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Echoes Of The American Road Congress.

AMERICA is awakening to the significance of good roads. In every department of her life she is finding improved means of transportation directly and indirectly helpful. She is confident that they will give her better doctors, better lawyers, better bankers, better manufacturers and better farmers. Her homes will be enlightened, her schools improved and her business conditions placed on a higher plane.

Such possibilities enlist the support of big men. The benefits are, in most instances, so directly traced that few men can resist the appeal to co-operate in the effort to get better roads. That men of large caliber have joined the ranks of those who are fighting, and will fight, for a more adequate system of wagon roads for this country and these several states, was evident at the session of the American Good Roads Congress held in Detroit last week. Brainy men representing every walk of life here convened to confer on the important question.

And in the conferences, papers and discussions, there were many things having special significance to the farmers of the state and nation. All through the former tendency of the congress to confine its deliberations to the question arising in connection with the securing of main thoroughfares, was crowded more and more into its proper place that the common roads, the roads of the masses might secure some of their merited attention.

As was declared time and again on the floor of the Congress, the common road is the big road problem of the American people. From 90 to 95 per cent of the roads of the country belong to this class; yet it is the condition of these roads that increases the cost of getting products to the consumer, obstructs the progress of the rural school, restricts the religious, social and pleasure activities of the country and the proper relations of the country and the city.

But the question that is confronting the local political subdivision, the state and the federal Congress, is how shall we put these common roads, the roads of the masses, into condition that the interests enumerated may be fostered? The traffic over these roads is usually light. Too few travel over any one of them to make it pay to use cement, macadam, or even gravel. And if the cheapest of these materials was used and the expense borne by the neighborhood farmers, they would in many instances be bankrupted by the expenditure. Then, too, it is a far more difficult task to improve a system of roads where the available capital is small than where it is large and money needs to be less considered. And in the very face of this unpromising condition there stands the other difficulty of finding a man, or men, qualified to lay out and execute the work. Men who have given the construction and maintenance of roads scientific study are to be found, not where money is scarce, but

where it is plentiful. It is in this predicament, therefore, that the men who would aid the common people by improving the common roads, find themselves placed.

The farmer, too, has been conservative. While his city cousin readily takes up with new ideas and experiments with nearly everything that is offered, the American husbandman is less forward. He thinks and studies and observes long before he tries. This no doubt in many instances has cost him advantages, but on the whole we look upon the American farmer as the balancing power in our national, state and local political organizations, as well as in our social and business activities. And that Missourian spirit of "wanting to be shown" in order to be informed of the nature of things that he may hold fast to those he finds good, till now, has retarded to some extent the effort for good roads in rural communities, because until very recently but few American farmers have been convinced that the money put into road

from the benefit to be derived from this comparatively inexpensive implement. The road commissioner of Alabama stated that in his opinion, if the common road drag could be offered by a manufacturing concern and at considerable price that it would be more liberally used.

What is needed is a system of impartial education that will reach into every community. The exploitation of tools and materials should be on a rational and economical basis. Governor Ferris made a strong plea for a service that will carry proper knowledge to the common people. Others expressed the opinion that the state and federal governments should undertake experiments, gather information and bring this to the people that they may know the best plan to follow in regard to their own roads. Several states have already begun such work. Farmers organizations are welcoming the opportunity to serve their memberships and communities. The press is active, and in all it seems that what knowledge of roads we have, will find way to every

tons? What is the waste when prices for the stored potatoes, apples, etc., are soaring and you cannot reach the market at all because of impassable roads? Who can figure out how much the man in the harvest field has lost when he is delayed a half day for repairs instead of an hour, especially when the grain should have been cut the week before? In an attempt to audit these accounts the farmer is convincing himself of the direct financial gain coming from improved wagon transportation.

And then, how many times throughout the year does he stay at home when he would like to attend Grange, the Farmers' Club, lodge, the theater, and other social functions, but can't or at least does not feel that he cares to travel through the mud for the benefits, especially when there is a possibility of neighbors staying home on the same account. And this he charges up to bad roads.

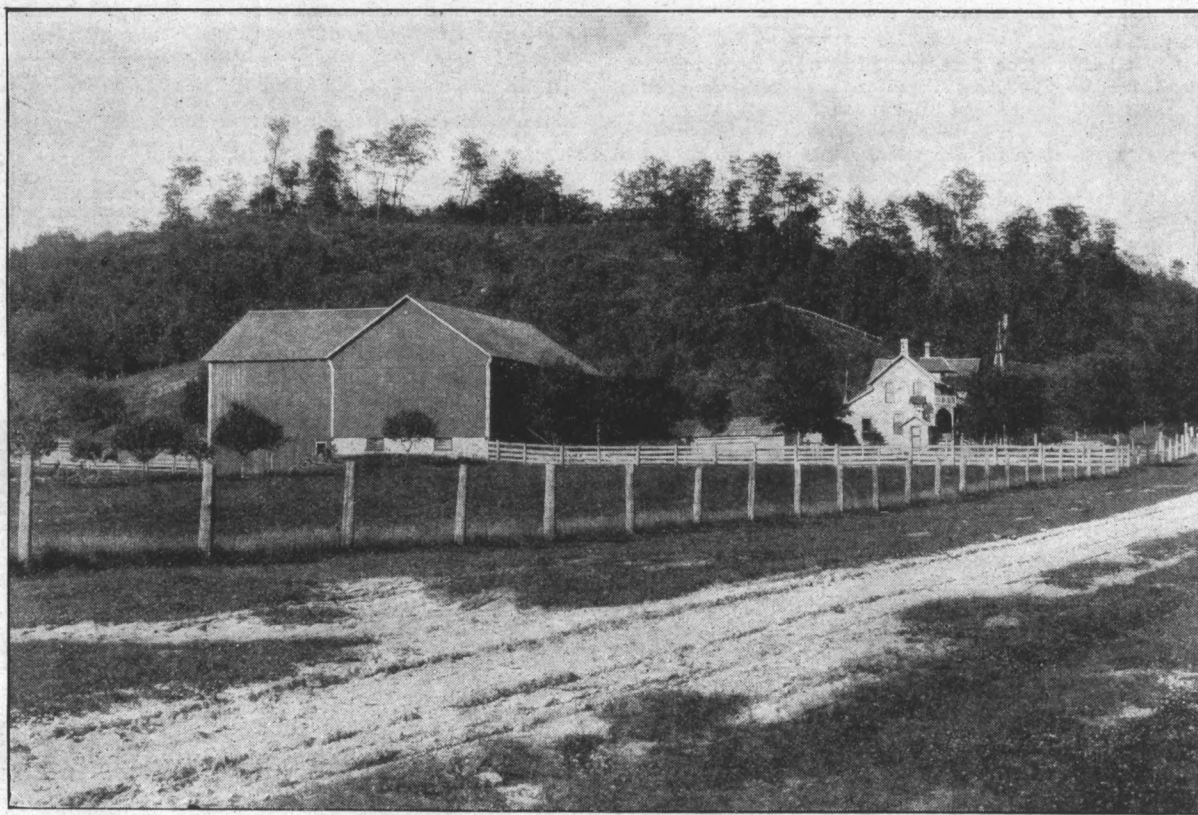
Then the country churches, each with its handful of faithful worshippers, how they might flourish if two or three congregations could amalgamate, put their budgets together, secure a better pastor and inspire him to his best efforts with large attendances. But this move would be fatal so long as poor roads connect their homes with the churches.

And finally there is that other argument which our chief executive impressed upon the members of the Congress, that the usefulness of the rural school is limited by faulty roads. Gov. Ferris paid tribute to the good country school by saying that up to the ninth grade it was perhaps a better school in which to develop the child than the city school, but beyond this the country school, as now constituted, is almost useless. To overcome the fault the country schools should be consolidated. Every boy and every girl should be given the advantage of a high school training. This school is the people's college. But good roads

are necessary to make it so. And because the farmer is anxious about the education of his children, here the advantage of good roads appeals to him.

These are the reasons the common people of the country are becoming serious about the road question, and the tendency of the great Congress held at Detroit to give increased attention to the road of the masses leads to the general belief that rapid strides will be made in the coming few years towards the solution of this present vexing problem. This belief is also supported by the activity shown by the federal and state governments, by counties and townships, as well as by the interest manifested by general associations that are now giving much study and careful consideration to ways and means of road betterment.

In another article we shall hope to give some of the practical suggestions on building and maintaining roads and administering road work offered by the Congress.



It is in the Betterment of the Common Road that the Masses are Most Interested.

building and repairing has been well spent.

The idea that the wrong type of education has been general throughout the country where the common road is the one needing improvement, was frequently expressed in the Congress. Among the rural classes have been advertised the \$5,000 to \$10,000 roads. These the farmers cannot build only for their main lines, but the teaching has led them to believe that it is useless to build any other type of road or do anything unless it demands a lot of money. All of which is wrong.

For example, the inexpensive King road drag is given a very limited use. Yet there was not a section of the country represented at the convention, (and the representatives came from practically every state in the Union and Province of Canada), that has not proven the road drag to be the one implement upon which we must depend for bettering the unsurfaced road. But the attention of the rural road maker has been distracted

home. But, as Mr. N. P. Hull stated, we must see that the information is repeated again and again that men may not only be impressed, but convinced and converted.

Notwithstanding the things that have been said, and will be said, it cannot be denied but that the large step forward comes, not from what the rural people are being told but from what they are thinking themselves; and as they are reaching a stage in the history of American agriculture where of necessity they must devote thought to the economics of their business, that constant waste due to bad roads is daily observed and something of its true significance is becoming apparent.

The financial waste caused by poor highways is difficult to even estimate. How much does it cost in horseflesh, repairs, time, etc., when a team becomes stalled with a load? What does it add to the cost of marketing when a man can draw only a ton of hay instead of three

OBTAINING SEED POTATOES FREE FROM BLIGHT.

The potato is now one of the most important crops of certain portions of Michigan and without doubt this crop will become even more important in the future. While it may be grown almost anywhere in the state, the crop is at its best in the newer lands of the northern sections, on account of the favorable combination of a good climate and favorable soil conditions. A point which adds greatly to the sale of these northern potatoes is the fact that they are comparatively free from disease. This makes it possible to get a maximum yield with a minimum of care and it also makes the potatoes of these regions especially desirable for seed purposes.

The most serious of the diseases of the potato are introduced by planting contaminated seed and once the disease has been brought into the field, it may persist in the soil. It seems, therefore, to be highly important that the potato growers of the favored sections double their endeavors to plant only seed which they know to be free from the serious potato diseases. In this manner they may secure the greatest net returns from the crop and, at the same time, keep their soils free from potato diseases and keep up the reputation and demand for Michigan-grown potatoes as especially free from disease.

The most serious disease of potatoes is late blight. This disease, as indicated by the name, causes the tops to blight in the late summer and autumn, and this is followed by a rotting of the tubers in the field or in storage. In other words, the disease first attacks the tops and then runs down the stems and attacks the tubers. Oftentimes, farmers think their potatoes have ripened when the wilting of the vines is caused from the attacks of blight. The disease enters the tubers where it runs its course in about ten days. If the potatoes are dug before the ten days are up, many of them will rot in storage, causing a loss due to the added expense of sorting out the decaying potatoes and rehandling which will be necessary. If the potatoes are not dug until after ten days have passed since the tops were killed, the blight will have run its course in the tubers and the affected ones will be completely decayed and consequently not picked up with the others to contaminate those otherwise free from blight.

This waiting until the disease has completed its work offers a way, by which clean seed may be selected for next year's planting. Of course, it will be necessary to plant this seed on ground which has not grown potatoes for from three to five years. Some authorities say not to plant potatoes on ground which has grown a blighted crop until five years have elapsed. Other equally as good authorities say that no harm will result from planting potatoes on ground which has raised a blighted crop, after three years have passed.

Ingham Co. I. J. MATHEWS.

HUSKING AND STORING FODDER.

Every farmer has his personal preferences as to the methods he shall employ in husking and storing the corn fodder that is not shredded. Weather conditions also affect materially the solution of this problem. But the fact is generally recognized that the one great loss of corn fodder occurs in the field, where it deteriorates rapidly in feeding value from the time it is in a thoroughly cured condition. When good shocks are constructed the fodder will keep fairly well in the field for at least two months, but after that time the loss is great, especially if any of the shocks get down. In any case the leaves, the most valuable portion of the fodder, soon become leached by the snows and rains of winter and they then possess little feeding value.

Some farmers prefer to husk their fodder in the field as soon as the corn is dry enough to crib; the fodder is then hauled up as needed for feeding. Field husking should be done in early morning or, during damp weather in order to avoid any unnecessary waste of the blades. Other farmers haul the shocks of fodder up as needed for feeding during the fall and winter and husk the corn at the barn. And still another class of men aim to get all, or nearly all, of their fodder to the barn and stored away before winter arrives, when it has to be shoveled out of the snow and chopped loose from the ground if still in the field. The winter hauling of fodder is disagreeable work

at the best and for this reason, to say nothing of the waste which occurs when the fodder is long exposed to the weather, an increasing number of farmers plan every fall to avoid such work.

In any case it is always advisable to haul at least a part of the fodder from the field before stormy weather, for use at those periods during the winter when the weather is unfavorable for such work. Oftentimes a large amount of fodder can be stored in the barns. A high and dry loft is the best place to store it, for unless the fodder is very dry when hauled to the barn it is almost sure to sweat and mold where a large amount is stored together. Although the moldy fodder is often eaten well by cattle, it is not desirable feed and it may cause bad flavors in the milk when fed to milch cows. By storing small quantities in a place, where there is good ventilation, the tendency to sweat and mold will be greatly reduced.

If there is no mow or shed room available for the storage of the fodder, a lot of it can be set up around the buildings where it will keep just as well, if care is taken to set the bundles up carefully, as in shocks out in the field but it will be much more convenient for feeding. The barns and poultry houses can be made a great deal warmer by setting up a generous quantity of fodder on the north and west sides of the buildings.

Another method of storing this roughage where it will be convenient for feeding is to stack it. As soon as the fodder is dry enough so that a large bulk will keep without molding, it may be hauled in and stacked much the same as other field crops. The stacks should be made high and conical so as to shed water well and they should set upon foundations of boards or rails. In stacking the bundles they should be laid flat and packed closely together. In some sections of the country the stacking of fodder is considered an ideal way of storing it for winter feeding.

Indiana. W. F. PURDUE.

SOME SOURCES OF LOSS IN FERTILITY.

The first great loss is wasted manure. Just how much manure we lose cannot be realized until you haul it out once a week for one month, then let it accumulate for one month, haul out and note the difference. We have advocated storing manure when it wasn't convenient to haul it out as fast as it is made. We have tried both ways fairly this summer and never realized until now that we were losing at least one-fourth of our manure.

First there is the waste of liquids. This, the best part of manure, will get away in spite of all you can do, no matter what facilities you have at hand for storing it. Then there is the leaching when manure is at all exposed, for very few people have places to store it where it may be kept dry, where it cannot be rained on. And the heating process cannot be prevented. When heating occurs ammonia passes away in the combustion. This contains the valuable nitrogen, the most costly of all fertilizer elements. When you see the manure has turned white then may you know that this has happened and that you have lost money by not spreading the manure sooner. One of my neighbors had a big pile of manure to sell and offered it to me for a certain price. I thought it easily worth the money but on examining it found that much, probably two-thirds, of it had gone through the heating process and turned white. I then offered just half of the price asked, and got it. Then, stored manure gets scattered and wasted. You just can't help it. Better scatter it as fast as made so that it can't get away excepting what washes down the hills. This will be almost insignificant if there is anything at all growing on the ground to hold it.

Manure, liquid wasted, leaching, heating, scattered by chickens, pigs and things, and the rest hauled out when we get time after it has lost all its strength! No wonder our soils are getting poorer each year.

The green manures, too, are being neglected by most of us. These crops create humic acid which changes the physical condition of the soil and liberates valuable plant food, besides making the soil light and porous, which facilitates drainage and admits air. Manures and fertilizers are much more effective when applied to land in such condition, and such land is much easier to work than dead, sad soils.

A heavy crop of cowpeas turned under and a light coat of manure increased the

yield of wheat 10 bushels per acre. The cost of both, including labor, was \$6 per acre. Clear profit \$2 per acre plus the fertility left in the soil for succeeding crops.

Sometimes we lose money on fertilizers. Not because fertilizers are no good. They are good, we could hardly get along without them. But we lose sometimes by buying what is not needed and by applying to the soil when it is in such poor physical condition that it is not effective, the growing plant possibly cannot use it. The ground may pack and hold too much water or it may bake so that air and moisture cannot circulate. It's a waste of time and money to put good fertilizers, or any kind for that matter, on such soil.

And then there are the cover crops. Too much of our land is being left exposed to the action of the elements to destroy fertility. So much freezing and thawing, burning, baking, erosion and leaching is allowed when a simple cover crop, even if it's nothing but crab grass or fox tail, would save any amount of fertility for us. And most all of us now religiously believe that cover crops both preserve and liberate plant food. We are leaving something on all ground not planted to crops this fall for winter protection. Where cowpeas and beans are mowed off we raise the cutter bar so as to leave plenty of stubble there, and after potatoes are dug the crab grass is allowed to grow. It can't possibly go to seed now before frost, and even if it does I should prefer fighting crab grass next summer to leaving the ground bare all winter.

Indiana. E. P. H. GREGORY.

FARM NOTES.

Cutting vs. Shredding Corn Fodder.

I have a field of corn of five acres on which I do not think there is over 75 bu. of corn, but the fodder is fine. Will it pay best to cut this corn up, ears and all, taking off the best corn, or run it through the husker and shred it? I can cut ears and all. Am feeding it that way now and all of my stock like it. Can almost buy a 2½ horsepower engine to hitch to my cutter to do the work, for what it would cost to shred it, but to cut it by hand is quite a job. Shredded fodder is fine if you get it good. But how often can that be done? My experience has been, not often. My idea is to cut enough at once for one or two days at a time. In trying it out I find it heats up quickly and then stock does not like it as well. Kindly let me hear from you along these lines.

Hillsdale Co. W. S. C.

There would not, in the writer's opinion, be very much difference in the feeding value of cut and shredded fodder, and for the small amount of corn which the stalks contain it would hardly be more profitable to shred it than it would to cut with a small outfit, ears and all, as suggested in this inquiry. There is generally a suitable time in the fall when the fodder can be safely shredded, that is when it is dry enough so that it will keep, provided a shredder can be secured at that time. This gets the job all done with and in that way is preferable to the necessity of preparing to cut the feed often during the winter. It can, however, be safely made a matter of preference, as either method will give good results in the feeding value of the forage obtained.

The Machine Husker for Farm Use.

I wish to learn through your "Farm Notes" if the small or light power huskers and shredders are a desirable implement for a farmer growing 15 to 25 acres of corn per season?

Ogemaw Co. I. C. L.

Very much will depend upon circumstances and local conditions whether it will be profitable to own a corn husker or shredder on the farm where only a moderate acreage of corn is grown, or not. One of these conditions is whether the power required to drive such a machine is available and can be used on the farm for other purposes. Under ordinary conditions such a power is profitable upon the farm. Often two or three farmers in a neighborhood can purchase such a machine jointly and by changing work in its use can get the corn husking done cheaply and more satisfactorily than would be the case by depending upon commercial huskers to do the job. Oftentimes it is impossible to get a husker and shredder just when the corn is in the best shape to shred, and where a small machine is owned on the farm or by a community of farmers this difficulty can be obviated.

Where corn is to be husked by a power husker and the fodder shredded it would appear that the individual or neighborhood machine is the solution of the problem and a good many Michigan farmers have found it to be so. Where only 15 to 25 acres of corn are grown per season, however, a considerable portion of this

at least should be taken into consideration in reaching a correct solution of this problem, since no farmer who keeps live stock of any amount can afford to do without a silo under present conditions.

The Serum Treatment for Hog Cholera.

Would like information concerning the use of vaccination as a preventive of hog cholera. I have known it to be used very successfully in the west but have never seen anything of it in the east.

Saginaw Co. SUBSCRIBER.

The development of the serum treatment for the prevention of hog cholera was as early in Michigan as in any of the other states, and for a number of years very many herds have been treated with serum furnished by the Bacteriological Department of the Agricultural College at East Lansing.

Where there is an outbreak of cholera the owner of the herd should at once communicate with Dr. Ward Giltner, State Veterinarian, East Lansing, with regard to the administration of the serum treatment for its prevention, since it has been demonstrated that this treatment is effective in a large portion of cases in immunizing herds against hog cholera.

DEEPENING A DUG WELL.

I see in the Michigan Farmer of Sept. 20, G. S., of Wayne county, wishes to know how to deepen a well.

I had a stone-walled well 14 feet deep. The water supply failed in dry weather. I took a two-inch well auger and bored nearly 14 feet in blue clay and struck water under it in sand. Water raised 11 feet. I took 1½ in. galvanized pipe with two-foot point and drove until the top of the screen was one foot below the clay, put on an iron pump and had a very superior drive well that never failed. In putting it down through clay keep the inside supplied with water or it may be hard to start the water.

Montcalm Co. S. K. MARSH.

SOIL AND FERTILIZER QUESTIONS.

Marl—Its Value and How to Apply It.

We have a part of the marl bed owned by the Cement Company at Union City, on our farm, and I would like to know how to use it on our land, as I think the land needs it. I lose much of my seedling and there is considerable sorrel in the land. There is a small lake in the part of the beds on our farm and as it is low water now the marl is bare and I have drawn off about 50 wagon loads and have covered my alfalfa with a part of it by taking the beater off the manure spreader and putting sufficient straw in the box so that it was about six inches deep after it was packed down with the marl, then filled the box with marl. It spread it nicely and does not clog or stick to the spreader. Now I am drawing off the beds with the spreader and spreading it as drawn, but don't know how much to put on to the acre or when is the best time to put it on the ground, before or after plowing. There are thousands of tons on the farm and I understand that it tests 95 per cent lime. What is its value on land, compared with the lime generally used? Will it help the seedling if put on wheat this fall and sown to clover next spring? I intend to sow a piece to alfalfa next year. Would it be better to cover the field this fall or not until the ground is plowed next year? Will it do any harm to cover a field of clover that was mowed this year and intended for hay next year?

Jackson Co. C. O. W.

Marl that contains 95 per cent of the carbonate of lime is just as good as anybody's ground limestone. In fact it is better, because it is finer and more readily soluble in water. The fact is, marl has already been dissolved once in water and washed away by it and deposited in beds. Ground limestone containing the same per cent of carbonate of lime is just as good as marl, provided it is as finely ground. It is almost impossible, in fact, it is impossible, to grind limestone rock as fine as marl. A portion of it, of course, is as fine as dust and that will give immediate effect. The coarser portion will not give immediate effect but they will become available later and can be used in that way. If you make heavy applications of crushed or ground limestone it does very well and you wouldn't have to apply it so often then because the coarser parts would become available after the fine parts had been used, but with marl it is all, every portion of it, ready for business.

There is very little danger of putting on too much of marl. In fact, I think it would be impossible to put on enough marl to do any harm. The richer a soil is in the carbonate of calcium, the better soil it is, the longer it will keep in good condition, the longer it will be productive. Carbonate of calcium is a wonderful thing in the soil. While but very little of this product is used as plant food, yet it has a wonderful effect in keeping

the soil in good condition to grow crops. In the decaying of organic matter acids form. Now when these acids form in the presence of lime, carbonate of calcium, they are neutralized at once and the soil is kept sweet, and this goes on until the lime is used up or washed away. Then, when organic matter decays in the soil it generates organic acid and there is no carbonate of calcium there to neutralize it and the soil gradually becomes sour and when it gets sour then it is not as productive. If it gets sour enough you can't grow leguminous crops because the essential bacteria need a sweet soil in order to thrive. They cannot thrive in an acid soil.

I don't think there is any better way of putting this marl on the land than the way that C. O. W. is now doing. Put it in the manure spreader and take it at once to the field. You can put on as much as you care to without any danger of injuring the soil. You might put on more than would be profitable, or some of it might wash out of the soil before it was used, but at any rate, with marl as handy as you have got it you can afford to be liberal with it.

The best way to apply marl is to put it on the ground after it is plowed. The tendency of the marl and lime is to go down through the soil and be washed away, consequently it wouldn't be good philosophy to put this on top of the soil and then plow it under several inches deep. It will get down seven or eight inches deep soon enough. What we want is to have it mixed with the surface soil when we harrow and work the land and neutralize the free acid that is in this soil, so that the soil will become a genial home for bacteria and their host plants.

A good way to handle marl when it is pretty wet is to throw it out during the dry time of the year, dig trenches, for instance, through the marl bed and throw it up in long piles. Then the freezing and thawing in the winter time will help to pulverize it and will also allow it to drain off and you don't have to draw and handle so much water. But where the bed is dry enough so that you can drive on as you can with a manure spreader then there is no better way of handling it.

Kind of Fertilizer to Use on Different Kinds of Soil.

I have used some commercial fertilizer on three different kinds of land and the results were different. It was a standard formula. On piece No. 1, there was plenty of straw, while the heads were of fair length but poorly filled with wheat. Piece No. 2 was sandy and the wheat not much good. Piece No. 3 was heavy, rolling land, and produced a good crop, which was helped by the fertilizer. Now will Mr. Lillie answer some questions about fertilizers and tell us what helps to produce the straw and what the grain on the different kinds of land. I would like to have it made plain so as to know what kind of formula of fertilizer to buy for different kinds of land.

Eaton Co. N. B. This question goes to the bottom of the whole problem of artificial fertilization. N. B. has started right. Different soils require different formulas of plant food. Economic artificial fertilization consists in balancing up the plant food that is in the soil. In other words, it is making a balanced ration for plants, just the same as giving the right amount of protein and carbohydrates makes a balanced ration for our animals. The only trouble is we do not know the amount of available nitrogen, phosphoric acid, and potash that our soils contain. One soil is rich in available nitrogen; another may be rich in available phosphoric acid, and still another in potash. Then again, a soil may be rich in phosphoric acid and potash but deficient in nitrogen, and so on. We can't tell by chemical analysis what our soils are deficient in, because chemical analysis will not tell us the available plant food. It will tell us the total plant food. For instance, the chemist can tell you how much total nitrogen you have got in a given amount of soil, or how much total phosphoric acid or potash, but he can't tell you how much is in shape to be used by the plant, because when he makes the analysis he has to make it all soluble.

Now the farmer or the plant grower is interested in that portion of plant food in the soil which is available, which is in such shape that the plants can use it, and so the chemist can help us but little on this score. The only thing to do for the farmer is to experiment. Ask the soil what it needs, and it will tell you in unmistakable language. That is, try nitrogen on a strip of soil. Try phosphoric acid on another strip of soil. Try potash on another. Try combinations on other strips of soil. Note the results.

That is just what N. B. is doing and he is going to win out if he will stick to this question and follow it. Now, if your soil is deficient in nitrogen then where you apply the nitrogen you ought to get splendid results because it balances up the plant food in the soil and enables the plant to get the right proportion of the nitrogen, phosphoric acid, and potash to make a maximum growth. So, too, with phosphoric acid and potash. But the farmer must find it out for himself. Nobody else can do it for him.

Now in all probability lot No. 1, where fertilizer was used was woefully deficient in phosphoric acid. You had plenty of nitrogen to grow a good straw and good heads, you had potash enough to stiffen the straw, and that sort of thing, but it lacked phosphoric acid to develop the grain. Consequently the fertilizer used should have been supplemented with extra phosphoric acid. Again, strip No. 2 was a poor, sandy piece. This probably was deficient in all three of the essential elements of plant growth and undoubtedly also in vegetable matter or humus. A sandy soil is quite liable to be deficient in potash. And so I would say that the fertilizer used probably did not contain a sufficient amount of potash for sandy soil, or for soil that is abnormally deficient in potash. Then again, on strip No. 3 you had good results. Now this soil is up-land timbered land. It is deficient in all three elements, nitrogen, phosphoric acid, and potash, and a complete fertilizer there helped out the supply of available plant food and gave the plants just a little bit more to enable them to grow better. By experimenting one can find out on this soil how much it will pay to use, whether it will pay to use 200 lbs. or 400 lbs. or 500 lbs. per acre. In this way by experimenting he is not using fertilizers in the dark, he is using them intelligently. No one would advocate the use of more fertilizer than would be profitable, but at the same time the farmer can't afford to use less than is profitable.

