write, or better still, come.

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Duroc Jersey Boars of the large, heavy boned type, also spring gilts and July pigs for sale. Plum Creek Stock Farm, R. No. 1, Monroe, Mich.

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FOR SALE—A choice bunch of Poland Chinas, all ages, over fifty head to choose from. Prices right. OLYDE FISHER, St. Louis, Mich.

BUTLER'S Big Bred Prolific Poland Chinas. Grow big, keep easy, mature early, ready for market at 6 months. Why? Because we've bred them that way for more than 20 years. 50 big boned, long bodied, high class boars at farmers' prices. Buy one and make more money on your hogs. You can't get any better at any price. P. C. History Free, J. C. Butler, Portland, Mich.

LARGE TYPE P. C.—Largest in Mich. Fall pigs all sold, order a spring pig sired by the largest boar in the U. S., weight 900 lbs., 24 months old. Come and see. Expenses paid if not as represented. W. E. LIVINGSTON, Parma, Mich.

BIG TYPE POLAND CHINAS—Boar pigs ready for new homes. They are corks and immuned. WM. WAFFLE, Coldwater, Michigan.

of the big type. March and April farrow. The kind that please our customers. A. A. WOOD & SON, Saline, Mich.

LARGE styled Poland China Spring Pigs, older sows bred for fall farrow. Also Shorthorn Bull calves. ROBERT NEVE, Pierson, Michigan.

FOR SALE—A choice bunch of March and April boar pigs, a few herd headers. Prices reasonable. Satisfaction guaranteed. R. W. MILLS, Saline, Mich.

Mule Foot Bred sows, bred gilts and boar pigs, not related, for sale. Satisfactory factored. G. C. KREGLOW, Ada, Ohio

YORKSHIRE Swine—March & Apr. pigs ready to ship. Pairs not akin. College Princess and Cooks Bacon foundation stock. Geo. S. McMullen, Grand Ledge, Mich.

For Sale, Yorkshires—Gilts bred for early Sept. farrowing, also boars for fall service. WATERMAN & WATERMAN, Ann Arbor, Mich.

YORKSHIRES—Mature boars and sows. A fine bunch pigs, both sexes. Write for prices. OSTRANDER BROS, Morley, Mich.

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The large, long-bodied, prolific kind. Gilts bred for September and October farrow. A choice lot of spring boars and gilts. Prices reasonable. W. C. COOK, R. 42, Ada, Michigan.

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Open gilts and gilts bred for September farrow. Spring pigs either sex, pairs and trios not akin. Satisfaction guaranteed.

COLON C. LILLIE, Coopersville, Michigan.

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Ruthstein's Latest Triumph ADJUSTABLE LEATHER TAPS

SAVE
\$10 to \$20
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Make My "Steels"
INDISPENSABLE
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"Steels" mean All-day-comfort to Every Man or Boy. Can be worn from sun-up to sun-down.

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"Steels" with Adjustable Leather Taps can be worn at all times and places. They do not sweat the feet.

Health, Comfort and Economy Demand that You Wear "Steels" The Lightest — and Only Absolutely Waterproof — Workshoe

The World's Greatest Workshoe

Twelve years of untiring effort and the expenditure of a Fortune have enabled me to produce a workshoe that surpasses all others for Comfort, Lightness, Protection, Practicability, Service and Economy—Absolutely Waterproof under all conditions—in all seasons—from season to season—for town or country.

It cost more than a half a million in cash to bring My "Steels" to their present perfection and make this offer and announcement to you today. I recently spent one hundred thousand dollars to improve my "Steels"—make them more comfortable—improving every part of the shoe—and to increase my capacity to meet the tremendously increased demand. My latest TRIUMPH Adjustable Leather Taps—make my "Steels" the Only Practical, General Purpose Workshoe.

Saved Millions for Workers

My "Steels" have saved to workers more than twenty million in shoe expense alone, and many Millions more in doctor and drug bills—in loss of time from sickness or bad weather—because no man nor boy need fear to wear my "Steels" in the roughest storm—summer or winter—rain, snow, sleet, slush or mud.

Now, My "Steels" will save countless Millions more for the men and boys who see this advertisement—who will wear my "Steels."

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Here is the only all-the-year-around workshoe ever invented. The shoe for every season—Cool in Summer—Warm in Winter—Dry and Shapely—always. They never Harden nor Waterlog, Scald the feet, Warp, Twist, or Leak.

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My "Steels" are Foot-form-fitting—always keep their original shape. The Steel Sole is a Natural

Arch Support. Nothing to Rub nor Chafe. Sure prevention and relief for Corns, Bunions, Callouses, Chilblains, and all Foot Discomforts.

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The Adjustable Taps of my New Model "Steels" are of firm, solid, special Process Leather, firmly attached to the wonderful sole of thin, wear-resisting, springy steel that has made my "Steels" the World's Greatest Workshoe.

Leather Taps Instantly Replaced

Then, when worn, the Leather Taps are Instantly Removed—Instantly Replaced by anyone—at home. The cost of New Taps is small—but 40c, for a full set of better-wearing, more solid leather than is ever put into the best all-leather workshoes. They last three times as long as any other taps.

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Here—At Last—is the Ideal Shoe for every Man or Boy. Not alone for the Farmer—not alone for the Dairy, Stock or Creamery Man—the Fruit or Vegetable Grower—but for Everyone who Works or Plays—Indoors or Out—in City, Town, Village or Hamlet—Forest or Field or Range or Road or Pavement—on Mountain or Plain—in Factory or Mine—for Mechanic, Laborer, Soldier, Shopman, Sportsman—for every man who Does Things—for Every Worker.

My "Steels" stand Alone—Supreme—The Greatest and Best General Service Workshoe the World has ever seen.

"Steels" in All Sizes for Men and Boys

"Steels" run in same sizes as ordinary leather shoes and rubber boots—and in all heights. Sizes for Men 5 to 12; 6, 9, 12 or 16 inches high—for Boys, Sizes 1 to 4, 6 or 9 inches high.

You Must Try My "Steels"

You cannot begin to realize the True Value of my "Steels"—you cannot know the height of Shoe Comfort, Economy and Protection—until you try and wear my "Steels."

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The Easy, Light, Comfortable, Waterproof, Healthy Shoe for Boys. The "Knock-about" Shoe—the Sensible, Long-Wearing Shoe. The Greatest School—the Greatest Play Shoe—the Greatest All-around Shoe for REAL BOYS. No more Wet Feet. No more hot, heavy "arctics" or rubber boots. No more danger of colds or Sickness. Keep your feet "powder dry" in any kind of wet, damp, sloppy, snowy weather. My "Steels" are best to SHAPE YOUNG FEET and avoid the foot-troubles of later life. Show this to Mother! She knows what's best for you. "Steels" will save her hours of worry.



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I have spent a Fortune to MAKE GOOD every claim and every statement made for my "Steels." You cannot prove their worth to you unless you try my "Steels." You cannot profit by my years of effort if you lay aside this paper before writing to me.

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Just TRY my "Steels"—just send the Coupon or a postal—ask for my FREE BOOK—ask for FREE DEMONSTRATION—FREE TEN-DAY TRY-ON—in your own home—on YOUR OWN FEET.

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N. M. RUTHSTEIN, The Steel Shoe Man,
Dept. 26, Racine, Wis.

Dear Sir:—Please send me, postpaid, your free book "The Sole of Steel" and full particulars of your Free Ten-Day Try-On Offer without cost, risk or obligation to me.

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