To correctly judge the results secured, one has to know what element in the fertilizer grows the straw and the grain, and so on. This can be told in a general way. Nitrogen goes to produce a luxuriant growth of foliage. Where plants do not grow luxuriantly it is a good indication that there is not enough available nitrogen in the soil. Where corn, for instance, or wheat, comes up and then makes a puny growth and turns yellow it is a good indication that that soil needs nitrogen.

Phosphoric acid goes to produce the seed. When seeds mature they store up a considerable amount of phosphoric acid and there is great demand for it. Unless you have it available in the soil you are not going to get good seed development. Wheat that grows on soil deficient in phosphoric acid is not as plump as that where there is a sufficient amount of it. Most all of the soils, the soil experts tell us, east of the Mississippi river, are deficient in available phosphorus, so that almost any farmer is warranted in buying phosphoric acid to put on his soil. And this is why those best informed would advocate that we use acid phosphate in the stables to absorb the ammonia and to also absorb liquid manure, because our stable manures are deficient in phosphoric acid, our land is deficient in this element, and it will pay to add phosphoric acid in the form of acid phosphate in the stable to balance up the plant food in our soil.

Potash goes to produce a good, sound stalk or the fiber of the plant. It takes lots of potash to produce cellulose tissue. If wheat has a weak straw it is an indication that there is not enough available potash in the soil. Of course, if wheat is sown too thick it can't grow normally. Wheat or any plant grown a little bit thinner on the ground has a more natural development, and it might be that you would have a sufficient amount of potash in the soil and yet the straw of the cereals would be weak on account of using too much seed. But under normal conditions if the straw is weak potash will stiffen it. The fruit growers are interested in potash because it goes to produce the fleshy parts of the fruit and gives color also to fruit.

N. B. requests me to tell him this so that he will know just what fertilizer to use on his land. But, as I said before, this doesn't tell the whole story. N. B. must experiment and find out what he has got in his soil and then supply the deficient elements. That is the only way to do.

COLON C. LILLIE.

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Practical Science.

MAINTENANCE OF FERTILITY AND THE WASTE OF FARM MANURES.

BY FLOYD W. ROBISON.

It has been determined by various experimenters, principally through the state experiment stations, that the value of the nitrogen, phosphoric acid and potash in farm manures is practically the same as that in the ordinary commercial fertilizers such as bone meal, tankage, and the potash salts. These values fluctuate slightly from year to year but will be found around 18 cents for nitrogen per pound; five cents per pound for phosphoric acid, available; and five cents per pound for available potash. As we have stated before, it is only for purposes of valuation that we adjudge to barnyard manures these simple values for we have long since learned that the intrinsic value of barnyard manure is vastly out of proportion to the amount of nitrogen, phosphoric acid and potash which it contains. From the standpoint of the depletion of the total fertility of the soil by the removal of crops and the failure to return the barnyard manures produced on the farm, which represent in part at least, the equivalent of the crop removed, we must figure it from the standpoint of its nitrogen, phosphoric acid and potash only.

Truck Gardening Draws Heavily on the Soil.

In certain sections of the country, particularly in the vicinity of the larger cities truck gardening is practiced to a large extent and it is common knowledge among truck gardeners that to secure adequate crops they must resort yearly to the liberal application of artificial manures. This condition is interesting and worth inquiring into. Taking Henry's computation we find the following regarding the nitrogen, phosphoric acid and potash and constituents of various plant and animal products. He figures the following, on 1,000 pounds:

	Plant Products.		
	Nitro. lbs.	Phos. lbs.	Acid. lbs.
Straw	5.0	2.2	6.3
Timothy hay ..	9.4	3.3	14.2
Clover hay	19.7	5.5	18.7
Corn	16.5	7.1	5.7
Wheat	19.0	5.5	8.7
Wheat bran	24.6	26.9	15.2
Oil meal	54.2	16.6	13.7

	Animal Products.		
	Nitro. lbs.	Phos. lbs.	Acid. lbs.
Fat ox	23.3	15.5	1.8
Fat hog	17.7	6.5	1.4
Milk	5.8	1.9	1.7
Butter	1.2	0.4	0.4

We note, then, that in removing 1,000 pounds of wheat straw there would be removed 2.2 pounds of phosphoric acid, whereas in the removal of 1,000 pounds of milk there is only 1.9 pounds of phosphoric acid removed, and only about one-third as much potash as is removed in the wheat straw. With clover hay, however, the amount of phosphoric acid removed by selling the crop of clover hay would be 5.5 pounds per 1,000 pounds of clover hay and 18.7 pounds of potash per 1,000 pounds of clover hay. In a fat animal being fattened upon the crops on the farm practically all of the fertilizing elements which are consumed by the animal as feed are voided likewise by the animal as manure. In other words, a maintenance animal, full grown, does not retain in the body any very great amount of the fertilizing constituents of the feed. Generally speaking, it may be said that if one sells from the farm a ton of the various hays or other produce on the farm he sells from that farm as much fertility as would be sold in disposing of animal products worth ten times the value of that crop. If a truck gardener were able to feed his products upon his farm and return those fertilizing elements to the soil, undoubtedly he would not have to purchase the large quantities of fertilizers that he now buys. Of course, this is impossible for him, consequently to offset the terrific drain upon the soil he must purchase more and more each year of artificial fertilizers, or manures. In general farming it will be found that that farm upon which stock are kept and the products of that farm fed or sold to the stock upon the farm, and the proper conservation of manures practiced, there will be the least expense for the addition of foreign commercial fertilizers.

The Fertilizing Value of the Crop.

Let us follow Henry's computation a little further. He states that in 1,000

pounds of bran, acceding the same value to nitrogen, phosphoric acid and potash as given to commercial fertilizers, we would find that one ton would be worth about \$13, as a fertilizer. In other words, if a ton of bran is sold off the farm and we desire to replace with commercial fertilizers the exact equivalent of the 1,000 pounds of bran removed, it would cost the farmer \$13 to replace that ton of bran. If, then, we deduct from the selling price of the bran, which we may say is \$23 per ton, the \$13 represented by its fertilizing equivalent, we have the real value of a ton of bran when sold by the farmer, say \$10.

Suppose now, that this bran, instead of being sold, is fed to the stock upon the farm, mature animals retaining in their bodies none, or practically none, of the fertilizing constituents of the bran, the manure equivalent of the bran removed is therefore compensated for and the \$13 value we may add the increased value given to that food by stepping it up from its plant value to its greater animal value. We find, as a rule, bran in the form of animal products to have a much higher equivalent than do bran in the form of a plant constituent, with the fertilizer equivalent of the bran compensated for besides.

Manure Value of Various Stock Excrement.

According to Roberts, in his "Fertility of the Land," the amount of manure from various animals is estimated as follows per year:

	Nitro. lbs.	Phos. lbs.	Acid. lbs.	Potash. lbs.
From the hog	12	11	12	
From the cow	171	26	108	
From the horse	125	48	43	
From the sheep	8	6	14	

The total valuation figured at the rates given above, of these manures, would therefore, be as follows: The manurial value of the excrement from the pig would be worth \$3.25 per year; from the sheep, \$2.50 per year; from the cow, \$37.50 per year, and from the horse, \$27. The increased value to feed consumed on the farm.

We might consider then, that if we accord equal values to the various crops when sold from the farm as when consumed by stock upon the farm, the increased value to the farm of having the hay and grain fed upon the farm, if one horse, one sheep, one cow and one hog were kept, would be \$70.25.

But it is quite common knowledge among stockmen that as a rule more money can be gotten from a bushel of corn or a ton of hay by feeding it to live stock than by selling the product directly.

The New York Experiment Station has estimated the value of the different manures about as follows, based upon one ton: From a horse, \$2.50; from a cow, \$2.26; from a hog, \$3.73; from a sheep, \$3.75.

Let us remember another point in this connection, and that is that crops all represent manurial constituents of the soil which are the most available in that soil, and consequently of the greatest value and most essential to that soil.

BOOK NOTICES.

The New Agrarianism, by Chas. W. Dahlinger. This volume undertakes a survey of the prevalent spirit of social unrest and gives consideration to the campaign in the adjustment of agriculture with industries and commerce. The volume contains 250 pages, is bound in cloth and sells for \$1.00 per copy, net. Published by the G. P. Putnam's Sons, New York.

The Principles of Agriculture, by C. A. Stebbins, of Chico State Normal School, California. The purpose of this book is the use of the garden for the sake of the garden itself and that it may lead the children into the life of the state. Here are brought together over 40 lessons covering a wide field of interest that will aid the child in developing vital relation with numerous facts and phenomena connected with farm life. The book contains nearly 400 pages, is printed on excellent paper, thoroughly illustrated, and is bound in cloth. The price is \$1.00 per volume. Published by MacMillan Co., New York.

The Corn Crops, by E. G. Montgomery, Professor of Farm Crops at Cornell University. This is the latest addition to the rural text book series edited by Dr. L. H. Bailey. Here a careful analysis is made of the different factors entering into the production of corn and sorghums. The volume is planned for the student, but will prove highly valuable to the farmer. It contains 350 pages, is bound in cloth and sells at \$1.60 per volume. MacMillan, Co., New York.

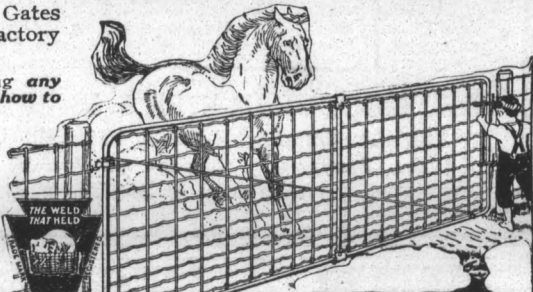
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Horticulture.

SPRAYING VS. SPURTING.

We are hearing the usual complaints about leaf curl on the peach trees and at the same time are asked what can be done for it. The answer is, spray, thoroughly in March with lime-sulphur at winter strength. Then comes the information that such work was done at the proper time and thoroughly, too. This information can not be doubted as the spraying was not witnessed but what is more than circumstantial evidence gives us the absolute knowledge that the man who did the spraying did not have a thorough knowledge of thoroughness. For, we know that lime-sulphur sprayed as above directed, will absolutely control the leaf curl. We also know that unsprayed trees are very liable to have the leaf curl and when a bud or two or more, or a twig or two or more are skipped they are not sprayed and are therefore very liable to have the leaf curl. An extra heavy application on one bud will not help that unsprayed bud next to it in the least.

We also hear of the prevalence of scab on the apples and are asked what is the trouble with the formula we are recommending. If lime and sulphur is used as a summer fungicide that is found fault with and hints are given of going back to Bordeaux, or possibly the particular brand of lime-sulphur was not as good as it was last year. No, it could not be the spraying because that was done thoroughly.

Here is a sample of thoroughness. The grower complained about the prevalence of scab and, consequently about the efficiency of the mixture he was using. He said he got a good job done, but he was delayed about a week in getting the second spray after blossoming on because he was getting his corn in. Then he could not get it sprayed from one side because the wind was against him. And the spraying in the pink of the blossom he did not get time to put on at all. Any wonder he had scab?

Often, however, a man who does quite thorough work in spraying will have good success for several seasons and then have poor results. The seasons of success were undoubtedly those in which there was a comparative scarcity of scab or he happened to just get the spray on at the right time, and the season of failure was due to not enough spraying, carelessness in application, or the season may have been one very favorable to the development of scab. The latter statement must not be taken as an excuse for poor results because scab can be controlled in any season. However, it is harder to keep in check in some seasons than others and it will require more applications to get the desired results.

It is hard to tell the exact time for spraying for scab. It can not be determined like the spraying time for the codling moth can. The weather conditions early in the season may be so that the scab will develop but little, and then later favorable scab weather may come and cause scabby fruit. Often a matter of two or three days will make the difference between clean fruit and scabby fruit. But, as long as the fruit and foliage is covered with spray there need be no fear of scab, no matter what the spray be as long as it is one of the approved fungicides. It is not a matter of Bordeaux mixture or lime-sulphur, but of having the spray there before the scab. Bordeaux has this one advantage: It shows up better and one is more liable to do a thorough job. With thorough work in the use of both fungicides our experience is that lime-sulphur is fully as good a fungicide as Bordeaux, if not better. This year we have some Bordeaux men complaining, while others using lime-sulphur are having excellent success. It is not so much a matter of dope as it is of doing.

The old saying that a poor workman blames his tools well applies to the complain in spraying. It is the same the world over. The man who thinks the world is going to the dogs is generally going to the dogs himself, and the man who thinks the world's troubles are put on his shoulders will find that the trouble is with himself if he makes a proper investigation.

There is considerable difference between spraying and spurting. There are

quite a few spurters in the spraying business. A little spurt here and a little spurt there and the spurter calls the job done. Spasmodic work rarely brings good results. It is the thorough, constant work that gets there.

Spraying is not a wholesale job but rather a matter of details. It is not a matter of spraying orchards or trees but of spraying buds, twigs, leaves, and fruit. Now, as a matter of consolation, failure will occasionally come to the best of us. But, as a moral to this article, don't blame the stuff you are using until you are absolutely sure that it was used right.

Van Buren Co. FRANK A. WILKEN.

POPCORN FOR THE HOME.

There is magic in the music of popping corn. For affording a pleasant and healthful treat for the family during the long winter evenings and the holiday season pop corn probably has no equal. The crisp, flaky pop corn is dear to the children's palate and the "pop corn and Christmas hemlock spurring in the fire" has been enjoyed by both old and young for many generations. Besides being a source of entertainment for the children, pop corn has considerable value as a food, and when properly prepared for the table it is superior to many of the breakfast foods now on the market.

It is for this reason that the Department of Agriculture will issue shortly another of the series of cook books for which the department has become famous, in the shape of Farmers' Bulletin 553, "Pop Corn for the Home," by C. P. Hartley and J. G. Willier. The bulletin gives recipes for "Chocolate Pop Corn," "Sugared Pop Corn," and "Pop Corn Balls." In addition to these recipes the bulletin contains direction for caring for and harvesting the crop.

Attention is called to the fact that if every farm home would keep a supply of pop corn and a popper convenient, fewer nickels would be spent for less wholesome knickknacks and more enjoyable evenings would be spent around the family hearth.

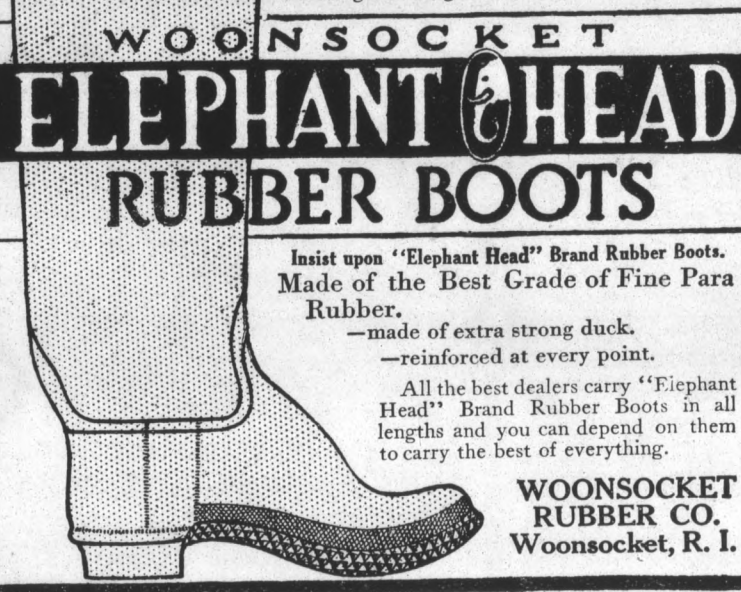
It is customary on many farms where it is not desired to grow pop corn as a market crop to plant a few rows of it in the garden for home use. This phase of farming usually interests the children and it is well to let them help do the planting. Pop corn readily mixes with field corn and sweet corn planted near it, and as this mixing renders it unsuitable for seed purposes some of the old seed should be saved for next year's planting or good seed should be procured from some other source.

If it is desired to grow pop corn as a field crop, the surplus stock that is not wanted for home use can usually be sold to local merchants at a fair price or a profitable local trade may be built up by supplying it direct to consumers. This practice should be encouraged, as it enables consumers to make their own pop corn confections and thus have them fresh, in which state they are at their best, and when it is considered that \$30 worth of popped corn in the form of five-cent packages represents an outlay of only about \$1 or \$1.50 for raw material it can be seen that there is money in pop corn. Sufficient pop corn to make \$30 worth of five-cent packages of popped corn can be grown on a piece of land 40 feet long and 20 feet wide.

Of course you know how to pop corn. Of course you do, yet the department calls attention to the fact that to obtain good results the main requisites are good corn and a good hot fire. Too much corn should not be taken at one time—not more than enough to barely cover the bottom of the popper one kernel deep. Hold the popper high enough above the fire or heat to keep from burning the kernels or scorching them too quickly. The right degree of heat for best results in popping should make good corn begin to pop in one and one-half minutes. To preserve the snowy whiteness of the popped kernels, the flame must be kept from striking them, as by having a hot plate if using a wire popper, or a pan if popping over a flame. If the pop corn is in first-class condition and the heat properly applied, one pint of unpopped corn should give 15 to 20 pints of popped corn.

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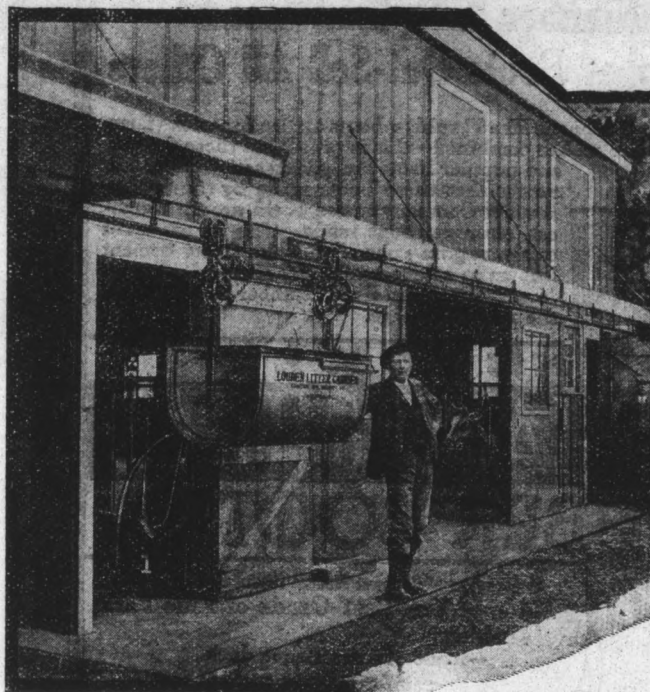
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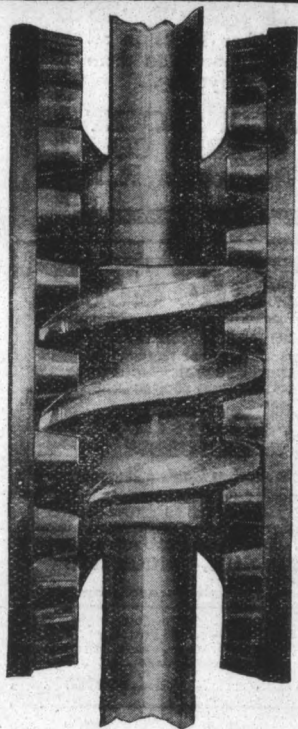
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This is a model of the strongest type of gears known to mechanical science—the worm gear—and the parts on the Louden Litter and Feed Carriers are four times as large as the illustration shows them.

The pins or lugs shown fitting into spiral or screw on the shaft and the threads or teeth of the spiral are nine-sixteenths of an inch in diameter. They have the strength and the wearing qualities and will last for years.

All the weight of the load in the carrier falls upon these pins and the spiral and by means of these the load is raised or lowered. In all the years the Louden Carriers have been on the market no report has reached the company of this section of the carriers being broken or worn out—yet these parts are used more than any other part of the carriers.

Louden Carriers are Built for Service—and They Give It

FILL IN THIS FREE COUPON AND MAIL

Louden Machinery Co., 235 Broadway, Fairfield, Ia.

Send me free of charge and without any obligations whatever the booklets checked below:

- (Fill in blank at left "yes" or "no.")
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| <input type="checkbox"/> Catalog of Feed and Litter Carriers. | *Please give size.....ft. |
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*Give, in letter, all information possible and in case of remodeling, give sketch of present barn and indicate changes preferred.

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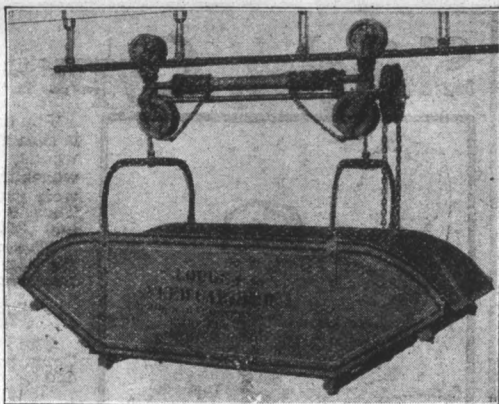
GOOD Enough for the United States Government; Good Enough for Agricultural Schools in All Parts of this Country; Good Enough for the Largest Farms; Good Enough for the Greatest Dairies; and Surely Good Enough for You.

Modeled according to plans and suggestions of men who have devoted their lives to the study and perfection of barn equipment, and made of material proven to be best and most lasting for each individual part, Louden Litter and Feed Carriers are marvels for completeness, wearing qualities and labor saving features—

They will save enough time, labor and feed to pay for themselves in a few months

Operated on a steel track or cable, the carriers are always ready for use, yet up out of the way. Besides being labor saving with regard to the manner of conveyance the carriers may be raised or lowered very easily. The gearing of the lifting device gives the operator great lifting power, the ratio being 40 to 1.

Many users have written: "*Don't see how we ever got along before the carriers were invented by you. We would not know what to do without them now.*"

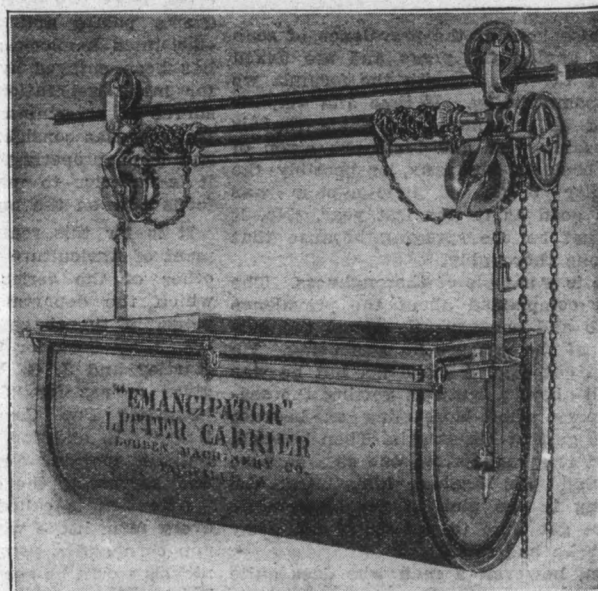


Louden Feed Carriers contain all the desirable features. They are made so they may be emptied from one or two ends, or from the side. The boxes are of selected well seasoned wood, strongly reinforced at all points where there is wear and give lasting satisfaction. A New Jersey dairyman writes his feed carrier paid for itself in the saving of labor and feed in less than three months.

For 47 years Louden's has led in the production of barn equipment. More than 300 different articles are manufactured, each a time, labor, and material saver. Haying tools of every kind are made, barn door hangers, ventilators, power hoists, slings, pulleys, etc. Every article manufactured has stood the most rigid tests—gives lasting satisfaction.

Act Now and Economize— ACT AT ONCE. Look up the Louden dealer in your town or fill in the coupon at the left. Why do you continue with the methods of generations past? It's a losing matter for you. Equipment of today in your barn adds great value to your property. Fill in the coupon.

LOUDEN MACHINERY COMPANY
Makers of 300 Time and Labor Savers for the Barn
235 Broadway, Fairfield, Iowa



This is the "Emancipator" and true to its name it will free the man of the barn from many of the disagreeable features of the work of cleaning and at the same time be his constant companion in keeping the barn in a perfectly sanitary condition. This is but one of the many Louden Carriers.

Louden Barn Equipment Will Help to Keep Boys on the Farm

Every farmer's boy in the land welcomes every new improvement on the farm and every one will receive Louden Litter and Feed Carriers with open arms. Not only because the carrier will be an improvement but it will greatly reduce the work of the lads in the cleaning of the barn and the feeding of all animals. And carriers save the valuable elements of the manure and much of the feed that is scattered over the barn floor where the old basket method is used.

On this subject a Bangor, Mich., patron writes: "I am most sincere in saying I believe the more general use of Louden goods would be a strong factor in solving the problem of keeping the boys on the farm."

Tie Your Cows With Louden Tubular Stanchions

Comfort giving, sanitary, and strong enough to hold the biggest bull, the Louden Stanchions, made with or without wood lining, will prove an improvement for your barn. Any stanchion is as strong as its hinge. The Louden Stanchion is made exceptionally strong by the tubular malleable connections which form the hinge, fitting snugly into each other and a strong rivet passing through the sides of each. The bearing points are as far apart as possible. The hinge is 2½" in diameter.

The National Short Course

Dairymen and farmers will find the National Dairy Show at Chicago, October 23 to November 1, very instructive. The lectures, demonstrations, and exhibits make this event the greatest of its kind in the world. The money and time it costs you to attend will be well spent. Visit the Louden exhibit.

Dairy.

CONDUCTED BY COLON C. LILLIE.

RAISING CALVES WITHOUT SKIM-MILK.

Is there any way in which I can raise my young calves and leave the skim-milk out? I mean to give them some whole milk. I can send my milk to the condensary every morning. This will save me and my wife considerable work, both in and out of doors. I wish to raise these calves well and keep them growing all the time. Can you tell me some way to do it?

Clinton Co.

R. H. S.

Good calves have been and can be raised without any skim-milk and with a very small amount of whole milk, just a sufficient amount to give them a good start. When the calf is first dropped it needs whole milk and its mother's whole milk at that, and it ought to have whole milk for the first two weeks of its life. This regulates the bowels and gets the calf started in good condition. Then something else can be substituted for the whole milk. It isn't profitable to feed whole milk for any considerable length of time because the butter-fat is worth so much, and if the whole milk is sold one can't afford to feed it long. The best substitute for milk that can be given a calf is a thin gruel made out of a variety of grain. We want a variety of grain because their combination will give a better ration than any one grain alone. For instance, if you mix together oil meal, wheat middlings, ground flaxseed, corn meal, crushed oats, and perhaps ground wheat, this will make a more complete ration for young growing calves than any one grain alone. Mix as many grains together as you can get handily in equal parts, and then make this into a thin gruel. Then use a pint of the mixed ground grain to six pints of water and let it come to a boil. Now, at the end of two weeks begin to substitute some of this gruel for the whole milk. That is, give the calf a whole milk ration until he is two weeks old, then gradually diminish the amount of whole milk and substitute in its place this gruel made out of this combination of feed. Gradually cut off the whole milk and increase the gruel until your calf is eating the gruel alone. If you get the gruel too thick so that you think the calf is getting too much grain, you can tell by the way it is digested, and the fault can be easily remedied by thinning it with warm water at the time of feeding. You must have bulk and not too concentrated a feed for calves. Besides the gruel you must get the calf to eating ground oats or barley, ground oats are splendid, just as soon as you possibly can. When he gets through eating his gruel give him a handful of crushed oats. He will soon learn to eat them. Also get him to eating clover hay as soon as possible. Now increase the amount of gruel as the calf grows and develops the same as you would any other ration, and you will find you can raise nearly as good calves in this way as you can with skim-milk. Of course, it is a little bit more bother to make this gruel, but it makes a very good ration for the calf.

HOLSTEIN BREEDERS HOLD PICNIC.

The second annual meeting of the Central Michigan Holstein Breeders' Association was held on the farm of Mr. George H. Gillespie, of Ingham county, September 23.

The entertainment of the 185 members and friends of the association was so ordered as to secure for each and all real pleasure and benefit. Besides the social recesses in which old friendships were nurtured and new ones begun, a profitable and entertaining program was rendered, after which an inspection of the equipment, herd and premises, of the host was made, all of which aroused interest and admiration and provided helpful instruction.

Prominent men took part in the program. Hon. Lawton T. Hemans addressed the assembly upon the subject, "Farming and Living," whereupon the pointed out how that the farmer was exclusive from other businesses and professions in one regard, and that is that it is the only business in the world which combines the home and the factory. Living and production are here brought under one organization and because of this the tiller of the soil is usually very prac-

tical, earnest and reverent. Mr. Hemans also contended that the problems of the farm differ from those of the city. The farm home must appeal to the boy and girl. "The farmer should raise humanity as well as Holsteins, good citizens as well as good corn."

N. P. Hull, secretary of the National Dairy Union proved an interesting speaker. He confined his address largely to the great problem of the American husbandman, the restoration of plant food in our land. That this will be done, the speaker manifested real hope, since the history of the efforts and accomplishment of the farmer on this continent proves ability and an ambition that is not easily daunted. The welfare of the nation rests on the shoulders of the farmer, and the time is here when he must and, we believe, will, cease to be a soil robber and become a soil builder. This end will, in a large measure, be realized through animal husbandry and especially dairying.

The inspection of Mr. Gillespie's splendid herd of Holsteins proved an interesting part of the day's program, since among his cows is one that holds an official state record.

ENSILOING CORNSTALKS.

As I have been delayed in getting a silo and the corn now being ripe I would like your opinion through the columns of the Michigan Farmer as to whether it will pay to fill with fodder after it is husked, or should a part of the corn be left with the fodder? Any suggestions you make will be appreciated.

Newaygo Co.

J. W.

I am positive, and I speak from experience, that where one has the silo room, the most economical way to care for the cornstalks is to cut them up after they are husked and put them in a silo. When one does this he must use water liberally, and wet them up so that they will settle down and make good ensilage. Of course, no one will argue that this corn fodder, where the plant has been allowed to ripen and the corn husked off, will make as nutritious a food as corn that was raised for the silo and put in ears, stalks and all. It would be foolish to make any such claim as that.

On the other hand, we all know that where we feed the dry cornstalks that only a portion of them are eaten. All that part of the stalk below the ear is not eaten at all. Much of the stalk above the ear and lots of the dry husks are not eaten. In fact, the upper portion of the stalks and the leaves are all that are eaten, the rest is wasted as far as food value is concerned. Now an argument for the silo is that you cut up the corn when it is just mature, before the dry fermentation in the stalk has changed the starch and sugar to cellulose, or woody fiber, when it becomes partially, at least, indigestible, and it also becomes partially unpalatable. On the other hand, when this is put into the silo and changed by the fermentation and heat generated in the silo the cows eat practically all of it. Nothing is wasted. The fermentation in the silo aids in the digestibility of dry corn.

Just last year I didn't have enough regular silage corn to fill the silos and one field had ripened. We drove through straddling the rows and husked the corn off and then cut up the stalks and put them into the silo. Now these cornstalks were all consumed by the cows. They ate them up just as clean as they did the regular silage. Of course, when we were feeding this we fed a little more grain, but it made a fairly good food. I also raised a few soy beans last year, and we cut them and mixed them in with the cornstalks, and it made good silage.

When ensiling dry cornstalks great care must be taken to use plenty of water to get the stalks wet. You want to use a sufficient amount of water to take the place of the original juice in the corn plant. You will want a nice little stream of water running into the silage cutter all the while that you are running stalks through. This will make it none too wet, and it may be then that additional water poured on top of the silo after you are through, a considerable quantity of it, will be necessary to make the dry stalks settle down and pack closely and exclude the air so that they will ferment to make good ensilage.

Pasteurizing kills the most of the bacteria in milk and injures the rest so they do not become active again for some time. It also cooks the albumen which gives an undesirable flavor to the milk if heated at too high a temperature or for too long a time. The best way to pasteurize is to heat the milk at 140 degrees F. for 15 minutes.



**With butter
at the present
high price
every ounce
of cream counts**

Cream is more than ever a very valuable commodity these days, and it is doubly important that not a drop be wasted or lost.

If you are still using the "gravity" setting method you are losing a pound of butter-fat in the skim-milk for every four or five pounds you get.

The advantages of the DE LAVAL over inferior cream separators at all times are greatest at the season when milk is often cool and cows are old in lactation.

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Will Save Its Cost by Spring

Then why put off any longer the purchase of this great money saving machine. Put it in now and let it save its own cost during the Fall and Winter and by next Spring you will be just so much ahead.

Even if you have only a few cows in milk you can buy a DE LAVAL now and save its cost by Spring, and you can buy a DE LAVAL machine for cash or on such liberal terms that it will actually pay for itself.

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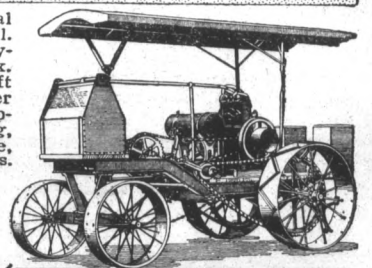
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DETROIT, OCT 11, 1913.

CURRENT COMMENT.

That "the proof of the pudding is in eating it, and not in chewing the string," is probably as applicable to the recent tariff legislation, as to the edible itself, were this time worn maxim literally interpreted. There has, however, been less "chewing of the string" in connection with the administration tariff bill just passed and signed by the President, than has been the case with any other similar important event in the history of the government. It has been a foregone conclusion that the success of the democratic party at the last general election would be quickly followed by a general tariff revision downward, in accordance with the time-honored tenets of the party and the provisions of the platform upon which the successful candidates made their campaign. Also there has been sufficient discussion in and out of Congress so that the public was fairly well advised regarding general lines along which this downward revision would be consummated, consequently those of the American people in all classes who have believed that the country would be benefited by a general downward revision have awaited the outcome with calm expectancy, while those who have opposed this policy as detrimental to the public welfare, have been equally calm and unexcited, and have looked upon this outcome as inevitable, although they believed it would be detrimental to the country's prosperity. Consequently while public hearings have been held and different interests have been heard, there was a general feeling that the dye was cast and the administration tariff bill would be passed, and become a law without any material changes from the form in which it passed the Ways and Means and the Finance Committees of the two houses of Congress. This bill went into effect as soon as it had received the signature of the President. It reduces the average percentage of the tariff rates, as compared to the value of all imports of merchandise, as estimated by experts of the treasury department, by about 10 per cent, the average rate under the new law being 27 per cent, as compared with 37 per cent under the old law. In addition to the reduction in rates, the value of annual imports added to the free list is estimated at \$147,000,000. The estimated revenue from all import rates is estimated under the new law to aggregate \$249,000,000 as compared with an aggregate of \$305,000,000 under the old law. This deficit is, however, more than made up by the increase in the revenue from corporation and income taxes which, under the new law are estimated to aggregate \$122,000,000, as compared with \$37,000,000 under the old law.

It is estimated that this law makes a reduction of nearly one-half in the average tariff on foodstuffs and farm products. As every Farmer reader knows, besides making this general reduction in duties where same are still levied, many important products of the farm have been placed on the free list, including wool, live stock and meats, flour, potatoes, etc.

The sugar schedule is also of interest to the farmers of Michigan for the reason that the raw material for this manufacture is an important product of Michigan farms. Here the tariff is substantially reduced with a provision for the placing of sugar on the free list in 1916. There are, however, some compensating features of the law from the farmer's standpoint, including a general reduction in tariff rates on all important articles of common use which might be classed as necessities, a reduction of nearly two-thirds in the rates on woolen clothing of the cheaper grades and of about one-third on cotton clothing, while lumber, coal, iron and many classes of farm machinery are placed on the free list.

So, notwithstanding the fact that the farmer seems to be discriminated against in this tariff law, due to the democratic adherence to the principle of free raw materials, it would be the part of wisdom for the farmers of the country to await the outcome of the "proof" in this case calmly, secure in the knowledge that their industry is too great and too important to be permanently handicapped by any legislative policy which is inimical to its best interests. Let the "proof" be a fair one, to the end that we may add something to the sum of human knowledge regarding the true economics of this vexed question from the experience gained through "eating" the pudding.

Those who followed the sessions of the Third American Road Congress, held in Detroit last week, could not but be impressed with the educational value of meetings of this kind. Here were to be found enthusiasts favoring every form of road improvement by every municipal division in the country from the nation to the township. Here were also to be found experts in the construction of different types of roads, highway officials and laymen, all interested in the permanent betterment of the highways, but from different standpoints. There were advocates of a national system of trunk highways to be built and maintained by the federal government, advocates of national aid for state built highways to be built on a similar plan, advocates of different types of permanent roads, etc., and, last but not least, strong men who spoke for the farmers living on the 95 per cent of the roads which can never be improved within their time by any of the methods above outlined. And it is a matter for congratulation that in this great meeting there was such a strong undercurrent of sentiment favorable to the betterment of the earth roads along with the main or trunk roads to a state of economic efficiency, rather than the reverse.

In this connection, there is no question that the sentiment of the country people throughout the States and Canada was reflected in the attitude of the highway officials who were their official spokesmen at this meeting. Nor is there any question but that the voicing of this sentiment in no uncertain manner will have its effect in modifying the views of extremists who have looked upon the highway problem from the standpoint of the development of a system of main traveled or trunk roads as the only proper beginning and the main object of road improvement in this country. On the other hand, the participation of big men in this movement for the improvement of the highways of the country on a big scale cannot but have a liberalizing influence on those who have held a narrow view of the relation of better highways to the prosperity of the country and its lesser municipalities.

Thus the great road congress held here last week cannot but have a harmonizing as well as educational influence upon all who participated in its deliberations and pass into history as an important factor in bringing about the solution of this vexed problem of improving and maintaining our vast mileage of country roads.

Over in the state of Wisconsin, school principals of 72 towns have agreed to adopt the plan of a state-wide social center organization proposed jointly by the State Department of Education and the University Extension Division. We have not at hand the details of the plan but the general scheme as announced, is to get the adults of the community to the school buildings for the purpose of arousing their interest in topics of community and social welfare.

With the changing conditions of country life has arisen the apparent necessity

for work of this kind, especially in communities where voluntary organization has not developed to any considerable extent. Where the Grange and the Farmers' Club have become strong, as has been the case in Michigan, this need has not been so noticeable as has been the case in less favored localities. Yet there are dozens and hundreds of rural communities in Michigan which would be the better for an awakening along social lines, and the social center movement, whether it has its origin in and centers about the country school or the country church or both, would be welcomed by the thinking people of these communities.

In the stage of transition from the old conditions of country life to those which will mark future generations of our farmers, we are passing through a period when there is need of a general awakening along social lines. The better way for this to come is through the initiative of the people themselves, but in case this development is not sought or promoted by the people of any community, outside agencies such as that above noted, may do much good.

When one travels out from any of the big cities of the state in any direction on any of the numerous trolley lines, he is impressed with the extent to which city people are locating in the country on small parcels of land. Nor is it the wealthy or high-salaried city man alone who is getting out into the country, but the wage earner as well, who buys perhaps an acre lot sufficiently near the car line to enable him to get to and from the city and thus follow his occupation there as a wage earner, while his family have the advantages of the country. Truly, agriculture is coming into its own when town-tired people of every class are seeking a home on the land, as is the case today.

And in the country there is employment for all who have not land of their own, at remunerative wages. During these busy harvest days of autumn farmers are looking for help instead of workmen for a job. Yet, while the city industries are prosperous and labor is generally well employed, almost any day throughout the year one may see thousands of men seeking employment at the various factories or employment offices, while the high cost of living remains for them, temporarily at least, an unsolved problem.

In these facts should be food for thought for the observing country boy, who is just facing the choice of an occupation. All cannot be farmers nor are all fitted for the farm by inclination or ability. But, other factors being equal, the country boy will do well to carefully consider the relative advantages of town vs. country opportunities before deciding on a city occupation.

The passing of the Agricultural Fairs. brings reports of successful agricultural fairs, not alone of the state and district fairs, but of the county and local fairs as well. It is a matter for congratulation that the county and district fairs are better attended than was the case in former years. Possibly the larger attendance is due to the fact that these fairs are made more entertaining than educational in character and in very many instances they have become more general meeting places of people of the community where sports are enjoyed than really typical agricultural exhibitions.

But a good crowd is the first requisite for a successful fair and a little effort expended by the management of any of these fairs during the coming year will remedy whatever educational defects they may have had in previous years. The revival of interest in local and county fairs is a matter for congratulation and an improvement in their educational value should be made the next step in their rehabilitation.

A MILLION PEOPLE AT ONCE.

By putting an advertisement in the Michigan Farmer and the other standard farm papers, an advertiser may reach, simultaneously, a million farmers' families.

Think of speaking in a million homes at one time—of telling them all at once of a better piano, or plow, or engine, or automobile, or any one of a thousand articles that nowadays are being advertised in the farm papers.

Is it any wonder that advertised goods are well known and popular, and that the manufacturer who advertises can well afford to give better value for the price?

HAPPENINGS OF THE WEEK.

National.

Mine operators of the copper district of Michigan will ask the Supreme Court at Lansing for an injunction prohibiting the strikers and the Western Federation of Miners from doing acts of violence, intimidation and picketing. An injunction was dissolved last week by Judge O'Brien, of the circuit court, and it is from this decision that the operators are appealing.

The case of Harry K. Thaw has been further postponed by Governor Felker, of New Hampshire.

On her first trip from New York to Hampton Roads, the Battleship Arkansas made a new record for speed, averaging 21.41 knots per hour for a period of four hours. The battleship averaged 19 knots per hour for 20 hours without extra effort.

A delegation of 1,000 men from the different states of the union will make a personal call on President Wilson to petition the chief executive to urge an amendment to the federal constitution to prohibit the traffic in alcohol in America.

The impeachment court of New York state is proceeding with the trial of Gov. Sulzer, the defense of the executive now being made. The outcome is difficult to guess because of the conflicting testimony and the large number of factors entering into the trial.

The National Committee of the republican party will meet in Washington on December 16, to confer on party matters, and take any action which may seem advisable.

The seventh annual convention of the Society of Industrial Education will be held at Grand Rapids, October 19-25. Prominent educators from all over the country will be present and will address the session.

After eight days' imprisonment in a mine near Centralia, Pa., a miner was rescued by his fellow workmen, Sunday. Dr. James B. Angell of the University of Michigan, has been resting easily since an attack of pneumonia last week. His chief difficulty now is the annoyance of a persistent cough.

The bureau of mines of the federal government reports that during the first seven months of this year the number of fatalities number 1,437, as compared with 1,419 of last year. The state of Pennsylvania leads the list with 763 deaths and Ohio 99, Illinois 97, and Alabama 55.

Ernest Kemp, an aeronaut, was drowned in Thunder river, at Alpena, Mich., October 3, while making a balloon ascension from the fair grounds.

Detroit is likely to become a more important city for the distribution of meats than it has been. The effect of the new tariff law has already encouraged one large Chicago packing company to secure a site for a large meat packing plant at this place. This is largely the result of the new tariff law, since live stock will reach the Detroit market from Canadian points as well as from Michigan and other points.

The Senate currency committee has voted to continue the hearing on the currency bill until October 25, when the committee will take the bill under consideration.

On Monday night of this week social center openings were held in several of the Detroit schools, the movement is to give the students wholesome amusement. It is estimated that 1,000 were at the opening sessions.

The news has gotten out that plans are well under way for the construction of an electric line connecting Detroit with Grand Rapids by way of Lansing.

Foreign.

It is reported that the rate on foreign money has advanced, the Bank of England now charging five per cent as their discount rate.

Wireless messages indicate that the steamer Spokane has been wrecked off the coast of Lazoo, B. C.

Thirty persons are believed to have been drowned by the sinking of a military tug at Rio de Janeiro, Brazil.

Former President Theodore Roosevelt left for an extended tour of South America last Saturday. He will lecture at several points on "Democracy."

The effect of the new United States tariff has been to advance prices of meats in Canada and already the packers have notified their patrons that meat prices will go higher, owing to the opportunity of sending meat into this country where quotations rule above those in Canada. Besides much live stock has been gathered up for export to Buffalo, Detroit and Boston markets.

It is reported that Nome, Alaska, has been almost completely destroyed by a storm. Fully two miles of the territory along the coast was devastated. The electric light plant and telephone service was demoralized. The loss of property is estimated at one million and a half. No loss of life was reported. Aid is being rushed to the unfortunate people.

The International Law Congress recently held at Madrid, Spain, has recommended the standardization of Commercial Laws, especially as regards international bills of exchange and checks.

Fourteen persons were killed and 20 injured when the express from Kieve, Russia, to St. Petersburg, collided with a locomotive near Dvinsk.

Prof. Henry C. Adams, of the University of Michigan, will leave Thursday of this week for China, where he will assist in straightening out the financial difficulties in which the treasury of that country has found itself.

Yuan Shi-Kai has been elected President of the new Republic of China. There were 21 other candidates campaigning for office. Under the constitution of the new Republic it is necessary to have two-thirds votes of the united houses of the parliament and this the successful candidate received on the third ballot. The term of office is for five years.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

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.

RECENTLY the Michigan Farmer gave its readers a story and picture of a relic of the days when wheat and corn in Michigan were ground by water power. Here is one that has to do with an old-time ferry having one of the most unique records in stream-crossing history.

This ferry is operated, and has been, for fifty-six years, across the Kalamazoo river at Saugatuck. In a period covering more than half a century it has been run under the management of less than ten men. In that time it has had more queer accidents, with fewer fatalities, than is experienced, usually, in handling human and animal life.

In its time this ferry has carried at least three growths of hard and soft timber from a strip of country between the Kalamazoo and Lake Michigan. The original town that commenced with this ancient ferrying contrivance is now buried in sand from human sight. For building operations, the ferry carried hundreds of thousands of feet of lumber back across the stream whence once it removed it. It has handled the farming, road building, and resort business of probably five generations of people, including their funerals, weddings, reunions, equestrian schools and artists' classes. Upon this ferry have been rolled houses which have been ferried from one side of the river to the other, and a now lively little fellow narrowly escaped being born in the middle of the Kalamazoo as one of the results of house-moving feats.

It is told by one of the oldest living ferrymen that originally the craft was poled across the stream when there was thirty-six feet of water in the Kalamazoo, but in nearly all of the time it has been pulled by a rope stretched across, or

The Old Saugatuck Ferry.

By J. L. GRAFF.



The Old Saugatuck Ferry in Mid-Stream.

by the chain method which is in use today. This chain is strung across the river, but with one turn around the drum of a windlass. The turning of a crank at the side of the boat winds the craft back and forth, the eight hundred pounds of chain resting on the river bottom when not in use.

In fifty-six years one man was killed by fractious horses and his body dragged into the river, but out of a great number of other accidents no other human life was lost. One man drove his team clear off the boat; the wagon box floated off the running gear, carrying the driver

with it. The man was rescued but the horses were drowned. Twenty-five years after this accident the running gear of the wagon was fished out of the river without a vestige of the harness of the horses. The tug cock-eyes had become detached from the whiffles, and the horses had carried away the neck-yoke with them.

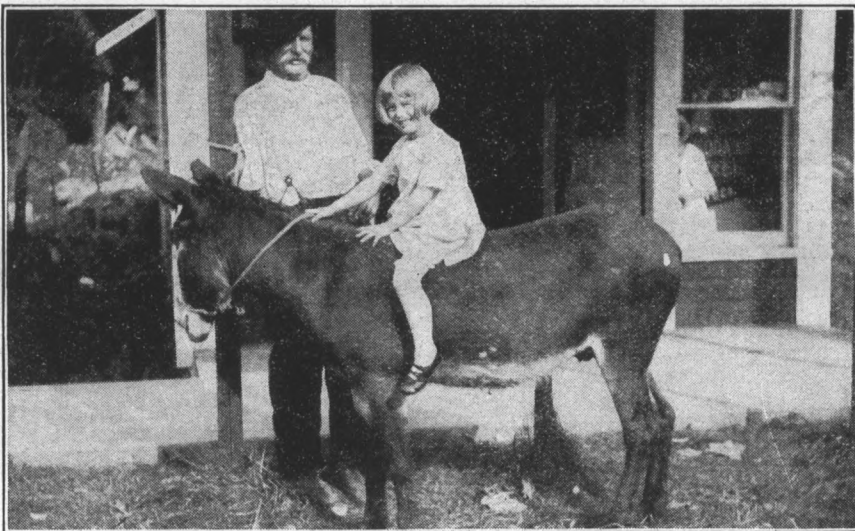
A woman drove a colt, hooked to a buggy, upon the boat; the colt jumped over the rail and hung by its harness; it was cut loose and swam to shore unharmed. One man unthinkingly caught hold of the chain and the boat was pulled

from under him, while another drove a team down the inclined approach clear over the end of the boat. One ferryman died at his post in the ferry shack, the unanswered ferry bell causing the shack to be broken into where the ferryman was found dead upon his couch.

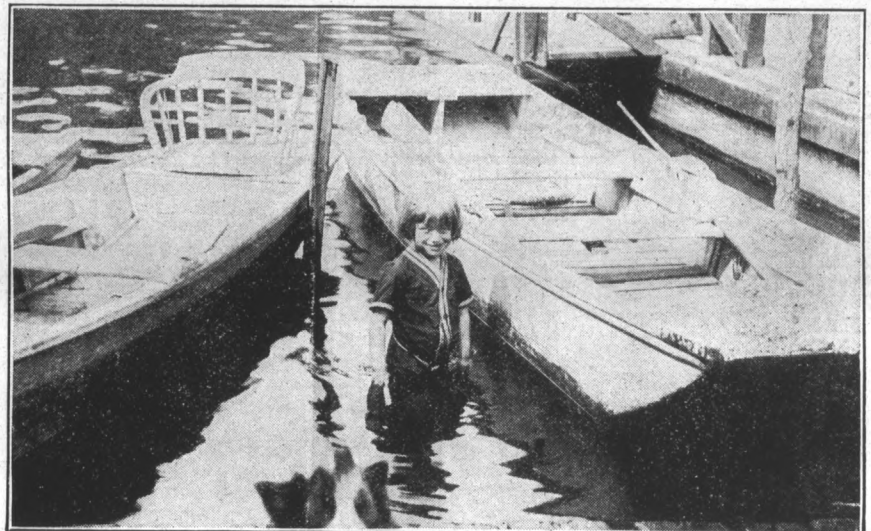
The ferrymen who have had charge of this quaint old contrivance since 1857 are, in the order of their service, named as follows: Darius Billings, Solomon Stanton, Elijah Mayhew, Harvey Fuller, Walter Billings, Oliver Stanton, Samuel Wheeler, William Slater, Randall & Adams, and Jay D. Myers, the present ferryman. The franchise covers the entire village of Saugatuck, which extends clear across the river and 800 feet out into Lake Michigan. Today this ancient ferry is earning the village over \$500 a year. All above that amount goes to the ferryman.

The present ferryman, Jay Myers, says that some people have approached him with the proposition of substituting gasoline for hand power. He declined, saying that that would rob the ancient craft of its chief charm. People ride across the river for no other purpose than the novelty of being wound across. Where once there was but a single boat and one chain there are now two boats and two chains. Some people were afraid to go across with horses; others were too timid to ride in row boats, so Jay built a second boat and now ferries his people any way they please to have it done.

At one time Myers had a dog for a fare. The animal belonged to an old soldier who lived alone. The canine would not swim, but when he wanted to cross he'd sit up on his haunches and howl so dismally that Jay would have to go and get him to preserve quiet in the village.



Ferryman Myers and his granddaughter, the little Mascot of the Ferry.



Two of the Row Boats and a Little Bather at the Ferry.

BOYS, look around the place for Zeke. He failed to come for his feed last night, and I can't see anything of him now," Mother called to us from the open kitchen door.

Zeke was a fair specimen of the "razor back" hog of the southwest, and with the cow and team of ponies constituted the sum total of our live stock. He was a lank, grizzled barrow three years old, and had never yet manifested an inclination for fattening.

We had sold our little Missouri home the year before and, on the advice of friends and the family physician, had moved to New Mexico, where Mother had taken up a homestead. This move was not altogether for Mother's health; but with three boys, one of them large enough to do a man's work, it seemed to her the best thing to do.

Our experience on the new homestead had been similar to that of other settlers. Water had been hard to get, and not of the best; coyotes had caught the chickens, jack rabbits had eaten the garden

vegetables as fast as they came up, and in a section where farming had never been considered a decided success, we were all beginning to regard the venture as a failure. Yet the fact that Mother was improving in health compensated in a large degree for all the difficulties we had encountered.

With three robust boys, the oldest twenty years of age and the youngest fourteen, Mother had felt no fear of being unable to cope with any difficulty that might present itself, though now had come a time when our little surplus had dwindled to nothing; there had been nothing added to it the first year, and one misfortune after another had overtaken us.

My oldest brother, Henry, was at Ala-

mogordo, sixty miles away, at work on the new railroad that was being built through the country, and at this time his earnings constituted our sole means of support.

With Ben, my younger brother, I had been left at home to take care of what little we had left of the stock, get mesquite roots for the winter wood supply, and to help my mother.

The life on a prairie homestead had not been without its pleasures. There was plenty of sport. I had killed a wolf, while Ben had shot his first antelope, and there were always new things for us to see on our long trips over the prairie or in the foothills.

Once or twice we had been across the divide west of our cabin, and had come

The Ezekiel Strike.

By HUGH F. GRINSTEAD.

across the abandoned "dry diggings" camp where several hundred dollars in gold had been taken out several years ago. There were three old miners' shacks here. There were no sluice boxes or other equipment, for the gravel and sand had been carried on the backs of burros five miles to a spring on Salt creek where it was washed. These laborious methods, and the fact that placer gold had never been found in paying quantities, even with an abundant supply of water, led to its finally being abandoned. There were prospect holes all over the hills in the neighborhood, but the quartz lode, supposed to be the source of the placer diggings, had never been located. There were some who had faith in the existence of such a lode, and every year or so some prospector would try his luck in the canyons and hills.

One of my most pleasant day dreams had been the finding of that quartz lode, and a trip to the old dry diggings held more than ordinary interest for me. I had learned what gold-bearing rock was

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like from specimens sent us by an uncle who lived in Colorado.

Our homestead was on the bench land, with the rough foothills of the Capitan mountains to the west, and the undulating prairie south and east. A few miles south of us were the headwaters of Spring river. On this bright spring morning when we started out in search of old Zeke, we took the cattle path to the scrub oaks on the foothills back of the house. Here grew a few stunted walnut and oak, and we reasoned that the hog would be likely to go in this direction if he had strayed, and if he had been taken by wolves or a cougar, we might see tracks of the beast. When on top of the little hill we could see all about us for miles east and south as far as the Hondo breaks. Away to the north El Capitan stood like a sentinel in the bright sunlight.

A little farther on we came to hog tracks leading down the slope to the west and, keeping on in this direction, we would at intervals catch a glimpse of the impression of Zeke's foot in the dry sand. He was apparently headed for the ravine near the old mining camp so, without looking for more tracks, we hurried on and found, in one of the cabins, signs of where he had made his bed the night before. For an hour or more we scoured the prairie to the south, and up the slope toward the canon, without catching a glimpse of hog or tracks.

When we had about given up the chase, Ben called my attention to upturned sod that seemed to be the work of Zeke's snout. It was almost in the bed of the ravine, so we followed up the dry bed and were soon rewarded by seeing unmistakable hog signs leading toward the rocky ledge above.

It was now after noon, and the sun was warm, so we concluded that our hog would be somewhere in the shade of a bush or rock, most likely up the branch a piece where the rocky ledges came near together on either side.

We came upon the hog's trail where the rocky slopes came down sharply, and from there on were able to follow it. He had turned up the slope obliquely, in the direction of a cleft in the rock where we had once trapped a coyote, and where there were a number of other dens which we had taken for the habitations of wolves or maybe wildcats.

Stepping from rock to rock, and intently examining the ground for hog signs, I became suddenly aware of a commotion nearby but was unable to locate the direction. I called to Ben, who was farther down the slope, and after he came up to where I was we both listened for a few seconds, hoping to hear the noise again. We had but a short time to wait, and this time there was no mistaking the direction. It seemed to come from beyond a clump of mesquite, and was a combination of growls and squeals.

Making our way quickly toward the place, we found, instead of the level ground we had expected, a large hole about twelve feet deep, about the same length, and scarcely a yard wide at the top. There was more room at the bottom, since the side walls of rock were overhanging.

At the bottom of the hole we beheld a sight that is not easily forgotten. At one end, his bristles raised, small eyes dancing, and jaws champing, stood Zeke. Opposite him, and as far away as it could get, crouched a lithe body of a tawny color. It was lashing the ground with its long tail, all the while watching every move of the hog. It took no second look to tell us that our hog was in close quarters with a cougar.

This trap into which the animals had fallen seemed to be a continuation of one of the large cracks in the ledge a few yards above us, and had partly filled with earth near the top. The hog had probably fallen through, and the cougar, seeing him so effectually trapped, had gone in for a meal of fresh pork.

However, it crows any animal to find that it is trapped, and the beast had evidently been making efforts to escape instead of eating Zeke. We could see where it had struggled to climb the slippery overhanging wall, and at one place had almost reached a firm footing.

As soon as the cougar saw us it made one mad leap toward freedom, missed its footing, and fell back on the hog. This, and the knowledge that help was at hand, gave Zeke courage, and the cougar was no sooner down than he was upon it, attacking it furiously with his sharp tusks. The hog had taken a grip on the shoulder of his assailant, but the big cat was soon loose and away in its end of the pit, getting ready for a spring.

I saw that it would soon be over with

Zeke unless we interfered. The cougar now seemed to have forgotten our presence, and before we could make a move it had landed on the hog; but, in such close quarters it had not been able to hold him, so that Zeke was now in the other end of the pit, backed against the wall.

If we had brought a gun along the fight would soon have been over. I called to Ben to bring some large stones, at the same time pulling up a half-buried mesquite root and running to the lowest place in the wall. I thought we could drop the rocks on the cougar and kill him that way, but soon saw my mistake. With the first stone that struck him he made straight for us with the velocity of a cannon ball, and came very near getting out.

Zeke made another pass at the cougar as it fell back and this time succeeded in getting one of its paws in his mouth. For the next few minutes we could see nothing but bristles and the tawny fur. On account of there being no room for a spring, the cat was at a disadvantage, and as soon as they came apart we began pelting it with stones, this time with better effect. We succeeded in stunning the cougar so that Zeke, emboldened by the help he was getting, made a rush on his adversary that took the fight out of the big cat for awhile. It seemed about ready to give up the fight in the face of such odds, or it was waiting to make another rush on the hog. While it was crouched with its head on its paws I dropped a big stone, weighing at least fifty pounds, right upon the bulging head. This was all that was needed and, as the long muscular form stiffened in the last struggles of death, Zeke buried his nose in the damp earth and with a grunt of satisfaction rolled over on his side as he would if he had been in his pen at home.

When we were sure that the cougar was dead we went up the hill a short ways for a scraggy dead scrub oak, with which we began digging down the earth bank at one end of Zeke's prison. It was hard work, and took us two hours to get down near the bottom on an incline so that the hog could walk out.

Zeke was pretty sore, and it was with difficulty that we could induce him to make an effort to move. Finally, by one of us going before, we got him to the top, whence he limped off toward home.

We now turned our attention to the cougar. It was not a large one, but we were as proud of the catch as if it had been done in true sportsman style. We took the beautiful sleek skin off, and I was just climbing out when Ben, who had been scraping away the dirt in the bottom of the hole called me back with an exclamation.

"Why, look here, Julian!" he cried, excitedly, "this rock is like the specimens Uncle Bob sent us from Colorado last summer!"

Sure enough, here was gold-bearing quartz of high value, and a hasty examination showed that the lode was extensive. Zeke had discovered the mine that hundreds had been searching for!

We still live on the homestead, and the profits from the "Ezekiel," as we named the mine, has made it a home that is all we could desire. Zeke still roots around the ranch, has never grown fat, and never again has shown any inclination to leave home.

BREAD UPON THE WATERS.

BY ORIN E. CROOKER.

When the late Charles Kendall Adams was inaugurated president of the University of Wisconsin some twenty years ago, a little incident occurred which well illustrated how a kind deed—like the proverbial "bread upon the waters"—may return in later years to gladden the heart of the individual who performed it.

Toward the close of the inaugural exercises, which included speeches from a number of men of national reputation, Professor John C. Freeman extended the welcome of the Wisconsin faculty to the new president. Dr. Freeman, who died recently, was a distinguished Shakespearean scholar and man of letters. He also possessed rare oratorical powers, which, had they been developed in the halls of state or on the stump would have brought him wide renown. During his masterly address on this occasion his audience sat spell-bound, but it was not until the close of his speech that he began to tell of the incident in question.

"Over a quarter of a century ago," he said, "a young man in a faded uniform applied at the University of Michigan for admission. The war between the states,

UNCLE HI'S PHILOSOPHY.

BY WALTER G. DOTY.

"It is plain," says Uncle Hi, "Life is jest a school fer livin'. What we learn here we'll apply. When we git along to Heaven. Makin' blunders ain't no crime; We'll do better 'nother time."

"Ef you think this world is all, Go outside and scan the stars. Makes a feller feel some small— Like a pimple up on Mars. Think they peopled jest this styful, When they had a whole blamed skyful?"

"Life's a everlastin' force, Same es heat or gravity. You kin stop my breath, o' course, But you can't nohow hurt me. Life's the steam the engine feels, Death, the rust thet clogs the wheels."

"Tell you, sonny, what it is: Old Experience ain't no fool. I've learnt more from rheumatiz Than I ever learnt to school. When you've learnt to ache an' smile, You've learnt somethin' thet's worth while."

As I see him sitting there— One arm gone since sixty-four— Patient, in his easy chair,

Where the firelight flecks the floor, Somehow it agrees with me, Uncle Hi's philosophy.

from which he had just returned, had made sad havoc with his education. He was unable to pass the required examinations, and the doors of the institution of learning at which he had timidly knocked refused to swing open to allow him to enter. He turned away, disheartened and crushed.

"At this hour of utter discouragement a young instructor, who had learned of the young soldier's hopes and ambitions, interested himself in his behalf. In ways best known to those familiar with the workings of a great educational institution, he gained a re-consideration of the young man's case. As a result, the doors which had refused to open at his own knock now swung wide enough to permit him to enter. To the soldier boy it was the beginning of life, the fulfillment of his cherished dreams.

"Years have passed since then," Dr. Freeman continued. "After graduation the young man went his way, never again until recently to clasp hands with the instructor who befriended him. But now," he added, turning to Dr. Adams, "the boy in the faded uniform welcomes to the presidency of the University of Wisconsin his benefactor of over a quarter of a century ago."

There were few dry eyes in that assembly of people when they realized that in the polished man of letters upon the platform they beheld the soldier boy who would have been denied the opportunity of gaining an education had it not been for the new president who was being inaugurated that afternoon.

Both men are now gathered unto their long rest, and sleep not far apart on the same slightly hill from which can be seen the dome of the main building of the state university at Madison. The little deed of generosity and kindness, exemplified in the incident here given, constitutes an imperishable memory that time cannot efface. It lives today in the heart of every individual who witnessed that inaugural ceremony. It has pleaded its cause in a thousand lives, and in ten thousand ways has undoubtedly repeated itself.

"Why ain't you at school, little boy?"

"I stayed away on account of sickness."

"Who is sick?"

"The truant officer."

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How to Train Dogs.

By CARL SCHURZ LOWDEN.

THE secret of training a dog to do little tricks is kindness and patience and persistence on the part of the trainer. He must win the confidence and sympathy of the animal, and to do this he must never be unkind or harsh or cruel, nor must he lack in hearty commendation of even the poorest attempts of the dog to do what is asked of him. Sometimes it is necessary to be strenuous to the point of striking the dog, for at all times the trainer must have absolute control over his subject and he must never let the dog think it can with impunity disobey him.

Burmeister, a professional trainer of Berlin, Germany, tells of his early efforts to train dogs when he was in America and before he located at Berlin. Of our great American showman he says:

"Mr. Barnum was watching me one day while I tried to teach a fox terrier puppy to jump a stick I held in my hand. The dog became confused and would not obey me. I suddenly gave it a hard slap; then it became unmanageable, and I had to give it up for that day. Seeing my unusual temper, Mr. Barnum turned to me and said:

"You'll make more headway with patience and kindness. It may sometimes be as necessary to strike an animal as a child, but I think that in the long run patience and kindness accomplish most."

"Of course I remembered this and, as I grew older, I plainly saw that all animals are best controlled by those two virtues."

Generally speaking, a trained dog is much more desirable than one that is comparatively untrained. A trained dog can entertain his master and help him to pass away hours of depression. It is also a great pleasure to teach tricks to the puppy. While it requires some skill to do this as it should be done, anyone with patience and kindness and some understanding of how a dog thinks can accomplish a gratifying result.

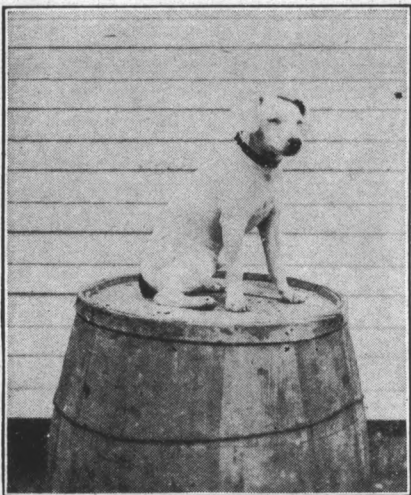
Probably the little trick most easily acquired by the puppy is that of jumping when the command is given. To teach him this, place him in the corner of the room. Then you kneel down in such a way as to pen the little animal. Then, with a bit of meat or some choice morsel in your hand, command the dog to jump. He will be over you and have the meat before you can say "Jack Robinson." Now don't stop here. If the dog has done reasonably well for the start, pat him on the head and speak reassuringly to him, letting him know that you are pleased. It is natural for him to wish to please his master. Try it again. If, after several trials, the dog seems tired, do nothing more until the next day. But remember that when you have taught the dog his first trick, and he knows it thoroughly, you have one-half the battle, for all the other tricks are merely supplementary. Getting a start is the hard thing. Every time the dog satisfies you, lavish praise on him. Finally by persistence you will have him trained so he will attempt to jump anything.

There is an old maxim that was true when it was written and is true today: "One cannot teach an old dog new tricks." Furthermore, one cannot teach an old dog old tricks; one cannot teach an old dog anything, unless the animal is an exception. The time to train a dog is as soon as he reaches the age at which he is strong enough and physically able to do what the nature of the tricks requires. A young dog easily assimilates an idea, is very sensitive, and conscientious. An old dog cannot remember.

When certain elementary tricks have been taught a dog he is ready for those that are complicated. For instance, it is great fun for children to have a certain dog I know come into the room and "take off his hat and stay awhile." To the dog this command means to sit down behind the stove, and it is really marvelous how quickly the dog catches the command. His master may be sitting at a desk and never look up when the canine enters, but when he hears those words the dog complies.

There is a certain chair in the house the master uses for a certain trick. No commands are given. When the chair is brought the dog leaps upon it and assumes an attitude of prayer. He knows the meaning of that particular piece of furniture.

Shaking hands is easily taught. Place



him in a sitting position. Give him the command "Shake," speaking it clearly and distinctly and without any show of temper. The dog will not comply, for he does not yet know the trick, but this is the way to teach him. Ask him to "shake" again, and repeat. If too much of this is done the dog will become confused, but if just enough is done you will have his closest attention and he will be in a frame of mind eager to please but ignorant of the specific nature of the thing demanded. In this condition he will most quickly grasp the knack of the trick. Now is the time to give him the command and forcibly lift his paw up and shake it. Then do not fail to pet him effusively as if he had saved your life. Now repeat, and his paw will come up much easier when you lift. He is mastering the trick. Be sure to stop before he is fatigued. A dog tires quickly. But keep on trying the next day, the next day, and so on. You will be both surprised and delighted at the progress made.

The trick of shaking hands can be made very amusing. When the dog becomes accustomed to your command of "shake," you can discard it and substitute "right," "left," and "both," and teach him the meaning of each. Another method is to teach him that the first command is for either foot but that he must alternate. When he knows what you wish him to do you can ask him to "charge," "flank," "march," "present arms," etc., and he will alternate perfectly just as if you were saying "shake" each time. However, such variations as these should not be attempted until one has the dog well under hand.

I will tell you how one dog was taught to snarl, when commanded to "make a face." He was placed in a sitting position and his paws grasped by the trainer. Sufficient force was applied to the dog's paws to make him uncomfortable and of course the outward expression of the dog was a snarl. He had been made to do the trick. Then he was petted. Gradually the command was sifted into the process and gradually he associated the command with his own snarl. But it took some time to teach him this trick, and that is probably due to the fact that the method was itself cruel.

Do not be disgusted because the dog does not learn fast. There are several factors that enter into that—breed, environment, climate, health, disposition, etc. Be patient and quick to appreciate the dog's capacity. Be kind, for a dog does not forget a kindness, and never cause a dog to distrust you for he will never forget it and thenceforth you can scarcely teach him anything.

One amateur trainer found great satisfaction in teaching his dog a sufficient variety of tricks that, no matter where he would go with the dog, the animal was a continual amusement to his master. He always spoke to the dog in an ordinary tone, just as if he were walking with a boy companion. These are the words and commands which the dog understood: Speak or bark, jump, shake hands, dig, smell, listen, look, watch, sit down, lay down, put his head down, play hide-and-go-seek, bite, make a face, say prayers, sit up, beg, wag his tail, pick up objects, eat, run, run faster, rats, chickens, cows, hogs, birds, squirrels, rabbits, cats, horses, sheep, cows, etc. In fact, this dog was as helpful as an errand boy and there seemed to be no end to his ability to learn.

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Woman and Her Needs

At Home and Elsewhere

Critisizing Parents Before Children.

OF all important things in life, the bringing up of a child is surely the most important. Yet how many there are who marry and bring children into the world only to let them come up haphazard, learning the few things they do learn in childhood on the streets. Many more there are, with the best of intentions, who fail lamentably because of ignorance. And others allow interfering relations to start their children on the wrong track, when a firm stand on the part of the parents would stop all that.

If there is one child whom I pity more than another it is the luckless one who is "the only one" in a large circle of adoring uncles, aunts, cousins and grandparents. He certainly is deserving of all the pity we can give him. Each of the adults feels that he should have a voice in the little tad's soul culture, and to a relative not one fails to be heard.

Such a little codger lives across the street from me now. He is a dear little rascal, healthy, stout, rosy and originally good-tempered. But alas and alack, his poor little soul is being buffeted about and his temper worn to shreds by his adoring aunts, cousins and grandmamas. Never an afternoon passes but a colony of them meet at his home to see how the little darling fares. He would fare fine if they would stay away, he has been doing beautifully all day alone. But when the feminine regiment convenes troubles loom up thick and fast for babykins. He is just at the exploring age, and after he has been passed from hand to hand for each one to kiss and cover with microbes, and is finally set down, he starts out on a journey by himself, perhaps down the porch steps to the yard, or up the railing to hang delightfully head down and fat legs waving in the air. Immediately there is a chorus of squeals and the visitors in a body pounce upon "little precious" and bring him back into captivity.

Vociferous protests from his lordship result. He has been exploring alone all morning and never got hurt. His mother feebly tries to take his part, but she is promptly squelched. What does she know about raising children? The idea!

Everything the poor kiddies does, that brigade seems bound to find danger in. He might get microbes from his rubber ball, of course he could get none from the kisses they smother him with. Wooden toys are dangerous not only because of the paint and varnish he might suck off, but because he might run slivers in his little fingers. An iron toy might fall on his precious little toes and smash them. In short, the only safe thing for the poor child to do is to sit on someone's lap and be rocked and adored. Being masculine, and two years old, he abhors this, and expresses himself against it loudly. The afternoon for the kiddie, and the neighbors, is spoiled by the well-meant, but idiotic, antics of his worshippers.

In two years more that child will be an outlaw or a hypocrite. Either he will defy the whole body of female relatives, or else he will tamely submit to them through fear, and hate them in his weak little heart. In either case he will have a moral twist that is not right, and all because a few women do not know the folly of attempting to bring up some other mother's child.

Every family has some trouble that way. There is always some relative who understands the child better than his own parents possibly could, and could give Froebel points on child training. That might not be so bad, if the wise one could keep his information to himself while the child is about. But 99 cases out of 100 he criticizes the parents before the child, and tells how things would be done if he were "boss." Such talk never does any good, and always does positive harm. It sometimes makes the child hate the adviser, sometimes makes him doubt his parents' wisdom, but never makes him change his course.

If I had my way, I should make it a state's prison offense for anyone to crit-

icize a parent before his child. In extreme cases it is right to talk to the parent privately. Usually, however, matters between parent and child can be adjusted ten times more easily if outsiders keep their sage advice to themselves.

DEBORAH.

HOW TO IRON.

Before beginning to iron have everything in readiness—paraffine or beeswax, a heavy paper on which to test and clean the irons, a dish of water, and small sponge for dampening surfaces which have become too dry to iron or need to be done over. Stand the ironing board where the light can fall directly upon it, with the ironing stand at the right and clothes basket on a chair at the left. Place a rug to stand on so the feet and limbs will not ache quite so much from the standing. The height of the ironing board should be regulated to suit the convenience of the ironer. The early part of the day is the best time to iron. It is far better to take two mornings to finish the ironing than to keep at the task after physical weariness makes it a drudgery. Table linen should be sprinkled very damp. Bed linen and towels require very little dampening. Sprinkle dresses, waists, skirts, handkerchiefs, lace and embroideries well. Roll each piece tight and place in clothes basket previously lined with an old sheet. When the clothes are all placed in the basket, cover with a heavy cloth. Everything irons more easily if clothes are sprinkled the night before, thus distributing the dampness evenly. In the summer time clothes will mildew if allowed to stand too long before ironing. Sprinkle only as many pieces as can be easily ironed at one time.

See that the irons as well as the range are perfectly clean before placing them on to heat. Give the iron a good steady pressure, lifting from the board as little as possible, and iron the piece until finished. Take the sheets first, giving extra pressure to the hems. Towels may be ironed on the sheets and in that way the sheets are ironed with less effort, moving the sheet after each towel is ironed. Pillow cases may be treated in the same way. The flannels, knit underwear and stockings are better from a hygienic standpoint folded and put away unironed. Iron table linens thoroughly dry with good hot irons, using a strong pressure on the right side lengthwise and parallel with the selvedge, this brings out the pattern and imparts a satiny gloss, leaving it dainty and soft. Iron napkins on the wrong side first and then finish on the right side. Handkerchiefs are treated in the same way. Iron all embroideries on the wrong side. Ruffles are ironed before the body of the garment, going well up into the gathers with the small point of the iron. Bands and hems are ironed on both sides. Colored clothes, lawns, percales and chambrays are ironed on the wrong side. Too much ironing will yellow thin fabrics and as they dry out quickly it is necessary to iron rapidly with a moderately hot iron. Skirts and dresses are easily and quickly ironed by ironing the waist part first, then slipping the board through the skirt, taking care to have something beneath to prevent them from touching the floor.

To iron a shirt waist, iron the collar and sleeves first, then the body of the waist. Press shoulder seams on the inside until dry. Hang on a coat hanger. The secret of ironing is to iron each piece dry, especially dresses, waists and skirts, taking care that the folds, seams and tucks in each garment are dry. As each piece is ironed hang on bars or line until thoroughly dried and aired as a certain amount of moisture remains even after ironing and must be entirely removed before sorting the clothes to put away. Have plenty of coat hangers for dresses, skirts and waists. They are cheap. Half the charm of any woman's or girl's appearance lies in the perfectly laundered garment and after it is once ironed care

should be used to fold and hang it up properly and not lay it carelessly away.

THE LEFT-OVER ROAST.

What to do with the remains of a roast is often a puzzle to the cook whose family is too small to eat a fair-sized roast at the first meal. Of course, it can be sliced and served cold, or converted into hash, but these two methods soon wear out, especially the hash, though it be made appetizing with a bit of onion and the brown gravy left over.

In one family the roast is often served up in a meat pie which disappears like magic. For the crust simply make a good rich biscuit dough. You may make enough to line the dish, or simply enough to cover the meat and gravy, if your family are not overly fond of the crust. Cut the roast into small cubes and place in a stew pan. Add chopped onion, a few slices of carrot, bits of cold potato, the few peas or beans left from yesterday's dinner, pour on boiling water to cover, season with salt and pepper and let simmer on the stove while you make your crust. Thicken the gravy with flour, and if you like add a half-teaspoon of kitchen bouquet just before you put the meat and gravy in the dish in which it is to be baked. Make an opening in the top crust to permit the steam to escape and bake until the crust is done.

Instead of making a meat pie out of the mixture drop dumplings into the gravy and cook on top of the stove. For the dumplings sift four even teaspoons of baking powder and a half-teaspoon of salt with two cups of sifted flour. Stir up with just sufficient milk or water to make of the right consistency to drop from a spoon into the gravy. Drop by teaspoonfuls, wetting the spoon before taking up dough each time so the dough will slip off easily. When all are in cover the dish tightly and boil ten minutes without removing the cover. Then serve at once. As another change drop biscuit dough into the meat and gravy and bake until the biscuits are done, about 20 minutes. Still simpler it would be to serve the meat as a plain stew, without crust or dumplings. Or you can line a dish with mashed potatoes, pour in the meat, cover with potatoes and bake for 20 minutes. If you haven't enough potatoes left to line the dish, simply cover the top of the meat and bake.

For an occasional change slice the meat as you would to serve cold, pour your left-over gravy in a frying pan, lay in the meat and simmer until it is heated through. Then put the meat on a hot platter, pour the gravy over and serve piping hot.

If you have only a few pieces of meat left, use them in an omelet. Beat up the number of eggs required for a family of your size, and just before pouring the omelet into the spider add the meat which has been chopped fine and beat well into the egg. Or you can leave the meat out until you are ready to fold the omelet and then put it between the fold.

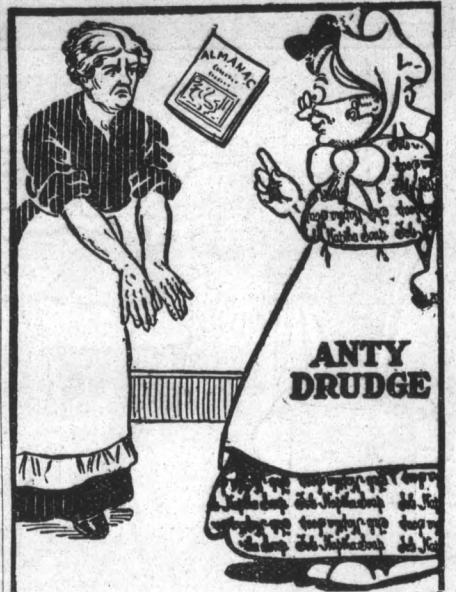
If your family like croquettes serve the meat in this form. Chop it fine and mix with one or two well-beaten eggs and a few fine bread crumbs. Form in small cakes in the hands, dip in egg and crumbs and saute in hot drippings.

THE BAKING OF A PIE.

BY ELLA E. ROCKWOOD.

The complaint about pies losing their juices in the oven strikes a responsive note, because I have wrestled with the same problem. After a thorough trial of the various methods suggested by the Household Editor in the August 30 number of *The Farmer*, with but indifferent success, I have come to the conclusion that the trouble lies principally in the baking. I advise a medium slow oven, on the theory that intense heat generates a sufficient amount of steam to burst its confines in a pie, the same as it does anywhere else.

The spot where trouble begins is always at the edges where joining of the top and bottom pastry leaves slight resistance. To avoid the annoyance of a run-over pie we should begin with the laying of



Mrs. Tiredout: "Sam here was looking over a Patent-Medicine Almanac last night and he thinks he's got all the complaints he read about, except Housemaids' Knee. He might have that, too, if he spent the time I do scrubbing and trying to keep clean. Just look at my knuckles from drubbing up and down over the washboard."

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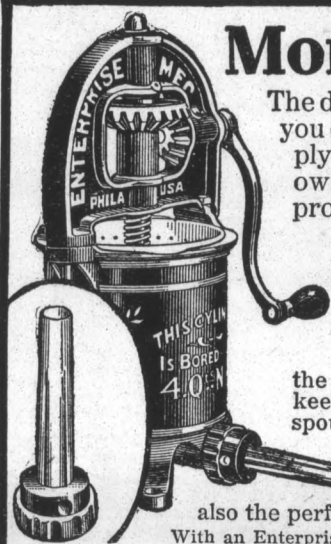
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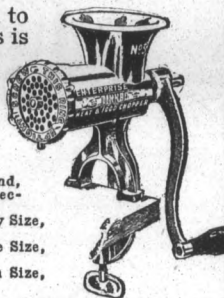
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the crust. Place this loosely in the tin, remembering that pastry shrinks as it bakes and this has a tendency to draw it away at the edges, giving the juice a chance to escape. Allow plenty of "fullness" in the upper crust and guard against drawing it tightly in place. Moisten the edges lightly before laying the two together. Too much water at this point renders it hard when baked.

Press gently but firmly after the upper crust has been loosely laid in position. Then, for a very juicy pie, bind with a strip of clean cloth. To aid the escape of steam a small funnel made of stiff paper may be inserted in the middle of the upper crust. This acts as a safety valve. Then be careful not to bake too fast and the pie will come out with juices intact.

Stirring flour and sugar together is a good practice. Something which always must be left largely to the judgment of the operator is the exact quantity of flour to be employed in a juicy pie. We know it requires a cup of sugar to sweeten it but the thickening is, to a certain extent, problematical, particularly with a berry pie.

THE HANDY KITCHEN TABLE.

BY FANNIE V. WILSON.

Much has been said about a convenient kitchen but I have never seen anything yet that equals my handy kitchen table. It stands before a long window and here I can work and see away down the road as well as across the yard and fields. I always have a few plants blooming in this window and they do much toward brightening the kitchen, especially during the winter months.

But I started out to tell you about my table. The top is five feet by two feet and at each end, as shown in the illustration, are two cupboards, where I keep my basins, baking tins and kettles. The cupboards are one foot and eight inches square on the outside, and the height, of course, determined by the height of the person who is to work at the table. The top, which is covered with zinc, is large enough to extend out beyond the cupboards.

One of the best features of this work table is the open space between the cupboards which enables one to sit up close to the table to work. I have a stool to sit on and when not in use it is pushed up under the table, out of the way.

One of the cupboards is fitted with a shelf and on this I keep my basins and round cake tins and pie tins. Down below there is plenty of room for long cake tins, bread tins and the food grinder. In the other cupboard are kept the kettles and frying pans, which are hung on hooks on the sides of the cupboard.

There is always plenty of room for these things and I always know where to find them. Then, too, they are right where they are needed and out of the dust; for the little doors can always be kept closed.

My table was made by the carpenter who built the house but you could have one built at a carpenter shop, or the man of the house, if he was handy with tools, could make one. Castors should be fastened on all five corners of each cupboard, making eight castors in all. As to material, mine is of oak, but one can suit oneself. Of course, it should be primed and varnished as any other piece of furniture. I am sure if any see fit to copy this handy kitchen table they will find it as I have, to be "a thing of beauty and a joy forever."

IN THE TIME OF COLDS.

BY L. D. STEARNS.

Now that the time has come when colds are once more prevalent it behooves every mother to guard carefully against their approach, and to teach their young people to do their share toward prevention.

Don't think that because it is "only a cold" it means nothing. Colds are a serious menace to health. They are not only a present danger, but each one renders the victim more susceptible to them, weakening the resisting powers of the system and in many cases paving the way to some lasting trouble. They attack the passages between the nose and the ear, sometimes causing serious trouble with the hearing apparatus; they weaken the throat and lungs, and too often pave the way for that dread disease—pneumonia.

According to many eminent authorities colds are contagious; and every mother knows how, once started, one generally goes the rounds of the entire family. Preventive measures should be taken to insure against this.

When a cold first makes its appearance the sufferer should be banished from the family circle for a day or two, exactly the same as in a case of measles or chicken pox. No one would dream of allowing a child sick with measles to mix and play with others; and a cold is more far reaching in its effects, and more of a menace to health.

If, at its first approach, the child drinks plentifully of hot water, takes a mild laxative and, after a hot bath, goes to bed in a well-ventilated room, it can often be broken up at the start. If not, then aid nature by giving little food and all the water, hot or cold as preferred, one can drink. See that no soiled handkerchiefs are left carelessly about, and be sure they are never dried and re-used as children sometimes do. As soon as they become wet they should be dropped at once into a basin or pail of water kept for that purpose, as they are filled with germs and, otherwise, are one of the most prolific sources of contagion.

Don't be afraid of fresh air. Keep the room filled with it, day and night. Air and sunshine are two of the best medicines we have for any kind of ill and if we used them more, humanity, as a whole, would be vastly better and more immune from all kinds of disease.

The child should be taught to cover mouth and nose during every cough or sneeze, and every adult should strictly adhere to this rule in the interest of humanity. Those having colds should avoid, as much as possible, coming into close contact with others. As the active danger zone of contagion is usually within a radius of four or five feet of the one afflicted there is much less danger of contagion if one is careful to keep that distance from the sufferer.

Don't forget that over eating is frequently a cause of colds. The system becomes clogged with undigested food, nature tries to throw off the accumulated poisons and a "cold" is the result. So, would you go through the winter months free from the complaint, be temperate in that regard. Form the habit, also, and teach it to the children, of drinking much water daily, thus aiding nature in her work of carrying off impurities and keeping the system in good trim.

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No. 7560—Boy's French suit, 6 to 10 years. With or without sailor collar, with sleeves tucked or joined to bands.

The above patterns will be mailed to any address by the Fashion Department of the Michigan Farmer on receipt of 10 cents for each.

THE EMERGENCY SHELF.

BY MRS. F. NISEWANGER.

It is a wise housekeeper who forestalls worry, confusion and embarrassment in the event of company dropping in unexpectedly to dinner at just the last moment, on a particularly busy day, or when the men folks are away and she has planned "just a lunch," by having an "emergency shelf" in her pantry or cupboard, well supplied with canned goods of every description. These require only a few moments to put them into palatable and attractive shape for the table. Many such things do not even need heating, and those that do require only a few moments over the fire or in hot water.

If the already prepared, or partly prepared meal does not promise quite all that is desired in the way of quantity or quality, the opening of the right can or two will make it all that could be wished and give to the housewife the ease and satisfaction that is not possible if she feels that something is lacking.

Some keep part of the home-canned fruits, jellies and jams on this shelf with the cans of fish, meat, soups, vegetables, etc. Others keep these in their regular places in the cellar, seeing that the supply never gets low for either company or family use.

There are different times during the year when canned goods can be bought considerably cheaper than at regular times. It is a mark of economy and good judgment to see that the emergency shelf (which also sometimes comes in very handy for family use), is replenished at such times.

Generally speaking, such goods are the cheapest during the summer months, but they are also often used by our merchants as "leaders" on their special sales days when they are trying to clear their stores of other goods by "half-price" or "below cost" sales.

We may doubt whether the merchant is actually giving away his goods to make room for the new season's demands, but we cannot, for example, doubt the wisdom of buying for 75 cents a dozen, cans of corn that would regularly cost \$1.20, and other things equally reasonable. Such investments pay better interest than do banks even though some of the goods may not be used for several weeks or months.

A few years ago ten-cent goods sold "three for a quarter," fifteen-cent goods, "two for a quarter," twenty-cent goods, "two for thirty-five," etc., but it is seldom, now, that they are not all sold "straight" regularly, so we must plan to save the nickels that are fairly ours in some other way. Our grocer will not go bankrupt because of his "grocery bargains" and they will help us.

SHORT CUTS TO HOUSEKEEPING.

Use the brims of old hand-embroidered hats for yokes in wash dresses.—H.

To prevent plackets from tearing down, sew a hook and eye at the bottom of the placket, hook them together and bend the hook to prevent its opening.—Harriet.

In making milk or brown gravy, try using coffee to stir the thickening with, instead of milk or water. It makes a richer and better looking gravy.—A. E. L.

Every woman that uses enamel ware has often viewed ruefully a dish that has had something burned in it, for the cleaning is no easy matter. I have solved the difficulty, however. I wash as clean as I can in hot, soapy water and then rub with a bit of sandpaper. This will remove all trace of the burn, leaving the dish as smooth as it was at first.—I. B. M.

Many persons are made ill by the eating of new cabbage, but this dish will prove harmless to all if a red pepper is placed in the pot while the cabbage is being cooked.—Mrs. J. J. O'C.

To root rose cuttings set them in sand and over each turn a fruit jar, burying the lower edge of the jar in sand deep enough to exclude all air. The cutting will keep green, fresh and moist inside the jar while roots are forming in the sand below. Do not attempt to uncover it for several weeks. Almost any healthy cutting can be rooted in this way.—L. M. T.

Wash glass dishes that have had milk in first in cold water and then in hot. They will wash easier and be cleaner.—A. E. L.

Many people buy the dustless dusters. Here is a way that they may be made at home with scarcely any expense. Take a black cloth of some kind that is soft, I used the remains of a black undershirt, and soak for 24 hours in coal

oil, then remove and hang up and let dry. I have found this as good as any of those that I bought. A mop stick kept for this use only with one of these dusters in is the finest kind of a thing to wipe polished or painted floors, and saves the back from the weariness of getting down to wipe with a cloth.—I. B. M.

Sweet milk took a fresh ink stain from an apron but I was startled to see a dried stain on a shortwaist. Oxalic acid took that out. Sprinkle the crystals on the stain and pour boiling water through. Rinse well. The same treatment removes iron rust.—Mrs. R. B. C.

A good way to water cucumber and melon vines, is to sink tin cans or old tin pails, having holes made in the bottom, and then plant the seeds around them. A still better way is to sink a nail keg in the middle of the patch, fill half full of fine manure and pour water into this in dry times.—A. E. L.

While sewing I found a way to mark the waist line on a waist. Put the waist on and belt with a rubber belt (put belt wrong side out if it is a good one); adjust the gathers, etc., and have some one mark with a piece of crayon just above the top of the belt. An inch or so may be added or subtracted when sewing the skirt on.—Mrs. R. B. C.

When canning preserves use a gravy boat to fill the cans. It fits almost any can and prevents spilling the preserves also.—J. W.

If some yolk of an egg get into the white while separating an egg take a dry cloth and touch and the yellow part will be quickly removed.—J. W.

HANDY LITTLE MAKE-SHIFTS.

BY MAE Y. MAHAFFY.

On a nail in the pantry keep a foot length of strong wire hanging, one end bent into a loop to serve as a hanger. When a hole is needed in whalebone, leather, paper or pasteboard all that is necessary is to heat the straight end red hot and pierce the substance neatly.

An old picture frame, thoroughly cleaned, may be covered on one side with new screen wire, and spoons to serve as legs nailed to each corner of the opposite side, thus making a splendid cooler for cake, pies, bread or pudding, since the air can circulate underneath as well as around it.

A coin mailing card may be made from writing paper and mucilage or white of egg in a few minutes when a small piece of money is to be sent in a letter. Fold a piece of paper quite a number of times, and cut a circular piece from it at least a half-inch larger than the coin to be sent. Glue these layers together and paste them flat on a square or oblong piece of paper, as heavy as you may have in stock. Place the coin in the little receptacle thus made and glue another sheet of paper over it. If one has a knife sufficiently sharp the circle can be cut from heavy pasteboard and glued between the papers, thus saving the work of uniting the layers.

When in a hurry to dress and the sleeves are minus shields try this plan: Place the shield in position and slip a paper snap or holder over the seam near each end. These are less obtrusive than safety pins, and cause less wear since no holes are made.

FLOWERS FOR THE TABLE.

BY L. A. THORNTON

With a little care it is not at all difficult to have flowers for the table throughout the year. Use a high vase as the effect is always better and safeguard your table linen by placing a few pebbles in the bottom, so that whatever flowers are used it will not be top-heavy and overturn. When very short stemmed flowers are to be used roll up fine smooth paper into a loose crumpled bunch and drop it into the vase, extending up high enough to touch the bottom of the short stems. Then fill the vase with water. The damp paper will keep the flowers fresh even should the water become lower than the ends of the stems. If flowers are to be used several days, when the table is cleared sprinkle them with cold water and set them away in a cool, dark, almost air-tight cupboard. Kept in this way they will retain their beauty for several days. When carrots and parsnips are put in the cellar have the tops left on. The green is very handsome for bouquets. Bulbs are also pretty for the table. Kept in the dark until two weeks before they are wanted, then brought out and freely watered they can be depended upon to furnish blossoms for any occasion.



These Machines Prevent Food Waste

What to do with left-over meats and other foods puzzles the housewife. How to make the meats vary seven days in the week is another puzzler. These Keen Kutter Meat and Food Choppers solve both problems.

With one of these machines in your kitchen you can chop up all left-over meats, fish, poultry, vegetables, etc., and serve them up in many appetizing ways.

KEEN KUTTER
Meat and Food Choppers

cut clean. They do not mash or mangle food—they cut. They have very few parts, are easily washed and can be set up or taken apart in a few minutes. Don't take any meat and food chopper unless it's a Keen Kutter. They are built right and bear the earmarks of quality. Your money back from your dealer if any Keen Kutter article—cutlery or tools—is not absolutely satisfactory.

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Trade Mark Registered. —E. C. SIMMONS.
If not at your dealer's, write us.

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St. Louis, New York, Philadelphia,
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Meat Chopper No. K112 Price \$2.75
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You can go out in the wet as often as you please if you treat your shoes two or three times a season with

DRI-FOOT

Waterproofing for Shoes

Keeps the leather soft, pliable, waterproof; makes shoes wear longer; doesn't make them sticky or oily; doesn't change their appearance. For black or tan shoes.

25c full size can in Canada 35c

Get a can at the shoe store or of your general store keeper. If they haven't it, send us their names and 25c and we'll supply you.

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Beats Electric or Gasoline

TEN DAYS FREE

SEND NO MONEY

Without sending a cent you can use this wonderful, economical oil light 10 days free, then return at our expense if not satisfied. Gives powerful white incandescent light, burns over 60 hours on one gallon Kerosene (coal oil). No odor, smoke or noise, simple, clean, won't explode. Guaranteed. We want one person in each locality to refer customers to.

Write for 10-DAY FREE TRIAL. **AGENTS OFFER—agents' wholesale prices** and learn how to get **ONE FREE. WANTED** Make money evenings and spare time. One farmer cleared over \$500 in 6 weeks. Exclusive territory given.

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219 Hammond Bldg., Detroit, Mich.
I. ROY WATERBURY, Pres. AUSTIN N. KIMMIS, Secy.

WANTED.

At once a few men, who are hustlers, for soliciting. No experience necessary. The work is dignified, healthful and instructive. In writing give references and also state whether you have a horse and buggy of your own. Address

BOX J. F., Care Michigan Farmer, Detroit

LEARN TELEGRAPHY—Positions guaranteed Catalogue free. North-Western Telegraph School, Eau Claire, Wis.

WANTED—Men and women for Government positions. Examinations soon. I conducted Government Examinations. Trial examination free. Write, OZMENT, 17 E. St. Louis.

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Buy a **Sedgwick Automatic Automobile Jack** and save a set of tires each year. Our jack raises your car off its tires every time you enter your garage or barn. Automatically. No labor. No effort on your part. Write for catalog. **Sedgwick Mfg. Co., Richmond, Indiana**



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Why not have the best when you can buy them at such low, unheard-of Factory Prices?

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Are heavily made of the highest grade, selected material, beautifully finished with improvements that absolutely surpass anything ever produced. The Best in the World. Guaranteed for Years by a Two Million Dollar Bond.

No matter where you live you can try a Hoosier in your own home 30 days without a penny's expense to you. "You can save enough on a single Hoosier Stove to buy your Winter's Fuel." **SEND TODAY for LARGE FREE CATALOG & PRICES.**

The Best in the World **Hoosier Stove Factory, 131 State St., Marion, Ind.**



"WELL, among the many there's only one kind that suits me, that's Stephenson Underwear! Keep it in mind—for it's that long fibre wool that lasts; it's warm, doesn't scratch; after each washing it fits and looks like new and I tell you it's the only thing for us farmers. The Mrs. likes the no-mending features and the fact that each garment is guaranteed satisfactory to wearer. Be sure you see this label!":

STEPHENSON
SOUTH BEND, IND.
UNDERWEAR
"STALEY BRAND"

No. 902—Union Suit. Royal rib, natural gray wool spun, winter weight, French collarette, fresh water pearl buttons, button holes reinforced, seams reinforced at ends, cuffs to sleeves and legs securely attached, wide flap crotch, convenient and completely covering; a substantial, serviceable garment; price.....\$1.50

Write for Interesting Booklet on Underwear
Stephenson Underwear Mills, South Bend, Ind.
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Don't confuse this with ordinary "make-shift" roofings. We guarantee it 15 years and inside each roll furnish modern ideas for laying it artistically and permanently.

Certain-teed

Rolls Roofing Shingles

You can't tell how long a roofing will wear by looking at it—so for your own protection, accept no substitutes—be sure that the **Certain-teed** Quality Label is on each roll. Sold by dealers everywhere at a reasonable price.

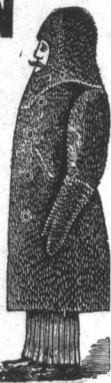


General Roofing Mfg. Co.
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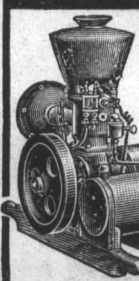
LET US TAN YOUR HIDE.

Cattle or Horse hide, Calf, Dog, Deer or any kind of skin with hair or fur on. We tan and finish them right; make them into coats (for men and women), robes, rugs or gloves when ordered. Your fur goods will cost you less than to buy them, and be worth more. Our illustrated catalog gives a lot of information which every stock raiser should have, but we never send out this valuable book except upon request. It tells how to take off and care for hides; how and when to pay the freight both ways; about our safe dyeing process which is a tremendous advantage to the customer, especially on horse hides and calf skins; about the fur goods and game trophies we sell, taxidermy, etc. If you want a copy send us your correct address.

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Reasons Why You Should
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Kerosene Stationary ENGINE



It runs on kerosene (coal oil), gasoline, alcohol or distillate without change of equipment—starts without cranking—runs in either direction—throttle governed—hopper cooled—speed controlled while running—no cams—no valves—no gears—no sprockets—only three moving parts—portable—light weight—great power—starts easily at 40 degrees below zero—complete, ready to run—children operate them—5-year iron-clad guarantee—15-day money-back trial. Sizes 2 to 20 H. P. Send a postal today for free catalog, which shows how Sandow will be useful to you. Our special advertising proposition saves you one-half cost of first engine sold in your county. (167)

Detroit Motor Car Supply Co.,
164 Canton Ave., Detroit, Mich.

When writing to advertisers please mention The Michigan Farmer.

Farm Commerce.

Some Details Of Fruit Grading And Marking Law Criticized.

Considerable interest is manifested in an act of the last Legislature making certain requirements in grading fruit and marking the packages. This measure was proposed and its passage urged by some very good men in this state, and it seems to meet with general approval. To offer any word of criticism now that it has become law may appear presumptuous and out of place, therefore, and especially if it were classed with a lot of freak measures with which a number of state legislatures have been so prolific in recent times, some of which have "got past." But when the provisions of any law tend to revolutionize approved methods and practices that are nation wide in their scope that law is bound to meet hard sledding or become a dead letter. Some of the provisions of this law could not have been very carefully scrutinized by very practical fruit men along all lines.

This law provides, for instance, that not more than 20 per cent of the apples in a barrel shall be smaller than those in the face end, nor below them in other respects. Now this, on its face, to a man unaccustomed to packing apples, appears very fair and just, leaving a sufficiently wide margin for all oversights and mistakes in grading. As a matter of fact, however, precious few barrels of apples are put up in a manner that will meet this provision. And to undertake to conform to it would require nearly as close grading as is practiced in putting up box apples. The general rule in selecting the apples for facers is that they shall be of uniform size and of the average of those throughout the barrel. The rule is, too, in packing varieties of medium size, such as Grimes, Russetts, etc., to grade to two and one-fourth inches and above; and with Kings, Twenty-ounce, etc., to grade to a minimum of two and one-half inches. With Baldwins the ordinary run would be from two and a quarter to two and three-quarters inches in size, with a few that would run three inches. The average size of such fruit would be about two and a half inches, and facers would be selected of about this size. Now, where a tree bears a small crop the apples will run much larger, and when a tree is heavily loaded a considerable proportion of the fruit will run below the average. The size of the apples does not run alike in all of the barrels. But where the fruit is picked and placed on packing tables and packed in barrels at once in the orchards, as is usually done, the packers must select the facers as they work, and they cannot anticipate just the size the pickers are going to bring on—whether they will pick larger or smaller specimens—and in some of the barrels 50 per cent or more may run below the facers in size, while in others a much smaller proportion may be under them. And between two and a quarter and two and a half inches there is considerable difference when two apples of these sizes are compared—enough, no doubt, so that in a court of justice a judge would decide that the requirements of this law were not met if too many of the smaller size were found in the barrel. While in putting up apples in barrels it is common to make two grades very little difference is made on account of size.

In the matter of color as well, the general practice is hardly in conformity with the provisions of this law. On the general principle that goods sell better if attractive in appearance the facers are selected which have a good color. And while the law does not specify color in express terms, yet the words "in other respects" than size would seem to cover this as well. One of the best packers I ever knew and one who is very particular in the matter of grading, so much so that his pack has become widely known and commands a large premium over the ordinary pack, always selects the very highest colored specimens for the facers, and while the balance in the barrel are of good color yet perhaps not 20 per cent would equal those in the face in this respect.

The requirement that the packer's name and address be placed on the package may be and doubtless is designed to promote honest packing, but that it will ac-

complish very much in this direction is open to question. Some whose intentions are no doubt upright simply don't know how to put up fruit properly, and, strange as it may seem, there is quite a number of others who do not hesitate to put their names on stuffed packages. I myself once stood with a large grower of peaches and watched him and his packers putting inferior fruit in the bottom of the baskets and then putting on a very fancy top, and then the baskets were stamped with his name and address and the words, "Guaranteed Straight Pack." There are too many men who do not object to putting their names on any kind of junk, while some who pack their fruit straight do not care to advertise their products with their poorer grades. Then, too, much of the Michigan apples goes outside of the state and recourse upon the packers is difficult even if the fruit is not found to be properly put up. However, men might far better place their names on all closed packages if this would tend in any material measure to eliminate the crap from the middle of the barrel.

With the general purpose of this law I have no criticism. I am heartily in sympathy with its main object—that of securing honest and straight packing. The unfortunate thing is that it is so difficult many times to so frame laws as to make men honest and at the same time to be practicable. A number of years ago the writer, with a number of others, worked very zealously for a law that should stop the use of snide packages and a law was secured requiring the capacity of packages to be stamped on the outside. One manufacturer soon after its passage was arrested and fined for not observing its stipulations. But for a long time it has been inoperative, although standing on the statute books. The general effect has been good, however, and gradually packages have come to standard sizes. While it is better to have fewer laws than to have so many that are disregarded, yet it is to be hoped that the effect will be towards reliable and honorable methods.

Allegan Co.

EDWARD HUTCHINS.

SUCCESS IS ASSURED THE APPLE ADVERTISING CAMPAIGN.

The apple advertising campaign seems to be meeting with success. Large numbers of growers, shippers and dealers are doing their part by buying freely of the stamps issued to raise money to encourage a more general use of the "King of Fruits." The purpose of the movement is already assured although the co-operation of every person who sells or handles apples will hasten the day of maximum consumption and increase sales in the immediate future that the present generation may have substantial benefits from the investment.

As has been explained in previous issues of The Farmer, the expense of the advertising campaign is met by the sale of stamps which are attached to the barrels or boxes in which the apples are marketed—a two-cent stamp being placed on every barrel and a one-cent stamp on every box of fruit sold. The stamps are obtainable through banks or of the Equitable Mortgage & Trust Company, of Baltimore, which concern has been made the depository for the advertising fund. We are pleased to hear reports of the liberal way Michigan growers are supporting this plan.

We believe this movement will be of great value to the apple grower. In the first place an effort will be made to encourage dealers to try and sell more apples at a smaller margin. Many instances have been cited where dealers have greatly increased their income from the sale of apples by cutting their margin in half and at the lower price selling two or three times as many bushels of the fruit. Then, too, consumers will be urged to buy in original packages. This will lessen the expense of the retailer, enable him to sell cheaper, and consequently to deliver apples at a lower quotation which will stimulate consumption. Under such conditions thousands of families will buy who now cannot afford to use this splen-

did fruit. Still further encouragement will be given through the wide distribution of cook books which will educate the public in the hundreds of ways that apples may be used in the kitchen. These features of the advertising campaign should, and do, appeal to the apple producing public.

FORMAL HEARING ON CORN GRADES ANNOUNCED.

A public hearing will be held at the Department of Agriculture, Washington, D. C., on Tuesday, October 29, 1913, at 10:00 a. m., in order that all persons interested in the commercial grading of American corn may have an opportunity to be heard on the tentative grades for corn, as announced on August 22, 1913, and as published in our issue of September 6, page 240, before federal grades for commercial corn are definitely fixed by the Department of Agriculture.

For the purpose of giving those interested an opportunity to become familiar with the data on which the tentative grades are based, the conclusion is reached, however, by these investigators that, while sweet clover may be made a valuable forage plant, it is doubtful whether it will ever do more than supplement other pastures, its chief advantage being due to its ability to grow and build up poor soils, to survive the midsummer drouths which frequently occur throughout the country and to produce early and late forage.

About 20 pounds of hulled seed should be sown per acre on a well prepared and firm seed bed, preferably in the spring. grades are based, prior to the hearing, representatives of the Office of Grain Standardization will present the more important results of the investigations at New Orleans, La., on October 15, in connection with the annual meeting of the Grain Dealers' National Association; and at Des Moines, Iowa, on October 21 at a special meeting under call of the president of the National Council of Farmers' Co-operative Associations. The Department has also expressed a willingness to give additional opportunity for a further consideration of these data at a general meeting in Washington the day immediately preceding the date of the formal hearing, in case anyone interested should care to call such a meeting.

WELL SATISFIED WITH WORK DONE AFTER PROVISIONS OF SULZER BILL.

The fruit growers' association of Northport is already profiting because of the recent laws regarding standard packs for apples. The association is following the provisions of the Sulzer bill and has already packed and sold three carloads of apples under a pack made according to the federal law. The apples brought \$2.25 a barrel f. o. b. Northport for the two and one-half inch size and \$2.00 a barrel for the two and one-quarter size. These apples were sold to Cleveland, Ohio, parties who learned of the quality of Western Michigan fruit through the recently held apple show in that city where the Western Michigan apples took precedent over those grown in New York state. As this is only the beginning of the apple season it is believed that even better prices will be reported before long.

MARKET NEWS.

The recent course of the Chicago hog market has been a good deal what might have been expected under all the circumstances. Liberal marketing of hogs and pigs have taken place, and while the better class of light and medium weight hogs adapted for the eastern shipping trade sold to advantage under a strong demand, coarse, heavy old sows sold comparatively badly. Pigs have formed a goodly share of the offerings, and on a recent Tuesday they sold off fully 25c per 100 lbs. in the Chicago market. Western packing operations have been running on a much larger scale than a year ago, and they may be expected to continue to so long as there is such a large consumption of both fresh pork and cured hog meats and lard. And yet prices for all lines of provisions are extremely high everywhere.

Commercial associations along the big lakes have been taking action against the steamship lines for refusing to accept for transportation perishable foodstuffs. The commercial bodies recently made a concerted demand that the lake steamers be forced to equip with cold storage plants so that eggs, butter, poultry and fresh meats may be carried on the chain of northern lakes instead of on the more expensive railroad lines. The attack against the attitude of the steamship companies is aimed mainly at steamship owning railroad companies, the charge being made before G. S. Gibson, special examiner in Chicago, for the interstate commission, that goods are refused so the railroads will get the business and the higher rates.

MILK AND CREAM TESTED FREE.

Our subscribers are finding the free milk and cream testing service of real value, and they are so pleased that letters of commendation are coming to our desks.

The fact that Dr. Floyd W. Robison is supervising this work, puts it on an absolutely reliable basis.

Remember, the testing is done free for any subscriber to the Michigan Farmer.

The directions are very simple: Put sample of milk or cream that is satisfactory to you and the buyer, in wide-mouthed bottle, enclose bottle in mailing case and send by parcel post to Michigan Farmer Laboratories, 674 Woodward avenue, Detroit, Mich.

If you cannot provide bottle and mailing case, we have arranged with a large concern to provide a mailing case for six cents and a case and bottle for ten cents in stamps. When asking for mailing cases and bottle address Michigan Farmer, Detroit, but in sending the sample of milk address it to Michigan Farmer Laboratories, 674 Woodward avenue, Detroit.

CROP AND MARKET NOTES.

Sanilac Co., Oct. 4.—Exceptionally fine weather has prevailed here for the last six weeks. Farmers have no complaint to make. The bean crop is harvested in good condition and will yield about 10 bu. per acre. A good sample is expected. Not much bean threshing done yet. Grain threshing completed. Silos all filled but not until Jack Frost had taken several hard clips at the corn and made the fodder rather dry. Quite an acreage of fall wheat but not enough moisture to start growth at the present time. Second crop of hay rather light but clover well filled with seed. Fruit fairly plentiful. Live stock looking well, but rather scarce excepting horses, which are some cheaper. Hay is now worth \$12 per ton; wheat 87c; oats 39c; beans \$1.75; eggs 24c; butter-fat 30c per lb.

Monroe Co., Oct. 4.—On September 23 we had a killing frost that caught most farmers with corn not cut. Potatoes were very badly frozen so that with the severe drouth potatoes in this section of the county are going to be a light crop. Rather inferior potatoes at this date in Toledo market are worth from \$1@1.20 per bu. There is some corn yet to cut. Owing to the severe frosts the leaves are so dried up that farmers have to work in the morning while it is damp to save the fodder. There have been a great many new silos built this fall and it has been difficult to get help enough to fill them. Farmers, especially on the heavy lands, could not get their wheat sown. This week we have been having some very heavy soaking rains which have soaked down pretty well and there will be some wheat put in late. Pasture is or has been very short. Stock of all kinds looking well. Not many hogs kept in this part of the county.

Ottawa Co., Sept. 29.—Owing to the long continued dry weather the sowing of wheat is not all finished up to date in this vicinity. About two weeks ago there was a fairly good rain, and another light rain a week ago. But with many farmers the ground was so dry and hard they could not plow and fit it properly until the rain of two weeks ago. This is the reason why some are behind in sowing wheat. The pastures were so badly dried up that no matter how much rain comes now, there will be but little fall feed. Hay is scarce and brings a good price in market. Silo filling is about finished, many new ones have been built this season, the majority being made of cement blocks. Some cloverseed has been cut, and as the heads are well filled the yield promises to be much better than last year. Some farmers are beginning to raise white beans quite extensively. Quite a large acreage of lima beans were grown in this section for the canning factory in Coopersville, but the season was not very favorable for the crop.

Northern Isabella and Southern Clare Co.'s, Sept. 23.—Bean harvest is nearly completed and one of the finest harvests in years. Corn nearly all cut and a bumper crop, but the fodder is badly damaged by the frosts. Quite a large acreage of cloverseed being harvested. Potatoes about half a crop and selling at 60c per bu. Fall apples are being picked and selling at 25c per bu. Not much winter wheat being sown as the farmers do not think it pays. Sugar beets are a good crop and the farmers are getting ready to harvest them.

Southern Hillsdale Co., Sept. 29.—Silos nearly all filled. Much corn yet to cut which is all frosted quite badly but will be a much better crop than it was thought to be a month ago. A small acreage of wheat was sown on account of the continued dry weather, which was broken about a week ago. Pastures begin to look green. Farmers are generally well supplied with feed to winter their stock. Cows are bringing good prices at public auctions, grade cows bringing from \$70@140 each.

Shiawassee Co., Sept. 29.—Weather cold nights, with strong west and northwest winds. Corn all cut and silo filling done. Wheat sowing is under way, a large amount of wheat yet to be sown. Late frosts have killed down the potato tops and digging will begin in the course of ten days. Clover seeding is looking well. Bean threshing under way, but yield far below that of last season. So far yields range from eight to ten bushels per acre. Crop otherwise in good condition. Fruit very poor, especially late varieties. Hog cholera has made its appearance in this

locality and already two herds have been destroyed. Every preventive measure is being taken to stamp out the disease. Lamb feeders are beginning to look about for feeding material and a few cars have already arrived. No cattle yet purchased. Real estate is on the standstill and farm values rapidly on the decline. No farms exchanging hands.

Pennsylvania.

Crawford Co., Oct. 1.—Frequent showers this week. Corn is about all cut. Farmers are filling silos and digging potatoes. Pastures are beginning to look better since the rains. Fall wheat is looking good. Potatoes are about a medium crop. Butter 32c; eggs 28c; hay \$10 a ton; buckwheat \$1.50 per cwt; wheat 90c per bu; oats 42c.

Chester Co., Sept. 25.—Most all crops fell short of the average in this county owing to the dry weather. Hay about two-thirds of a crop; wheat not more than half a crop, making from 10 to 20 bushels per acre, which usually runs from 20 to 30 and better. Potatoes poor crop and selling at 8c per bu. Corn will fall short of a full crop on account of dry summer and hail and wind storms in southern part of county.

Ohio.

Madison Co., Sept. 29.—The long drouth was broken during the past week by heavy rains. Pastures, however, are in good condition on account of shortage of live stock. Cattle and sheep scarce and high. Hogs will also be short in numbers on account of cholera, which not only prevails in this county but in the central section of the state. A good crop of wheat was harvested. Corn crop very short, also potatoes. Apples are almost a failure and many fine orchards seem to be dying, which is possibly caused by heavy frost in June.

Medican Co., Oct. 1.—Farmers have about finished sowing an average acreage of wheat in fine shape. Just had good rains, following an all summer drouth. Corn and late potatoes badly frosted before ripe. Corn partly cut and a good crop for the season. Potatoes not more than half a crop, but good in quality. Stock fed early on account of drouth. Prices: Wheat 90c; oats 40c; prime cattle 6½@7c; hogs 8c; some apples on higher ground poor in quality.

Crawford Co., Oct. 1.—We are having nice weather for meadows and early sown wheat. Some wheat to sow yet. A large acreage will be sown; wheat was a fair crop this year; corn is a good crop. Frosts came on a little too soon for late planted corn. Early corn has matured well, about one-third to cut yet. All kinds of clover seed a good crop. Hulls being delayed by unsettled weather. The apple crop is rather poor. The potato crop about a half crop; too dry for them last summer. Local markets: Wheat 88c; corn 65c; oats 40c; potatoes 75c; butter 22c; butter-fat 32c; eggs 26c.

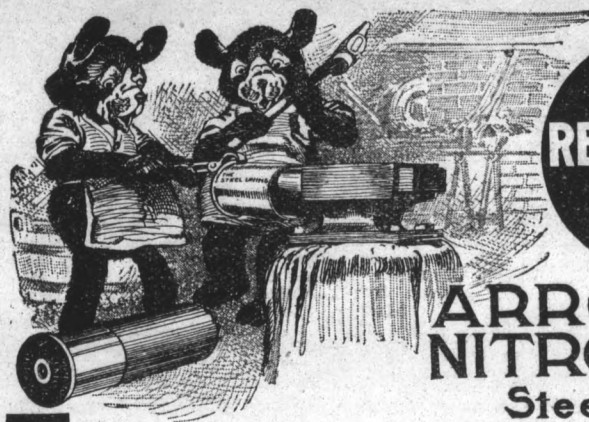
Union Co., Oct. 2.—The weather during September has been somewhat damper than August but no heavy rains as yet. Pastures starting nicely; very heavy frost on night of the 22nd, killing corn, etc., dead. Not much cut at that time. There will be more than usual left standing on that account; standing fodder at this writing very dark, hardly pay to cut. Corn fields in fine shape for fall seeding, with quite a bit being done. Local prices: Corn 75c; oats 39c; clover seed \$5.50; wheat 85c; butter, country, 30c; creamery 35c; eggs 27c; hogs 8½c; lambs 6@7c per lb.

Guernsey Co., Oct. 4.—Showery and cool first half of the month. First killing frost Sept. 20. Roads good and farmers doing their fall hauling. Corn all in shock and most of the wheat sown. Old National Pike through county is to be paved within the next year. Fall pastures are good and plentiful. Corn will be 75c@ \$1, but hay will not be over \$15 per ton this fall. Eggs now 30c and scarce; butter 25@30c; peaches \$2.50@3; potatoes \$1; tomatoes \$1. Very few local grapes. Potatoes about 75 per cent of a crop. Not many farmers disposing of their sheep.

Ashtabula Co., Sept. 30.—Killing frost the 13th along the lake shore, some corn and potatoes escaping along the high land. Frost from three to four weeks ahead of schedule time here. On the 21st there were snow flurries on the lakes, accompanied by a heavy gale, doing much damage. The last of the month there was a severe three days' rain which greened up the pastures, but much delayed harvesting. The scarcity of help in Ashtabula county is greater than heretofore in the history of the county. Many fields of ensilage have been cut from 10 days to two weeks and are lying in the field, owing to shortage of labor. Late potatoes about two-thirds of a crop, owing to frost. Eggs 28c; pork, dressed, 12c; poultry 12@19c; all live stock high.

Shelby Co.—Cold, damp weather, severe frost on Sept. 23, corn all killed, not much cut, fair crop. Seeding about 10 days late, due to not sufficient rain. Wheat was a good crop per acre, but the acreage was very small. Oats about half a crop; potatoes very poor; hay a good crop, selling at about \$8@12 per ton. Not much hog cholera in this section at present. Not many silos in this part of the state as yet but getting in more every year. Corn \$1.02 per cwt; wheat 85c per bu; oats 37c; eggs 22c; butter-fat 28c per lb. Hired help scarce.

Allen Co., Oct. 2.—Have had two hard frosts so far, first one Sept. 23, second one Sept. 25. The first one completely killed every living plant. It was a general frost throughout adjoining counties. Corn is nearly all cut. Clover is nearly all hulled. Have had some rain. Corn is a fair crop; fodder is rather light in places. Clover is turning out rather good, anywhere from two to five bushels per acre. Produce is standing at a fair price. New potatoes 90c@ \$1; corn \$1 per cwt; wheat 85c per bu; oats, new, 38c (Continued on page 326).



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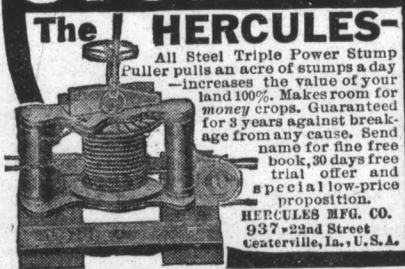
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WANTED—Farmer to take charge of a 240 acre farm about 20 miles from Detroit. Married man with no children preferred. Must be thoroughly up-to-date and have knowledge and experience of general farming. Good position for the right man. Send references with reply. Address, Box B, Michigan Farmer, Detroit.

10ct Barn for Sale—one of the best in Michigan. **N. F. RICHESON, Gladwin, Michigan.**

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80 ACRES IN LIVINGSTON COUNTY Nearly level, extra good buildings, market and school ½ mile. Must be sold. \$90 acre buys it—worth more. Easy terms. **Michigan Farm Home Company, Greenville, Mich.**

FOR SALE One mile from city limits, 170 acres all under cultivation. No better sugar beet land in the United States. Price \$100 per acre. **W. C. CORNWELL, Saginaw, Michigan.**

FIRST-CLASS FARMS AND LANDS FOR SALE. In the "Rich Peach Belt" where zero weather is seldom known. Write me whether you want dairy, grain or general crop farm, also how much. I will send you photographs of crops, buildings, land, etc. **C. L. EMENS, R. F. D. 4, Holton, Michigan.**

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Fertile Farms and unimproved lands in Delaware, diversified farming, live stock, delicious fruits and ideal homes. For information address, **State Board of Agriculture, Dover, Delaware.**

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Successors to A. J. Stevens & Co. Established 1883. Farm, Fruit and Stock Lands. We own 20,000 acres of choice unimproved lands in Gladwin and Clare counties. Sold on easy payments. Interest 6 percent. Write for information, **Gladwin, Michigan.**

Sickness Forces Sale!

113½ Acres: two-story ten-room fine house papered and painted, 3 large good barns, basement stable 36x46, 36x56, 30x56, all painted; hog house, hen house, apple, pear, plum, and peach trees. Buildings insured for \$5000. Include for immediate sale 3 good horses, 10 Holstein cows, 3 heifers, bull, brood sow, 5 hogs, 100 hens, 27 geese, 3 turkeys, 8 guineas, 10 ducks, 2 mowers, rake, grain drill, 3 plows, harrow, feed cutter, hay fork, ropes and pulleys, two heavy wagons, platform wagon, two buggies, 4 sets harness, cutter, sleigh, bob sleds, tools, hay, grain, straw, corn, fodder, potatoes, all go. \$5,000, \$5,000 cash, bal. 5% interest, long time. **Halls Farm Agency, Owego, Tioga Co., N. Y.**

100 Acres, \$2000 Cash

Income \$2265—Stock, Machinery, Etc.

This desirable profit-payer must be sold at once as owner has a larger farm and cannot handle both; if taken now he includes 10 cows, 2 horses, wagons, valuable machinery, tools, etc.: income here totaled \$2265 last year: 2-story 9-room house, cellar, barn 34x60, other outbuildings: 1½ miles to R. R. station, stores and creamery, near school, mail delivered; spring-watered pasture for 10 cows, tillage nearly level, 5 acres woodland; 65 fruit trees, small fruit; price now \$4500, only \$2000 cash, terms easy. Full details and traveling directions to see this splendid farm are shown on page 36. "Strout's Farm catalog" 36. It describes 535 farm bargains throughout a dozen states. Write today for free copy. **E. A. STROUT FARM AGENCY, Station 101, Union Bank Bldg., Pittsburg, Pa.**

Markets.

GRAINS AND SEEDS.

October 8, 1913.

Wheat.—Market has been unsteady. The influence of the new tariff law was nullified by reductions preceding the date when the law went into effect. Values ruled higher than a week ago but since Friday each day until Tuesday experienced declines. Bearish features are: Increase in world's visible supply and lower quotations at Liverpool; while the bulls claim poor weather in Argentine and India, smaller receipts from Russia, absorption of heavy offerings by Europe, strong demand for American winter wheat, and more active calls for flour. One year ago the price for No. 2 red wheat on the local market was \$1.08½ per bu. Last week's quotations were:

	No. 2	No. 1	
	Red.	White.	Dec. May.
Thursday	95	95	96½ 1.00½
Friday	95	95	96½ 1.00½
Saturday	94½	94½	95½ 1.00
Monday	94	94	95½ 99½
Tuesday	94½	94½	95½ 99½
Wednesday	94½	94½	95½ 99½

Chicago, (Oct. 7).—No. 2 red wheat, 92½@93c; Dec., 86½c; May, 91½c per bu.

Corn.—This branch of the trade has weakened although on Tuesday there was a stronger feeling due to rains impairing forage in Kansas, and corn from Argentine arriving in New York in poor condition. One year ago the price for No. 3 corn was 65½c per bu. Last week's quotations were:

	No. 2	No. 3	
	Yellow.	Yellow.	
Thursday	74	73½	
Friday	73½	73	
Saturday	73½	73	
Monday	73	72½	
Tuesday	73½	72½	
Wednesday	72½	73½	

Chicago, (Oct. 7).—No. 2 corn, 70½c; No. 3, 69½@70c; Dec., 68½c; May, 71½c per bu.

Oats.—This cereal has experienced a decline. Although on Tuesday at Chicago it shared a little of the strength of corn and wheat. The chief factor in developing the stronger feeling was a report of a short crop in France. In Detroit on the same day the market showed a fractional loss. One year ago the price of standard oats here was 36c per bu. Quotations for the week are:

	Standard.	White.	
Thursday	44½	44	
Friday	44½	44	
Saturday	44	43½	
Monday	43½	43	
Tuesday	43½	42½	
Wednesday	43½	43	

Chicago, (Oct. 7).—No. 3 white oats, 39½@40½c; standard, 40½@41½c; Dec., 41½c; May, 44½c.

Beans.—Offerings of beans at primary elevators has had a depressing effect upon values and a 15c decline occurred the past week. Quality fine. Cash beans for immediate and prompt shipment are now quoted at \$1.80; Oct., \$1.75; Nov., \$1.70 per bu.

Chicago, Oct. 7).—Market is steady. Quotations: Pea beans, hand-picked, choice, \$2@2.10; red kidneys, \$2.25@2.30; white kidneys, \$3 per bu.

Rye.—The rye market is dull with no change in values; cash No. 2 quoted at 68c, which is last week's figures. At Chicago cash No. 2 is quoted at 66½@67c, which is 1c advance over last week's quotations.

Barley.—This grain is in fair demand. Selling here at \$1.50@1.60 per cwt. At Chicago quotations range from 55@82c per bu., which is below last week's range. At Milwaukee malting grades are selling at 67@81c per bu., which is 1c below last week's quotations.

Cloverseed.—There is a fairly good yield of common seed, although it is apparent that trade will readily absorb surplus. Prime October is now quoted at \$7.75; Dec., \$7.75 per bu. Sales of October alsike were made at \$10 per bu. At Toledo prime cash sold at \$7.70; October, \$7.70; December at \$7.65; March, \$7.70; October alsike, \$10.60 per bu.

Alfalfa Seed.—Prime spot nominal at \$7.50 per bu.

Timothy Seed.—This market is lower, with prime spot selling at \$2.40 per bu., which is last week's figure. At Toledo prime cash, old seed, sold at \$2.42½; new September and October at \$2.45; March, \$2.57½ per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.40; second, \$5.10; straight, \$4.90; spring patent, \$5.10; rye flour, \$4.60 per bbl.

Feed.—In 100-lb. sacks, jobbing lots; middlings, \$29; cracked corn, \$27; coarse Bran, \$26; coarse middlings, \$27; fine corn meal, \$31; corn and oat chop, \$27.50 per ton.

Hay.—Condition of deal is unchanged. Carlots on the track at Detroit are: No. 1 timothy, \$16@16.50; standard, \$15@15.50; No. 2, \$14@14.50; light mixed, \$15@15.50; No. 1 mixed, \$13.50@14.

Chicago.—Good market. Demand good for timothy particularly. Supply light. Choice timothy quoted at \$19.50@20 per ton; No. 1, \$18.50@19.50; No. 2, \$17@17.50.

New York.—Best demand is good for timothy. Large baled, No. 1 timothy, \$20.50@21; standard, \$19.50@20; light clover mixed, \$18@19; heavy mixed, \$17@18 per ton.

Straw.—Detroit.—Steady. Rye, \$8@9; wheat and oat straw, \$7@7.50 per ton.

Chicago.—Quotable higher as follows: Rye, \$7@8; oat, \$6.50@7; wheat, \$6@6.50. New York.—Higher. New rye straw, \$18 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—There is a tendency toward unsteadiness in butter at nearly all points and a slight decline at Elgin on Monday would have occasioned no great surprise. However, that market was declared firm at the former quotation, though this is regarded as nominal. Local quotations remain unchanged but the market is more or less unsettled due to uncertainty as to the effect of the reduction of the tariff on this commodity. Quotations: Extra creamery, 31c per lb; firsts, 30c; dairy, 23c; packing stock, 21c per lb.

Elgin.—Market firm at 31c per lb. Chicago.—While values remain practically as last week, an easier tone is in evidence, with dealers unable to prevent some accumulation of stocks. The call is mainly for fancy high-scoring goods and the cheapest grades, with medium qualities somewhat neglected. Quotations are: Extra creamery, 30½c; extra firsts, 29@29½c; firsts, 26@27c; seconds, 24½@25c; ladies, 23½@24c; packing stock, 22½@23c.

New York.—In this market, too, most kinds are barely steady. Desirable grades of fresh creamery are moving best as offerings are not excessive, but the lower grades are unsettled. Packing stock continues in good demand, top quality goods gaining ½c since last week. Quotations: Creamery extras, 30½@31c; firsts, 28½@30c; seconds, 26@28c; state dairy, finest, 29½@30c; good to prime, 27@28½c; common to fair, 24@26½c; packing, 21@24½c as to quality.

Eggs.—Difficulty in obtaining adequate supplies of fresh-laid stock is responsible for a pretty general feeling that values are destined to reach a much higher range during the next few months. However, storage stocks are large and are being drawn upon quite liberally at some points. The local quotation advanced 2c at this week's opening. Current offerings candled, quoted at 27c per dozen.

Chicago.—Market steady with no change in quotations. Strictly fresh stock selling readily, but poorer grades are slow. Refrigerators rather slow. Quotations: Miscellaneous lots, cases included, 17@25c; according to quality; do., cases returned, 16½@24½c; ordinary firsts, 22@23c; firsts 25@26c; refrigerator stock in good demand at 23@23½c for April firsts.

New York.—On the surface this market is quiet and unchanged but there is an undertone of strength due to reports of rapid falling off in production. Special grades of refrigerator stock are now quoted at 26½@27c. Other quotations are: Fresh gathered extras, 33@35c; extra firsts, 31@32c; firsts, 27@29c per dozen; western gathered whites, 30@39c per doz.

Poultry.—Offerings of chickens in the local market are liberal and demand not very active. Both young and old have declined 1½@2c since a week ago. Quotations: Live.—Springs, 14c per lb; hens 14c; No. 2 hens, 10@12c; old roosters, 10@11c; turkeys 17@18c; geese 11@12c; ducks 14@15c.

Chicago.—Market firm and cleaning up well at figures averaging ½c lower on chickens and 2c lower on ducks. Quotations on live are: Turkeys, good weight, 19c; others, 12c; fowls, general run, 13c; spring chickens, 13½c; ducks, 11@12c; geese, 8@13c; guinea hens, \$4@5 per doz.

New York.—Values on prime stock of all kinds have been advanced but the market is rather dull and weak at the new range, due to a preponderance of offerings of indifferent quality. Fresh, 14@20c; turkeys, 20@22c.

Cheese.—Steady to firm at last week's figures. Wholesale lots, Michigan flats, 15@15½c; New York flats, 17@17½c; brick cream, 17@17½c; limburger, 14½@15c.

FRUITS AND VEGETABLES.

Apples.—Offerings of bulk apples are more liberal. Good grades \$3.50@3.75 per bbl., while poorer kinds, which constitute a large proportion of the bulk, are selling around \$2.25@2.75 per bbl. At Chicago, values rule from \$2.50@4 per bbl. Market is easier as growers are disposing of the lower grades and selling in bulk. This will probably continue for some time. Winter apples beginning to move.

Grapes.—Delawares and Niagaras 20c per 4-lb. basket At Chicago the market is fair with receipts small. Prices advanced. General quotation, 18@22c for 8-lb. baskets.

Peaches.—Arrivals liberal, quality inferior. Prices range from \$1@1.24 for choice and \$1.40@1.50 for fancy West Michigan stock. The Chicago trade is receiving fair supplies, but quality is inferior and fruit does not stand up well. Prices rule from 60@75c for medium size.

Pears.—Plentiful and selling at \$1.50@1.75 per bu. for Bartletts. Duchess \$3.25@3.50 per bu.

Potatoes.—Freer offerings has made trading a little easier, and prices are lower. Quotations: In bulk, 60@65c per bu; in sacks, 60@70c per bu. At Chicago trade rules easier at lower values. Receipts last week, 210 cars; previous week 245 cars, and corresponding week last year, 160 cars. The demand is good, with Michigan stock going at 55@60c per bu.

Tomatoes.—Demand good. Offerings smaller. Home-grown, 90c@1 per bu.

Cabbage.—Steady at last week's figures. Good quality quoted at \$2@2.25 per bbl.

PRICES ON DETROIT EASTERN MARKET.

Conditions at this market have not changed the past week and Tuesday saw numerous buyers and large offerings of farm products. Prices generally are unchanged. Potatoes appear in better supply with bulk sold at 75c per bu. Onions range from \$1@1.25 per bu; peppers, green 75@85c; do. red, \$1@1.10; melons

35c; tomatoes, 55@70c; cabbage, 45@50c; parsnips, 60@65c; pears, \$1; endive, 40c; butter beans, \$1.50; carrots, 50c; apples are in small supply and prices for better grades range from \$1@1.50 per bu. Eggs 35c; celery, 25@30c per large bunch. Loose hay is offered a little more freely with values at \$15@19 per ton.

GRAND RAPIDS.

A total of 350 loads of fruit and produce were offered on the city market Tuesday morning and the attendance of buyers was estimated at 550, of which number 200 to 300 were householders and people buying in small lots in a retail way. Market Master Kirwin reports that the direct-to-consumer business is growing all the time, very little of it being done a few years ago when the market was first opened. Growers do not, as a rule, deliver stuff and herein lies the chief difficulty. Buyers depend largely on the street cars in carrying home small stuff. Auto delivery lines, each covering a certain section of the city, will probably be established later. Prices on Tuesday's market in a general way, ruled as follows: Apples 50c@1; peaches \$1@2; pears \$1@1.50 per bu; grapes \$1.25@1.50; potatoes 60@70c; pickles \$1.50@1.75; lettuce 75c; beets and carrots 10c per doz. bunches; cauliflower \$1@1.50 per dozen; cabbage 90c@1; onions 90c; tomatoes 60c; celery 15@20c. Eggs are worth 25@26c; dairy butter 23c. Grain prices at the mills are as follows: Wheat 89c; rye 60c; oats 40c; corn 79c; white pea beans \$1.75; red kidneys \$1.90.

THE LIVE STOCK MARKETS.

Buffalo.

October 6, 1913.

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

Receipts of stock here today as follows: Cattle 230 cars; hogs 120 double decks; sheep and lambs 80 double decks; calves 1700 head.

With 230 cars of cattle on our market here today, and nearly all of common and medium kind, we quote the market about steady with last Monday's prices. There was no very prime cattle here; we topped the market with a load of Ohio cattle that weighed about 1160 lbs. at \$8.65 per cwt. There was quite a few of the commoner and tail end cattle unsold at the close of the market.

We quote: Best 1350 to 1500-lb. steers, \$8.50@8.75; best 1200 to 1300-lb. do, \$8.25@8.50; best 1100 to 1200-lb. do, \$8@8.25; coarse and plain weighty steers, \$7.25@7.50; choice handy steers, 1000 to 1000, \$8@8.35; fair to good do, \$7.25@7.65; grassy 800 to 1000-lb. steers, \$6.75@7.25; best cows, \$6.50@6.75; butcher cows, \$5.25@6.25; cutters, \$4.25@4.75; trimmers, \$3.75@4; best heifers, \$7.50@8; medium butcher heifers, \$6.25@7; stock heifers, \$5@5.25; best feeding steers, \$7@7.50; fair to good do, \$6.25@6.75; common light stockers, \$5.50@6; best butcher bulls, \$6.75@7.25; best bologna bulls, \$5.50@6; stock bulls, \$5@5.50; best milkers and springers, \$7@8; common to good do, \$5@6.

We had entirely too many hogs here today for the good of the trade, consequently a dull and lower market at the start, but later market active and a good clearance was made. About anything that had any weight sold at 9c per pound, while light yorkers, as to weight and quality sold from \$8@8.75. Best pigs \$7@7.50; skips \$5@6; roughs \$7.75@8.25; stags \$7@7.50. Our hog market low compared with other markets, still with buyers pretty well filled up, and a fair supply in sight for the next few days, it will be hard work to sell them at much higher prices.

The sheep and lamb market was active today, with prices about 15c higher than the close of last week; most of the choice lambs selling from \$7.75@7.80; yearlings \$5.50@6.25. Look for about steady prices the balance of the week with moderate receipts.

We quote: Choice lambs, \$7.75@7.80; cull to fair do, \$6@7.60; yearlings, \$5.50@6.25; bucks, \$3@3.50; wethers, \$5@5.25; handy ewes, \$4.75@5; heavy ewes, \$4.50@4.75; cull sheep, \$3@3.50; veals, choice to extra, \$11.50@12; fair to good, \$10@11; heavy calves, \$5.50@8.

Chicago.

October 6, 1913.

Cattle. Hogs. Sheep. Received today 16,000 40,000 40,000 Same day last year. 22,607 27,446 68,342 Received last week. 56,627 150,838 153,970 Same week last year. 53,201 82,547 195,767

This week opens with an unusually small cattle supply, doubtless resulting from recent slumps in average prices, the run embracing about 5,500 western ranglers, which is an exceptionally large supply of these cattle. The market is strong and about a dime higher for the better class of cattle, and unchanged for others, with the best heavy steers bringing \$9.40 and the best little yearlings \$9.50. Hogs are active and 5c lower, selling at \$7.90@8.85. Hogs received last week averaged but 213 lbs., comparing with 228 lbs. a month ago, 225 lbs. a year ago, 201 lbs. two years ago, 264 lbs. three years ago and 232 lbs. four years ago. Today's receipts embraced a big percentage of little pigs. The sheep offered on the market are selling at stronger prices, while lambs are weaker, feeders excepted.

Hogs have been coming to market here and elsewhere with extreme liberality for another week, but the local and eastern shipping demands were on so generous a scale that the daily offerings were well taken, and declines in prices were on the whole less than might have been expected. The enormous requirements for the fresh pork trade absorbed the principal part of the offerings and caused the choice class of light hogs to sell at the best prices, but pigs had to go at large discounts, as usual. Owing to wide-

spread prevalence of hog cholera in Iowa and other states, enormous numbers of little pigs are being hurried to market, the greater part of these being apparently healthy, but as soon as sickness breaks out in the neighborhood farmers become alarmed for the safety of their pigs. The spread in hog prices has narrowed materially, and heavy packing droves are selling relatively much higher as compared with light and medium butchering hogs than several weeks ago. The demand for provisions is fairly active, with stocks in Chicago warehouses aggregating 88,825,291 lbs., compared with 109,778,227 lbs. a month ago and 80,631,210 lbs. a year ago. At the close of the week hogs sold at \$7.90@8.90, being only about 5c lower than a week ago.

Lambs and sheep did not show up in anywhere near as large numbers last week as during the previous week, and as there was a good general demand, prices firmed up for desirable flocks, choice lambs going higher, as well as the better class of sheep. Feeding lambs continued in strong demand for shipment to Michigan, Ohio, Indiana and other states and brought firm prices. Sheep and lambs came largely from the ranges of Idaho, Montana and Wyoming, with some big shipments from Nevada, although very fair supplies of native lambs and sheep were shipped in. Sheep formed, as usual, but a moderate per centage of the daily runs. Lambs averaged 15@25c higher for the week, and sheep showed a greater advance. At the close prices were: Lambs \$5@7.50; yearlings \$4.75@5.75; wethers \$4.50@5.10; ewes \$2.50@4.75; bucks \$3.25@4. Feeders bought range lambs at \$6.10@6.75. Larger receipts are expected this week.

CROP AND MARKET NOTES.

(Continued from page 325).

per bu; rye 58c; barley 50c; clover seed \$6 per bu.

Hancock Co., Oct. 2.—Corn crop good and nearly all cut. About one-half of wheat sown. Lots of clover to thresh yet. Yield from two to four bushels per acre. Heavy rain yesterday will help pasture and wheat along. New meadows in fine shape. Late potatoes a fair crop. Apples a failure; wheat 90c; corn 68c; oats 38c; eggs 27c; butter 30c; potatoes \$1.20; hay \$7@12; clover seed \$5@6.

Darke Co., Sept. 27.—Frost visited this county Sept. 23, freezing 40 per cent of the tobacco, which will be a short crop but of good quality, growers being offered 9c per lb., but they refuse to sell. Corn nearly all cut, but the drouth made it a short crop in some places. Wheat being sowed in most places.

Indiana.

Laporte Co., Sept. 29.—Light rains last week with frost in low ground. Potatoes, tomatoes and cowpeas not injured and still growing, but a mile away badly frosted, both north and south. Very little wheat sown yet; all that had silos busy filling them; corn mostly dry and some wet the fodder as they were cutting; cider apples plentiful but choice fruit limited. Some corn light and chiefly dried up and will be needed later; cows are shrinking in milk. Butter 35c; potatoes 60c; wheat 85c; milk about 15c a gallon.

Jay Co., Sept. 29.—Late rains insure an increased acreage of fall seeding. Frost injured all late vegetables; ice the thickness of window glass was noticeable; potato crop will be very short, scarcely any early potatoes left now. Corn half shocked, hands scarce, and 8c has been paid for cutting 100 hills and tying. Apple crop is a failure practically. No grain moving to market. Wheat 87c; corn \$1.03 per cwt. highest; rye in good demand for seeding. Many are sowing alfalfa; 38 tons are reported off eight acres in three cuttings. Silos all filled; 48 were put up in immediate neighborhood this fall. Cattle very scarce. Pigs have been sold for over 20c per lb.

Nebraska.

West Scott Bluff Co., Sept. 25.—One inch of rain the last week; killing frost on the 20th; little damage; best crop in five years. Irrigation water will be shut off October 1. Sugar beet harvest on; factory started; crop is immense; some land changing hands at good prices. Some homesteads taken; some yet to take; eastern hay buyers are shipping out thousands of tons of hay (alfalfa) at about \$8.50 per ton. A lot of farmers will feed sheep this winter. Farm labor scarce. Threshing about half finished. A car of range steers were shipped out of here that sold in Omaha for \$132 per head. The writer came to Nebraska from Ohio 34 years ago.

West Central Otoe Co., Sept. 22.—The weather has been real cold here the last few weeks, or since the rainfall; plowing is about all done. Some farmers are sowing wheat. Corn is real poor; considerable corn has been cut for fodder. Wheat was a good crop, the average yield was from 25 to 30 bu. Oats were very good. The hay crop was light on account of the dry, hot summer. Pastures are beginning to green up again but cattle and horses must be fed; milch cows high in price.

South Dakota.

Charles Mein Co., Sept. 29.—The past season has been very dry; crops a failure or very light. Threshing all done. Potatoes scarce, price \$1. Dairy cattle are scarce, price \$65@85. Not much cattle feeding this winter. Frost on 18th and 19th of September, killing the late corn. Pastures dried up. Hog cholera around. Some save one or two from large herds. A few silos have been put up and are filled. Winter grain has not been sown on account of the drouth.

Deuell Co., Sept. 22.—Crops are good; corn extra good, all ripe; oats 30 to 60 bu. per acre; barley 20 to 50; wheat 10 to 20. Early potatoes good; late fair. First frost Sept. 20.

(Continued on page 331).

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

October 9, 1913.

Cattle.

Receipts, 1389. Market dull at Wednesday's and last week's prices on all grades; local meat trade very bad.

We quote: Extra dry-fed steers and heifers, \$7.50@8; steers and heifers, 1000 to 1200, \$7@7.50; do 800 to 1000, \$6.50@7; grass steers and heifers that are fat, 800 to 1000, \$6.50@7; do 500 to 700, \$5.50@6.25; choice fat cows, \$6; good do, \$5.25@5.50; common do, \$4.25@5; canners, \$3@4; choice heavy bulls \$6.25@6.50; fair to good bolognas, bulls, \$5.50@6; stock bulls, \$4.75@5.25; choice feeding steers, 800 to 1000, \$6.75@7; fair do, \$6.25@6.50; choice stockers, 500 to 700, \$6.50@6.75; fair do, 500 to 700, \$6@6.25; stock heifers, \$5@5.50; milkers, large, young, medium age, \$65@85; common milkers, \$40@50; extra fancy, \$90@110.

Roe Com. Co. sold Kamman B. Co. 6 butchers av 945 at \$6.50, 1 cow weighing 1000 at \$5, 4 heifers av 765 at \$6.75; to Sutton 12 stockers av 596 at \$6.25; to Applebaum 6 butchers av 491 at \$5.75; to Newton B. Co. 1 cow weighing 870 at \$4, 4 cows and bulls av 945 at \$5.25, 9 cows av 1180 at \$4.75, 2 do av 950 at \$5.25; to Taylor 13 feeders av 1000 at \$7.25, 3 do av 730 at \$7.25; to Mich. B. Co. 5 butchers av 634 at \$5.50, 2 cows av 1000 at \$6.50, 2 do av 1045 at \$5.75, 1 bull weighing 1500 at \$6.25; to Hammond, S. & Co. 7 cows av 990 at \$4.25; to Sullivan P. Co. 7 steers av 1037 at \$7.25; to Newton B. Co. 5 cows av 998 at \$5, 1 do weighing 690 at \$4; to Goodwin 4 do av 982 at \$4.75; to Grant 3 butchers av 590 at \$5.50; to Thompson Bros. 1 cow weighing 1000 at \$4.

Spicer & R. sold Sutton 1 bull weighing 620 at \$5.50; to Newton B. Co. 5 cows av 854 at \$5.50, 2 butchers av 790 at \$5.50, 2 do av 1135 at \$6, 1 heifer weighing 480 at \$5, 4 cows av 932 at \$4.75, 2 do av 820 at \$4, 2 do av 1065 at \$4.25; to Baldwin 1 heifer weighing 760 at \$6.50; to Sullivan P. Co. 2 bulls av 1255 at \$6.35; to Hammond, S. & Co. 1 canner weighing 630 at \$4.

Bishop, B. & H. sold Hintz 10 stockers av 580 at \$5.85; to Gerasch 17 steers av 905 at \$7.20, 2 cows av 1170 at \$6; to Hammond, S. & Co. 1 canner weighing 920 at \$4.40, 2 heifers av 615 at \$5.75, 2 bulls av 495 at \$5; to Kull 10 cows av 1033 at \$5.35; to Parker, W. & Co. 2 steers av 740 at \$7.50, 1 do weighing 960 at \$7, 50 butchers av 785 at \$6.25, 9 cows av 386 at \$4.10; to Sutton 39 stockers av 702 at \$6.75, 2 do av 710 at \$5.40; to Breitenbeck 8 steers av 912 at \$7, 5 heifers av 798 at \$6.15; to Newton B. Co. 2 cows av 875 at \$4.50, 2 do av 1035 at \$4.75; to Bowersox 3 stockers av 633 at \$5.75, 4 feeders av 832 at \$6.60, 3 do av 833 at \$6.60; to Rattkowsky 4 cows av 872 at \$5.25; to Schlock 5 butchers av 856 at \$6.60; to Master 14 stockers av 640 at \$6.50; to Applebaum 4 butchers av 635 at \$5.50; to Taylor 4 feeders av 867 at \$6.85; to Rattkowsky 13 heifers av 930 at \$4.85; to Mich. B. Co. 26 do av 730 at \$5.90, 13 butchers av 661 at \$6.25, 3 do av 710 at \$5.75, 1 cow weighing 1140 at \$5.25, 1 bull weighing 860 at \$5.30, 2 cows av 1040 at \$4.75, 4 butchers av 872 at \$4.75, 1 bull weighing 1200 at \$6, 3 cows av 900 at \$5.50.

Haley & M. sold Breitenbeck 8 cows av 991 at \$4.75, 2 do av 910 at \$4.75; to Sweet & Co. 7 feeders av 716 at \$6.75, 15 stockers av 656 at \$6.25, 3 do av 520 at \$6, 2 do av 655 at \$6.50, 4 do av 592 at \$6.25, 4 feeders av 732 at \$6.60; to Hammond, S. & Co. 2 bulls av 1345 at \$6, 3 heifers av 853 at \$6.50, 4 cows av 1025 at \$4, 20 butchers av 920 at \$7.35, 20 do av 897 at \$7.35; to Bowersox 2 feeders av 800 at \$6.80, 2 do av 805 at \$6.75, 3 cows av 1010 at \$6.25, 2 do av 800 at \$6, 5 feeders av 736 at \$6.75, 2 do av 790 at \$6.75; to Newton B. Co. 2 cows av 1100 at \$5.35, 5 do av 986 at \$5.60, 3 do av 1043 at \$4.50, 6 do av 1105 at \$5.50; to Mich. B. Co. 2 bulls av 825 at \$5.50, 1 do weighing 1450 at \$6.50; to Mason B. Co. 17 butchers av 713 at \$6.05, 10 do av 940 at \$7.25; to Grant 8 do av 602 at \$6, 2 do av 540 at \$5.25; to Bregnanah 3 heifers av 723 at \$6; to Breitenbeck 4 cows av 1025 at \$4.60, 2 do av 875 at \$4.40, 12 steers av 956 at \$7, 1 cow weighing 860 at \$4.50; to Hammond, S. & Co. 1 bull weighing 1600 at \$6.35; to Bowersox 2 feeders av 780 at \$7, 1 do weighing 710 at \$6.60; to Cook & W. 6 steers av 881 at \$7; to Hammond, S. & Co. 1 bull weighing 1180 at \$6, 1 do weighing 1780 at \$6.50.

Veal Calves.

Receipts, 452. Market steady. Best, \$10@11; others \$6@9.50.

Spicer & R. sold Mich. B. Co. 2 av 230 at \$8.50, 6 av 170 at \$10, 2 av 130 at \$10, 4 av 145 at \$10, 1 weighing 190 at \$8.50, 4 av 150 at \$10.

Haley & M. sold Youngs 6 av 155 at \$5, 4 av 160 at \$10, 7 av 250 at \$5, 2 av 145 at \$10.50, 3 av 180 at \$10.50, 2 av 240 at \$10.50, 5 av 195 at \$5, 1 weighing 190 at \$9, 1 weighing 130 at \$10, 1 weighing 170 at \$11; to Mich. B. Co. 26 av 150 at \$10.25.

Roe Com. Co. sold Mich. B. Co. 7 av 160 at \$9; to Goose 5 av 225 at \$5.50.

Bishop, B. & H. sold Ratner 1 weighing 190 at \$7, 6 av 165 at \$10, 1 weighing 120 at \$10, 1 weighing 240 at \$5.50; to Kull

3 av 155 at \$11, 3 av 150 at \$10; to Goose 8 av 160 at \$10.75; to Thompson Bros. 9 av 160 at \$10.50; to Sullivan P. Co. 3 av 175 at \$11, 1 weighing 170 at \$8, 6 av 135 at \$10, 1 weighing 140 at \$11; to Rattkowsky 3 av 200 at \$6.50, 4 av 155 at \$10, 1 weighing 200 at \$7; to Goose 1 weighing 130 at \$8.25; to Costello 4 av 130 at \$10.25; to Kull 4 av 155 at \$10; to Goose 12 av 140 at \$10; to Costello 8 av 150 at \$10; to McGuire 11 av 165 at \$11, 10 av 150 at \$10.50, 1 weighing 290 at \$7.

Sheep and Lambs.

Receipts, 7121. Good lambs 15@25c lower than on Wednesday; common and sheep steady. Best lambs, \$7; fair to good lambs, \$6.50@6.75; light to common lambs, \$5.75@6.25; fair to good sheep, \$3.75@4.25; culls and common, \$2.50@3.

Bishop, B. & H. sold Sullivan P. Co. 86 lambs av 58 at \$6, 95 sheep av 105 at \$4.10, 3 do av 95 at \$3, 58 do av 80 at \$2.75, 27 do av 60 at \$6; to Nagle P. Co. 42 lambs av 85 at \$6, 199 do av 85 at \$7.25; to Hammond, S. & Co. 18 sheep av 104 at \$4, 14 do av 80 at \$3, 44 do av 108 at \$4, 11 lambs av 57 at \$6, 138 do av 75 at \$7, 20 do av 65 at \$6; to Young 29 lambs av 70 at \$7.25, 26 do av 70 at \$6.75, 338 do av 83 at \$7; to Hammond, S. & Co. 63 do av 75 at \$7; to Rattner 29 sheep av 85 at \$3.75; to Sutton 152 lambs av 60 at \$6.25; to Sullivan P. Co. 14 sheep av 90 at \$3.25, 67 lambs av 50 at \$5.50; to Nagle P. Co. 158 do av 80 at \$7; to Costello 38 do av 55 at \$5.50; to Parker, W. & Co. 78 do av 75 at \$7; to Sullivan P. Co. 13 do av 65 at \$6.50; to Fitzpatrick Bros. 72 sheep av 125 at \$4, 43 lambs av 80 at \$7; to Hayes 39 do av 65 at \$6.35; to Hammond, S. & Co. 37 sheep av 120 at \$4; to Young 58 lambs av 70 at \$6.75; to Nagle P. Co. 57 do av 75 at \$6.85, 34 do av 65 at \$7, 107 do av 70 at \$7.

Roe Com. Co. sold Hammond, S. & Co. 41 sheep av 73 at \$3.50; to Sullivan P. Co. 11 lambs av 68 at \$6.50; to Mich. B. Co. 38 do av 80 at \$6.75, 37 sheep av 125 at \$4.

Haley & M. sold Newton B. Co. 70 lambs av 75 at \$6.75, 13 do av 80 at \$7, 20 do av 70 at \$7; to Youngs 69 do av 80 at \$7, 63 sheep av 105 at \$4.

Taggart sold Mich. B. Co. 71 lambs av 70 at \$6.75.

Spicer & R. sold Thompson Bros. 17 lambs av 75 at \$6.75, 28 sheep av 90 at \$3.80; to Hammond, S. & Co. 15 do av 100 at \$3, 18 do av 110 at \$4; to Sullivan P. Co. 18 do av 100 at \$3.50; to Thompson Bros. 21 lambs av 50 at \$6, 19 do av 55 at \$6.25; to Young 35 do av 80 at \$7; to Mich. B. Co. 8 do av 80 at \$6.75, 15 sheep av 110 at \$4; to Young 18 do av 115 at \$4, 42 lambs av 75 at \$6.80; to Mich. B. Co. 28 sheep av 105 at \$4.

Hogs.

Receipts, 5481. None sold up to noon; looks dull at Wednesday's prices.

Range of prices: Light to good butchers, \$8.35; pigs, \$6@7.50; mixed, \$8@8.35; heavy, \$8.25@8.35.

Bishop, B. & H. sold Parker, W. & Co. 1207 av 180 at \$8.35, 817 av 160 at \$8.30, 310 av 170 at \$8.25, 103 av 140 at \$8.15.

Haley & M. sold Hammond, S. & Co. 560 av 180 at \$8.35, 190 av 160 at \$8.30, 150 av 150 at \$8.25, 107 av 135 at \$8.

Spicer & R. sold same 317 av 180 at \$8.35, 150 av 160 at \$8.30.

Roe Com. Co. sold Sullivan P. Co. 510 av 180 at \$8.35, 60 av 160 at \$8.15, 70 av 160 at \$8.25.

Friday's Market.

October 3, 1913.

Cattle.

Receipts this week, 2488; last week, 1383; market dull at Thursday's decline.

We quote: Extra dry-fed steers and heifers, \$8; steers and heifers, 1000 to 1200, \$7.25@7.50; do 800 to 1000, \$6.50@7; grass steers and heifers that are fat, 800 to 1000, \$6.50@7; do 500 to 700, \$6@6.50; choice fat cows, \$6; good do, \$5.25@5.50; common do, \$4.50@5; canners, \$3.50@4.25; choice heavy bulls, \$6.50; fair to good bolognas, bulls, \$5.75@6; stock bulls, \$5@5.50; choice feeding steers, 800 to 1000, \$6.85@7; fair do, 800 to 1000, \$6.50@6.75; choice stockers, 500 to 700, \$6.50@6.75; fair do, 500 to 700, \$5.75@6.25; stock heifers, \$5@5.75; milkers, large, young, medium age, \$60@80; common milkers, \$40@55.

Veal Calves.

Receipts this week, 598; last week, 517; market steady. Best, \$10@11; others, \$6@9.50.

Sheep and Lambs.

Receipts this week, 6619; last week, 9091; market steady. Best lambs, \$6.75@7; fair to good lambs, \$6.25@6.50; light to common lambs, \$5@6; fair to good sheep, \$3.50@4; culls and common, \$2.75@3.

Hogs.

Receipts this week, 4751; last week, 5395; market steady.

Range of prices: Light to good butchers, \$8.65@8.75; pigs, \$7@7.50; light yorkers, \$8.25@8.75; heavy, \$8.50@8.75.

Hog cholera is prevailing to a really alarming extent in various parts of the country, especially in the states directly tributary to the Chicago market. Iowa farmers having met with great losses of pigs and young hogs, and recently the malady is reported to have broken out in South Dakota in its most virulent form. Heretofore that state appears to have been nearly immune from swine plague, but now it is suffering to a degree that threatens to seriously curtail the future supply of fat hogs for marketing. Parts of the country that are suffering in this way are cutting their hogs and pigs loose, without any delay, and many droves are therefore marketed prematurely, all of which means so many less fattened hogs for future marketing. Serum is being used more extensively than ever before, according to all accounts, and it appears to work well when properly administered, but many farmers make a bungling piece of work in using it, so that results are unsatisfactory. Recent official reports issued by the United States Department of Agriculture show the condition of hogs in the country the

first of September to have been the lowest in ten years, being 89.9 per cent of normal, compared with an average of 95.1 per cent for ten years. The range for ten years stood from 92.1 per cent last year to 96.6 per cent in 1910. Especially bad reports were made from Iowa, where the recent average was 71 per cent, compared with an average of 95 per cent for ten years and 86 per cent in 1904, the lowest of any year in the United States on the first of last April was reported as one per cent less than for the previous year. It may be stated in this connection that there are various localities in Iowa where the hogs are wholly free from sickness, and a visitor from Chicago to Schleswig in that state found numerous farmers who were so fortunate as to be the owners of from 400 to 500 thriving young pigs. Wherever farmers have plenty of healthy growing pigs and good pasturage and ample feed, they may consider themselves as highly fortunate.

VETERINARY.

(Continued from page 329).

mix in feed a teaspoonful of powdered pomegranate root bark for every 50 head of birds, then give each bird a dessertspoonful of castor oil three or four hours later; you may succeed in relieving them. Small doses of santonine are also very effective in destroying the different kinds of bowel parasites. Salting their feed will have a tendency to destroy all kinds of bowel parasites.

Cow Fails to Come in Heat.—I have a ten-year-old cow which calved June 10, and has never come in heat since. What can I give her to improve conditions? P. S., Standish, Mich.—Give her 1 dr. of ground nuxvomica and 2 drs. ground red pepper in feed three times a day.

Indigestion.—My six-year-old cow freshened two weeks ago; since then she fails to give more than 2 or 3 qts. of milk daily. Other years when she freshened she gave a large mess of milk; she does not seem to be sick. A. W. A., Lennon, Mich.—Give cow 1 lb. epsom salts to open bowels, also give 1 oz. soda bicarbonate, 1 oz. ginger and 1 oz. powdered charcoal at a dose in feed three times a day. Grass is good food for her and other kinds of green fodder is what she requires.

Ringworm on Calves.—Rheumatic Cows.—I would like to know what will cure ringworm on calves; also tell me what to give my stiff cows. W. M. Ruth, Mich.—Paint spots with tincture iodine every two days, then later apply vaseline to start hair. Give cows 2 drs. sodium salicylate at a dose two or three times a day.

Nasal Catarrh.—I have a lamb six mos. old that discharges from nose; has poor appetite and is very dumbish. A Subscriber, Elsie, Mich.—Give lamb 2 grs. quinine and 5 grs. sulphate of iron and one hundred and twentieth of a grain of strychnine at a dose three or four times a day.

Sore Throat.—My dog has been acting strangely, licks breast and fore legs, has trouble in swallowing food or water, looked into mouth and found nothing. F. L. McD., Levering, Mich.—Give him 3 grs. quinine in solution at a dose three times a day. Rub camphorated oil on throat twice a day.

Partial Dislocation of Stifle.—Last spring I bought a three-year-old filly for farm work and road driving; she is healthy, but when allowed to stand in stable an hour or more she seems to have trouble in stepping with right hind leg. She is not lame, but stiff and soon recovers. I fail to find any swelling or soreness. A. J. C., Perry, Mich.—The stifle cap slips slightly out of place and when in this position leg locks, but when cap moves into groove she can step with ease. Clip off hair and apply one part powdered cantharides and six parts lard to stifle joint every ten days and she will soon get well.

Choked on Oats.—One week ago my mare choked when eating oats; since then she has coughed considerable and lost flesh. She eats and drinks fairly good but has poor appetite. O. C., Charlevoix, Mich.—Apply one part fluid extract belladonna and ten parts glycerine to neck opposite stricture twice or three times a day, feed her grass, ground moistened grain, but no dry fodder. Drenching her with small quantities of olive oil will have a good effect. Her recovery will be slow.

Open Joint.—My mare met with an injury to hockjoint some three months ago and has never recovered. The joint opened and we have been unable to heal it. I think it is now what is called open joint and if so tell me what will heal it. W. P., Woodbury, Mich.—It is a doubtful case and I am inclined to believe she will not recover. Apply equal parts powdered alum, boric acid and tannic acid to wound twice a day. A small quantity of iodoform should be applied daily. She should be kept quiet and in a clean place.

Impure Blood.—Horse had distemper some time ago, was very sick, partially recovered, but since then he has skin eruption and is out of condition. Thought he might have been poisoned. H. C., Gaylord, Mich.—Give him a dessertspoonful of Donovan's solution at a dose in feed three times a day and apply iodine ointment to throat daily.

I Was Deaf 25 Years

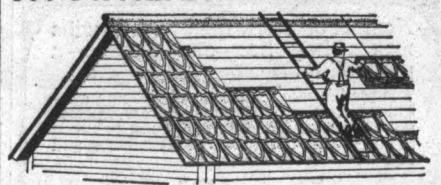
I Can Now Hear with these soft, artificial ear drums. I wear them in my ears night and day. They are perfectly comfortable. No one sees them. Write me and I will tell you a true story—how I got deaf and how I made myself hear. Address Artificial Ear Drum Co. GEO. P. WAT, c Adelalide St., Detroit, Mich.

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GEORGE M. CHANDLER, Onaway, Mich.

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Cheaper Than Wood or Slate 100 Percent Better Than Either



Positively proof against fire, lightning, windstorm or rust. Fit perfectly tight with lock and flange. No water can seep through. No soldering—just hammer and nails. Cost of laying will not exceed 25 cents per square. Made from DICKELMAN EXTRA best quality open hearth plates. If you want a perfect roof at a low cost put on

DICKELMAN EXTRA

"CLUSTER" SHINGLES

If your dealer does not handle them write us direct—don't accept any cheap substitute.

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We also make Corrugated, V-crimped and Roll Roofing. Ask for catalog and prices.

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We get the top price on consignments, make liberal advancements and prompt remittances.

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HAY Potatoes, Apples. We pay highest market price for car loads. The E. L. Richmond Co., Detroit, Mich. Responsible representatives wanted.

2,000 FERRETS They hustle rats and rabbits. Small, medium and large. Prices and book mailed free. NEWELL A. KNAPP, Rochester, Ohio.

FARMERS—We are paying from 5c to 9c above the Official Detroit Market for now-laid eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., 31-33 Griswold St., Detroit, Mich.

EGGS, Etc.—Small consignments from producers in Michigan bring every attractive price. Returns day of arrival. Refer to Dun or Bradstreet. Zenith Butter & Egg Co., 355-59 Greenwich St., New York, N.Y.

Breeder's Directory—Continued.

SHEEP.

SHEEP

Perserino Cross Breeds
125 Ewes, Lambs and Bucks

For \$700, F. O. B. Walhalla.

from ranch formerly owned by Editor Sheep Breeder's Gazette at Walhalla, Michigan. A fine lot for breeding purposes. G. H. YOUNG, Walhalla, Mich.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS, "the sheep man of the east." I sell and ship everywhere and pay express charges. I will start one man in each twp. Write for club offer and descriptive price list. Shropshires, Rambouillet, Polled-Delaines and PARSONS OXFORDS. R. I. Grand Lodge, Michigan.

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

OXFORD RAMS AND EWES FOR SALE at farmers' prices. Address B. F. Miller or Geo. L. Spillane, Flint, Mich.

OXFORDS—REGISTERED RAMS, DIFFERENT AGES \$12 to \$15 each. B. B. REAVEY, Akron, Michigan

Three-Year-Old OXFORD and SHROPSHIRE Rams For sale cheap. Parkhurst Bros., Reed City, Mich.

SHEEP FOR SALE IN CARLOAD LOTS. PARKHURST BROS., Reed City, Michigan.

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2 1/2 miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. COOK.

FOR SALE at once twenty choice Reg. Vanhomer Rambouillet ewes also Holstein Bulls. F. E. EAGER & SON, Howell, Michigan.

The Ingleside Farm is offering more and better Shropshire Sheep than ever before. All stock recorded. Write us what you want. HERBERT E. POWELL, Ionia, Mich. Citizen's Phone.

SHROPSHIRE A few choice rams priced right for immediate shipment. C. J. THOMPSON, Rockford, Michigan.

SHROPSHIRE RAMS. Registered. Sired by Imp. Minton ram. Quality for grade or registered flocks. Also some young ewes. Prices right. WILLIS S. MEADE, Laporte, Michigan.

1st and 2nd Prize two-year-old Shropshire Rams 1912. Also good yearling Rams and Ewes for sale. E. E. LELAND & SON, Ann Arbor, Michigan.

REGISTERED SHROPSHIRE—Rams and ewes for sale at reasonable prices. Breeding of the best. Harry Potter, Davison, Mich.

MAPLESHADE FARM SHROPSHIRE Reg. yearling and ram lambs, 25 ewes and 15 ewe lambs. WM. P. PULLING & SON, Parma, Michigan.

Reg. Shropshire—2 and 3 yr. old rams and some extra good lamb rams, wool and mutton type. Geo. P. Andrews, Danville, Ingham Co., Mich.

SHROPSHIRE YEARLING and two-year-old Rams. Good ones, priced to sell. W. F. MORRIS, Flushing, Michigan.

SHROPSHIRE RAMS AND EWES FOR SALE. DAN BOOHER, R. I. Marion, Michigan.

Shropshire Rams—Good ones cheap. Write before Aug. 15th. For special proposition. KOPE (KON) FARM, Kinderhook, Michigan.

Are You Fattening Lice or Hogs?

Neglect of pens, runs and troughs makes hog lice—and disease—a probability.

The feeder who thinks unwholesome conditions harmless is, therefore, throwing away good money. The one sure road to profit in hog raising is by way of cleanliness and sanitation through use of

Dr. Hess Dip and Disinfectant

It destroys lice, the cholera germ, in fact, all germs of infectious diseases, when sprinkled about the premises. Powerful, harmless, easily applied. Make a solution, one gallon of dip to 70 or 100 gallons of water. Spray with this thoroughly. Prepare a plank-sided wallow and let the hogs roll in the dip solution. This treatment will end lice and, in addition, render hogs immune to cholera and other infectious diseases.

Dr. Hess Dip meets the Government requirement for sheep scab. Best thing known for sheep ticks and for spraying horses and cattle. Also a valuable agent for disinfecting sewers, sinks, drains and outbuildings.

Write for a free dip booklet.

DR. HESS & CLARK, Ashland, Ohio



SAVE-THE-HORSE

(Trade Mark Registered.)



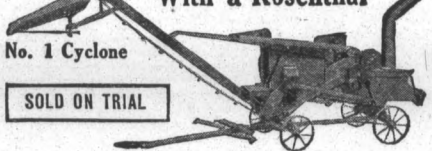
Gets Advice; Sells Horse for \$800.

Ogden, Ia., April 18, 1912. Troy Chemical Co., Binghamton, N. Y. Gentlemen—I have used Save-The-Horse for years, and I never found any case but it would do just what you claim for it. I have a horse I want to race and want your advice and another book. I lost or mislaid mine. The last time I bothered you you gave me advice and treatment did the work. I sold the horse for \$800. Yours truly, H. S. HELPHRY.

WE Originated the Plan of Treating Horses—Under Signed Contract to Return Money if Remedy Fails. But write, describing your case, and we will send you a BOOK—sample contract, letters from breeders and business men the world over, on every kind of case, and advice—all free to horse owners and managers.

TROY CHEMICAL CO., 20 Commerce St., Binghamton, N. Y. Druggists everywhere sell Save-the-Horse WITH CONTRACT or sent by us Express Prepaid.

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Corn Husker and Shredder
Made for farmer's own use; only 6 to 8 H. P. required. We also make three larger sizes requiring 10 to 20 H. P. 18 years in the field. Shredded corn fodder is natural food. Will keep cattle in healthful condition. Write for catalog. State how many horse power you use.
ROSENTHAL CORN HUSKER CO., Box 2, Milwaukee, Wis.
We also make Rosenthal Feed Cutters and Silo Fillers



Fix Your Roof

You can make the old worn-out tin, iron, steel, felt or gravel roof give you as much service as a new roof and you can double the life of that old shingle roof.

ROOF-FIX Cures Roof Troubles

and keeps them cured. Cost slight. One coat does the work. In black and red. Ready for use. Absolutely guaranteed to do the work. Write at once for the free Roof Book. Address G. E. CONKEY CO., 3339 Woodland Ave., Cleveland, Ohio.

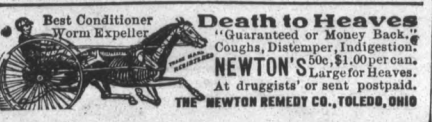


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THE FREELAND CORN CRIB

is absolute proof against rats, mice, birds and fire. Made of perforated galvanized sheet steel, is practically indestructible. Cures corn perfectly. Easy to erect. Write for illustrated catalog of sizes, prices and all details.

Pioneer Manufacturing Company, Middlebury, Indiana.



Death to Heaves

Guaranteed or Money Back. Coughs, Distemper, Indigestion, etc. Cures \$1.50 per cent.

NEWTON'S Large for Heaves. At druggists or sent postpaid.

THE NEWTON REMEDY CO., TOLEDO, OHIO

LIVE STOCK AWARDS AT THE STATE FAIR.

(Continued from last week.)

Victoria Swine.

Boar 2 yrs. or over—1st. Edward L. Stout, Portland, Ind.
Boar 18 mos. and un. 2 yrs.—M. T. Story, Lowell, Mich.

Boar 12 mos.—1st. Story.
Boar 6 mos.—1st. Story; 2nd, C. A. Story, Lowell, Mich.; 3rd, Stout; 4th, Geo. Ineichen & Sons, Geneva, Ind.

Boar un. 6 mos.—1st and 2nd, M. T. Story; 3rd and 4th, C. A. Story.
Sow 2 yrs. or over—1st, M. T. Story; 2nd, C. A. Story; 3rd, Stout.

Sow 18 mos.—1st, M. T. Story; 2nd, C. A. Story.
Sow 12 mos.—1st, M. T. Story; 2nd, C. A. Story.

Sow 6 mos.—1st, C. A. Story; 2d, Stout; 3rd and 4th, Ineichen.
Sow un. 6 mos.—1st and 2nd, C. A. Story; 3rd and 4th, Stout.

Exhibitor's Herd—1st, M. T. Story; 2d, C. A. Story; 3rd, Stout.
Breeder's Herd—1st, M. T. Story; 2nd, C. A. Story; 3rd, Ineichen.

Four Get of Same Boar—1st, M. T. Story; 2nd, C. A. Story; 3rd, Stout; 4th, Ineichen.
Four Produce of Same Sow—1st, M. T. Story; 2nd, Ineichen; 3rd, Stout; 4th, C. A. Story.

Champ. Boar 1 yr. or over—1st, Stout.
Champ. Boar 1 yr. or un.—1st, M. T. Story.
Champ. Sow 1 yr. or over—1st, C. A. Story.

Champ. Sow un. 1 yr.—1st, M. T. Story.
Gd. Champ. Boar—Stout.
Gd. Champ. Sow—C. A. Story.

Chester White Swine.

Boar 2 yrs. or over—1st, Geo. Ineichen & Sons, Geneva, Ind.; 2nd, Harry L. Crandall, Cass City, Mich.; 3rd, Adams Bros., Litchfield, Mich.; 4th, Chas. Wenger, Clayton, O.

Boar 18 mos.—1st, Ineichen; 2nd, Crandall; 3rd, Adams.
Boar 12 mos.—1st, Ineichen; 2nd and 3rd, Crandall.

Boar 6 mos.—1st, Ineichen; 2nd and 3rd, Crandall; 4th, Adams.
Boar un. 6 mos.—1st, Ineichen; 2nd and 3rd, Crandall; 4th, Adams.

Sow 2 yrs. or over—1st, Ineichen; 2nd, Crandall; 3rd, Adams.
Sow 18 mos.—1st, Ineichen; 2nd, Crandall; 3rd and 4th, Adams.

Sow 12 mos.—1st, Ineichen; 2nd, Crandall; 3rd and 4th, Adams.
Sow 6 mos.—1st, 2nd and 3rd, Ineichen; 4th, Crandall.

Sow un. 6 mos.—1st, Ineichen; 2nd and 3rd, Crandall; 4th, Adams.
Exhibitor's Herd—1st, Ineichen; 2nd, Crandall; 3rd, Adams.

Breeder's Herd—1st, Ineichen; 2nd, Crandall; 3rd, Adams; 4th, Wenger.
Four Get of Same Boar—1st, Ineichen; 2nd, Crandall; 3rd, Adams; 4th, Wenger.

Four Produce of Same Sow—1st, Ineichen; 2nd, Crandall; 3rd, Adams; 4th, Wenger.
Champ. Boar 1 yr. or over—Ineichen.

Champ. Boar un. 1 yr.—Ineichen.
Champ. Sow 1 yr. or over—Ineichen.
Champ. Sow un. 1 yr.—Ineichen.
Gd. Champ. Boar—Ineichen.
Gd. Champ. Sow—Ineichen.

Large Yorkshire Swine.

All first premiums in this class were awarded to F. M. Buck, Laporte, Ind., the only exhibitor of the breed.

Tamworth Swine.

Boar 2 yrs.—1st and 2nd, W. W. Morton, Russellville, Ky.; 3rd, Adams Bros., Litchfield, Mich.

Boar 18 mos.—1st and 2nd, Morton; 3rd, Adams.
Boar 12 mos.—1st, Morton; 2nd, Adams; 3rd, J. B. Mackay, Farragut, Iowa.

Boar 6 mos.—1st and 2nd, Morton; 3rd, Adams; 4th, Mackay.
Boar un. 6 mos.—1st and 2nd, Morton; 3rd and 4th, Adams.

Sow 2 yrs.—1st and 2nd, Morton; 3rd, Adams; 4th, Mackay.
Sow 18 mos.—1st and 2nd, Morton; 3rd, Adams.

Sow 12 mos.—1st, Morton; 2nd, Adams; 3rd and 4th, Mackay.
Sow 6 mos.—1st, Morton; 2nd and 3rd, Adams.

Sow un. 6 mos.—1st, Morton; 2nd, 3rd and 4th, Adams.
Exhibitor's Hd.—1st, Adams; 2d, Mackay; 3rd, Morton.

Breeder's Herd—1st, Adams; 2nd, Mackay; 3rd, Morton.
Four Get of Same Boar—1st, Adams; 2nd, Mackay; 3rd, Morton.

Four Produce of Same Sow—1st, Adams; 2nd, Mackay.
Standard Bred Horses.

Stallion 4 yrs.—1st, W. W. Collier, Pontiac, Mich.; 2nd, Geo. W. Slaughter, Birmingham, Mich.; 3rd, J. R. Peak & Son, Winchester, Ill.; 4th, Peak.

Stallion 3 yrs.—1st, Slaughter; 2nd, F. Colby, Detroit, Mich.; 4th, Peak.
Stallion 2 yrs.—1st, Peak; 2nd, Chas. Pierce, Windsor, Ont.; 3rd, Slaughter; 4th, Collier.

Stallion 1 yr.—1st, Slaughter; 2nd, Peak.
Stallion Colt—1st, 2nd, 3rd, Collier.
Mare and Colt—1st, Collier.

Mare 4 yrs. or over—1st, Slaughter; 2nd and 3rd, Colby; 4th, Peak.
Mare 3 yrs.—1st, Colby; 2nd, Peak.
Mare 2 yrs.—1st, Peak; 2nd, Collier; 3rd and 4th, Slaughter.

Mare 1 yr.—1st, Peak; 2nd, Fowler.
Mare Colt—1st, Collier.
Stallion and Get—1st, Peak; 2nd, Collier.

Champ. Stallion—Collier.
Champ. Mare—Slaughter.
Hackney Horses.

Stallion 4 yrs.—1st, Endicott Farm, Birmingham, Mich.; 2d, C. E. Bunn, Peoria, Ill.; 3rd, Endicott Farm.
Stallion 3 yrs.—1st, Bunn.

Stallion 2 yrs.—1st, H. Hodson, Flint, Mich.; 2nd, Endicott Farm; 3rd, Thomas Kincaid, Flint, Mich.
Stallion 1 yr.—1st, Endicott Farm.

Stallion Colt—1st, Endicott Farm; 2nd, Geo. Ackerman & Son, Elkton, Mich.
Mare 4 yrs.—1st, Bunn; 2nd and 3rd, Endicott Farm.

Mare 3 yrs.—1st and 3rd, Bunn; 2nd, Endicott Farm.
Mare 2 yrs.—1st, Endicott Farm; 2nd, Hodson; 3rd, Bunn.

Mare 1 yr.—1st, Endicott Farm; 2nd, Hodson.
Stallion and Get—1st, Endicott Farm.
Mare and Produce—1st, Endicott Farm; 2nd, Ackerman.

Champ. Stallion—Endicott Farm.
Champ. Mare—Bunn.
American Carriage Horses.

Stallion 4 yrs.—1st, J. R. Peak & Son, Winchester, Ill.; 2nd, Geo. W. Slaughter, Birmingham, Mich.; 3rd, W. W. Collier, Pontiac, Mich.; 4th, F. P. Mitchell, Columbus, O.

Stallion 3 yrs.—1st, Slaughter; 2nd, Peak.
Stallion 2 yrs.—1st, Peak; 2d, Slaughter.

Stallion 1 yr.—1st, Peak; 2nd, Slaughter.
Stallion Colt—1st, 2nd and 3rd, Collier.
Mare 4 yrs.—1st and 3rd, Peak; 2nd, Slaughter; 4th, Collier.

Mare 3 yrs.—1st, Peak; 2nd, F. C. Colby, Winchester, Ill.
Mare 2 yrs.—1st, Peak; 2nd, Collier.

Mare 1 yr.—1st, Peak; 2nd, Shuttleworth Bros., Leamington, Ont.
Mare Colt—1st, Collier.
Stallion and Get—1st, Peak; 2nd, Collier.

Mare and Produce—1st, Peak.
Champ. Stallion—Peak.
Champ. Mare—Peak.
Percheron Horses.

Stallion 4 yrs.—1st, Bell Bros., Wooster, O.; 2nd, B. F. Anderson, Adrian, Mich.; 3rd, F. J. Sullivan, Windsor, Ont.

Stallion 3 yrs.—1st, Anderson.
Stallion 2 yrs.—1st and 2nd, Bell Bros.; 3rd, Anderson.

Stallion 1 yr.—1st, Anderson.
Stallion Colt—1st, Anderson.
Mare 4 yrs.—1st, Bell Bros.; 2nd and 3rd, C. M. Case, Adrian, Mich.; 4th, Anderson.

Mare 3 yrs.—1st, Sullivan.
Mare 2 yrs.—1st, Anderson; 2nd, Bell Bros.

Mare 1 yr.—1st, Sullivan.
Mare Colt—1st and 2nd, Case.
Stallion and Get—1st, Anderson.

Mare and Produce—1st, Anderson.
Champ. Stallion—Bell Bros.
Champ. Mare—Bell Bros.
Percheron Society Specials.

Stallion 3 yrs.—1st, Anderson.
Stallion un. 3 yrs.—1st, 2nd and 3rd, Anderson.

Champ. Stallion—1st and 2nd, Anderson.
Mare—1st, Anderson.
Mare un. 3 yrs.—2nd and 3rd, Case.

Champ. Mare—1st, Anderson; 2d, Case.
Get of Stallion—1st, Anderson.
Produce of Mare—1st, Anderson.

Five Stallions—1st, Bell Bros.; 2nd, Anderson.
Champ. Stallion—1st and 2nd, Bell Bros.
Champ. Mare—1st, Bell Bros.; 2nd, Anderson.

Belgian Horses.

Stallion 4 yrs.—1st and 2nd, Bell Bros.; 3rd, Anderson.
Stallion 3 yrs.—1st and 2nd, Bell Bros.

Stallion 2 yrs.—1st and 2nd, Bell Bros.
Mare 2 yrs.—1st and 2nd, Bell Bros.
Champ. Stallion—1st, Bell Bros.

Belgian Association Specials.

Stallion 4 yrs.—1st and 2nd, Bell Bros.
Stallion 3 yrs.—1st and 2nd, Bell Bros.

Stallion 2 yrs.—1st and 2nd, Bell Bros.
Five Stallions, 1 Ex.—1st, Bell Bros.
Champ. Stallion and Mare—1st, Bell Bros.

Heavy Draft Horses.

Mare or Gelding 4 yrs.—1st, R. B. Pinkerton, Essex, Ont.; 2nd, H. F. Crandall, Cass City, Mich.; 3d, C. M. Case, Adrian, Mich.; 4th, Geo. Ackerman & Son, Elkton, Mich.

Mare or Gelding 3 yrs.—1st, 2nd and 3rd, Ackerman.
Mare or Gelding 2 yrs.—1st, B. F. Anderson, Adrian, Mich.; 2nd, Crandall, 3rd, and 4th, Ackerman.

Mare or Gelding 1 yr.—1st, Pinkerton; 2nd, Crandall; 3rd, Ackerman.
Filly Colt—1st, Pinkerton; 2nd, Ackerman.

Broad Mare and Colt—1st and 4th, Pinkerton; 2nd, Case; 3rd, Ackerman.
Four Grade Colts—1st, Ackerman.

Pair Heavy Draft—1st, Pinkerton; 2nd, Anderson; 3rd and 4th, Ackerman.
Shetland Ponies.

Stallion 3 yrs.—1st and 2d, C. E. Bunn, Peoria, Ill.; 3rd and 4th, Bunn.
Stallion 2 yrs.—1st, Bunn; 2nd, L. F. Allis, Adrian, Mich.

Stallion 1 yr.—1st, Bunn; 2nd, Allis; 3rd, Bean Creek Farm, Adrian, Mich.
Stallion Colt—1st, Bean Creek Farm; 2nd, Allis.

Mare 3 yrs.—1st and 2nd, Bunn; 3rd, Bean Creek Farm; 4th, Allis.
Mare 2 yrs.—1st and 2nd, Bunn; 3rd, Allis; 4th, Bean Creek Farm.

Mare 1 yr.—1st, Bunn; 2nd, and 3rd, Bean Creek Farm.
Mare Colt—1st, Allis; 2nd, Bunn.

Clydesdale Horses.

Stallion 4 yrs.—1st and 2nd, Geo. Ackerman & Son, Elkton, Mich.
Stallion 2 yrs.—1st, R. B. Pinkerton, Essex, Ont.

Stallion 1 yr.—1st, Pinkerton, 2nd, Ackerman.
Colt—1st and 3rd, Pinkerton; 2nd, Ackerman.

Mare 4 yrs.—1st and 4th, Pinkerton; 2nd, Ackerman; 3rd, H. Crandall, Cass City, Mich.
Mare 3 yrs.—1st and 2nd, Ackerman.

Mare 2 yrs.—1st, Crandall; 2nd and 3d, Ackerman.

Mare 1 yr.—1st, Pinkerton; 2nd, Crandall; 3rd, Ackerman.

Colt—1st, Pinkerton; 2nd, Ackerman.

Stallion and Get—1st and 2nd, Ackerman.

Mare and Produce—1st and 2nd, Pinkerton; 3rd, Crandall.

Champ. Stallion and Mare—Pinkerton.

Roadsters—Horses.

First—J. R. Peak & Son, Winchester, Ill.; 2nd, Geo. W. Slaughter, Birmingham, Mich.; 3rd and 4th, Peak & Son.

Pairs—1st, 2nd and 4th—Peak & Son; 3rd, Slaughter.
Runabout—1st and 4th, Slaughter; 2nd, Orrmont Farms, Piqua, O.; 3rd, Endicott Farm, Birmingham, Mich.

Local Roadsters—1st, W. W. Collier, Pontiac, Mich.; 2nd, 3rd and 4th, Slaughter.
Local Runabout—1st and 2nd, Slaughter; 3rd and 4th, Endicott Farm.

Harness Horses.

14-1 to 15 Hands—1st and 3rd, Orrmont Farms; 2nd, Endicott Farm; 4th, H. Hodson, Flint, Mich.

Pair 14-1 to 15-1—1st, Orrmont Farms; 2nd, F. P. Mitchell, Columbus, O.; 3rd, Slaughter; 4th, Endicott Farm.

Pair 15 to 15-2 Hands—1st, Slaughter; 2d, Orrmont Farms; 3rd, Endicott Farm; 4th, Mitchell.

Pair 15- to 16-1st, Orrmont Farms; 2nd, Mitchell; 3rd, Endicott Farm; 4th, Peak & Son.

Over 15-2—1st, Peak & Son; 2nd, Endicott Farm; 3rd, Peak & Son.
Local 14-1-15-1—1st, Slaughter; 2nd, Endicott Farm; 3rd, Slaughter; 4th, Hodson.

Local 15-1-16 Hands—1st, Slaughter; 2nd, Endicott Farm; 3rd, Hodson; 4th, Slaughter.
Gig Horses.

All Ages—1st, Orrmont Farms, Piqua, O.; 2nd, Geo. W. Slaughter, Birmingham, Mich.; 3rd, C. E. Bunn, Peoria, Ill.; 4th, Endicott Farm.

Tandem—1st, Orrmont Farms; 2nd, Slaughter; 3rd, Orrmont Farms.
Saddle—Five-Gait.

Stallion, Mare or Gelding—1st, F. P. Mitchell, Columbus, O.
Saddle—Three-Gait.

14-1 to 15-1—1st and 2nd, Mitchell; 3rd, J. W. Drake, Detroit, Mich.; 4th, Joseph Dyer, Detroit, Mich.

15-1 to 16-1st, Mitchell; 2nd, Hodson; 3rd, Peak; 4th, Mitchell.
Local, not over 14-3—1st, Drake; 2nd, Hodson; 3rd, Slaughter; 4th, Dyer.

Ridden by Lady—1st, 2nd and 3rd, Mitchell; 4th, Peak.
Combination—Harness and Saddle—1st and 2nd, Mitchell; 3rd, Hodson; 4th, Peak.

Police Mount—1st, F. M. McEvoy, Detroit, Mich.; 2nd, H. G. Augell, Detroit, Mich.; 3rd, R. Y. Moore, Detroit, Mich.; 4th, H. A. Westcott, Detroit, Mich.

Shetlands.

Four in Hand—1st, Bunn; 2nd, L. F. Allis, Adrian, Mich.
Pair—1st and 2nd, Bunn; 3rd and 4th, Allis.

Pony and Saddle—1st, Bunn; 2nd, Allis; 3rd, Bean Creek Farm; 4th, Dyer.
Not Shetland.

In Harness—1st, Bunn; 2nd, Endicott Farm; 3rd and 4th, Bunn.
Local in Harness—1st, Endicott Farm; 2nd, Slaughter; 3rd, Endicott Farm.

LIVE STOCK NEWS.

The recent advances in cattle prices came as somewhat of a surprise to many owners of cattle in preparation for the market, the highest prices being paid for the best finished heaves recorded since last January. The scarcity of well-bred beef cattle in most feeding districts of the country is causing general comment, and the general belief is that much higher prices are going to be seen before the top is finally reached. A year ago the top stood at \$11 per 100 lbs., and the highest price of the year was reached in the first week of December, when fancy heaves brought \$11.25. On the late rise the best steers brought \$9.50. While the choicer lots of steers are still selling much below the prices paid last year, the commoner cattle are bringing much higher prices than those paid at that period, and stockers and feeders are decidedly higher than then. Many intending buyers of cattle for fattening are holding back, regarding ruling prices as too high, but numerous old-time stockmen are buying in the expectation that the market for finished beef cattle is going to rule much higher later on. Of late the largest demand has been for a light class of steers for roughing through the coming winter, but a fair demand has been witnessed from Illinois for fleshy feeders. The cheaper and lighter cattle for roughing through are going largely to Ohio, Indiana and Pennsylvania.

The recent convention held in Chicago by the American Meat Packers' Association was largely attended by packers from all parts of the country, and they showed deep concern for the future production of beef cattle. It was pointed out that fewer cattle are being raised in the United States than in former years, the decrease being steady, and the decrease in the last six years is at least twenty million head. The population of the country has grown 21 per cent in ten years, and we cannot expect large importations from Argentina, as other countries are heavy consumers of these meats. Argentine cattle are inferior to ours, and Australian frozen meats have never met with favor in this country. Evidently the time has arrived for our American farmers to engage in the beef cattle industry, breeding cattle as well as finishing them.

A chronicler of events in the Chicago provision market says it will require a good export demand for hog meats and lard and a big southern demand as well to keep ahead of the manufacturing which has been going on at a lively rate for some weeks. The stocks of provisions in warehouses are on a liberal scale, although below the exceptionally large supplies in store a year ago. Bacon is having a large sale, despite its dearthness, and so is pork.

There has been an extensive cashing in policy on the part of cattle feeders in recent weeks, as they failed to look ahead to prospective profits resulting from making gains in weight, which would balance the cost of their feed.

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 the letter.

Luxation of Stifle Joint.—I have a colt five months old which has a fullness of both stifle joints, which I noticed soon after birth. When he moves I can hear a cracking of joints, but he has never been troubled with a dislocation of stifle. Our local Vet. blistered him three times without any effect. Now I would like to know what had better be done. W. C. T., Palms, Mich.—You had better leave your colt alone, until stabling him; then apply equal parts turpentine, aqua ammonia and olive oil every two or three days; or apply a light blister once a week, using cerate of cantharides or any other good home blisters you may have on hand. Usually such cases improve as the animal matures.

Chronic Thickened Condition of Hind Leg.—My horse has a thickened condition of hind leg from fetlock to hock and the hock joint is also some enlarged. I am inclined to believe that it was originally a sprain and the remedies that I have applied have not reduced it much. N. E., Caro, Mich.—Your draft horse should not be heavily fed on grain when idle; he should have exercise every day; after coming in from work the leg should be sponged off with cold water, cotton applied and a light bandage, and left on for two or three hours; then the leg should be hand-rubbed. Give him 1 dr. potassium iodide and 2 drs. powdered nitrate of potash at a dose in feed twice a day. When cool weather sets in you might apply one part iodine and ten parts fresh lard to thickened parts twice a week. No matter what you do, you will find it difficult.

Effects of Distemper.—I have a horse that had distemper last winter, but seemed to make a fairly good recovery; however, when he takes a little cold or when driven in cool morning air, coughs and rattles in head; but, after working a few hours breathes all right. D. L. P., Battle Creek, Mich.—Apply one part tincture iodine and four parts camphorated oil to throat every day or two. Give a teaspoonful fluid extract cinchona, a teaspoonful of tincture opium and a teaspoonful powdered nitrate of potash at a dose three times a day.

Vertigo.—My eight-year-old mare has a sick spell about every week. When first taken she backs, places head to left side and when in harness throws herself. She appears to be paralyzed; is unable to get up for a few minutes; she works fine, does not appear to be sick, but after these attacks is inclined to tremble. Mrs. I. S., Brighton, Mich.—Your mare suffers from stomach vertigo (staggers) and will be benefited by regular exercise, keeping her bowels open, limiting her supply of grain when idle and by giving her 2 drs. of bromide of potash dissolved in a pint of warm water and mixed with feed at a dose three times a day.

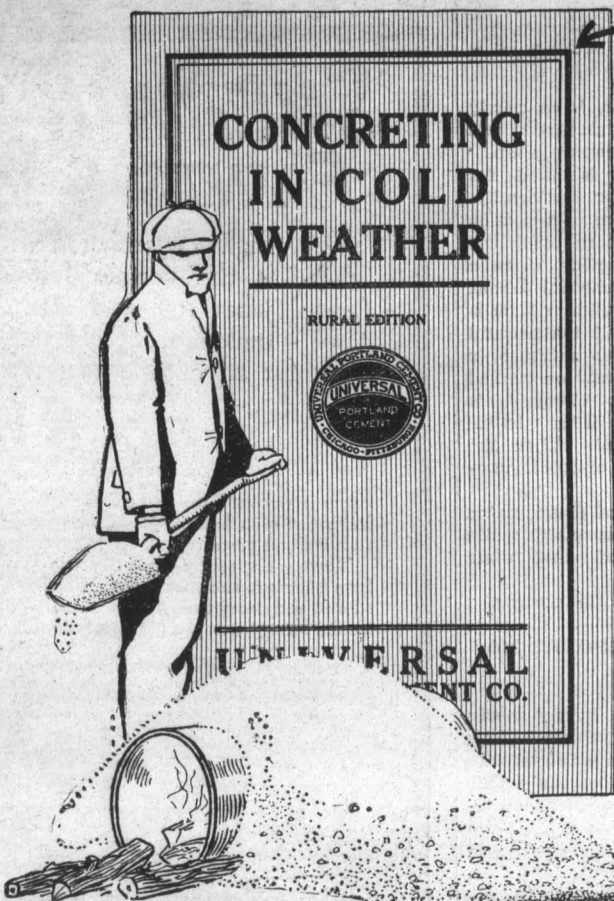
Fistula of Head.—I have a valuable cow eight years old that was dehorned when she was a heifer and in some way she injured stump, which is now a raw, angry looking sore. The bunch is about the size of a hen egg and raw. W. J. W., Lake Odessa, Mich.—This fungus growth should be removed, then apply powdered alum twice a day. If it is inclined to bleed apply Monsell's solution of iron and cover bunch with oakum. If you do not care to cut off fungus, apply powdered sulphate of copper occasionally.

Hole in Side of Teat.—I have a heifer which just came fresh that has a hole in side of teat and when she is milked, milk flows through this opening. J. L., Alto, Mich.—The edges of opening should be made raw, then wound stitched together closely; then apply boracic acid twice a day.

Cows Give Inferior Quality of Milk.—My cows appear to be perfectly healthy, but their milk is not good; the milk appears to be normal and passes through strainer all right, but after standing a while, has a peculiar taste and when cream is churned, there is a stringy sort of stuff mixed with it. These cows run on pasture and I feed sweet cornstalks after most of the corn has been picked off. Their milk has not been right for the past four months. B. M., Plymouth, Mich.—A change of feed might be advisable; besides, give each of the cows a teaspoonful of hypo-sulphite of soda at a dose twice a day. Kindly understand this trouble may come from the manner in which you handle and keep the milk. Your milking utensils, the cow's udder, the milkers' hands, the stable or yard where they are milked, and your milk house, should be perfectly clean and free from contaminating influences.

Turkeys Have Worms.—I wish you would give me a good recipe for worms in turkeys for I am satisfied mine are troubled with them. M. S., Sunfield, Mich.—You had better feed garlic or onions to your turkeys; besides, give each one 20 grains of powdered areca nut or the same quantity of powdered kamala at a dose occasionally to your turkeys for they may have tapeworm. Now, if you are sure that your fowls have tapeworm,

(Continued on page 327).



Don't Wait Till Spring To Do Your Concrete Work

You may not have time for it then. This winter, when you have more leisure, you can make a number of needed improvements on the farm by utilizing your spare time in building concrete floors, foundations, blocks, posts, etc. Cold weather need not interfere; our free book

"Concreting In Cold Weather"

Rural Edition

tells just how to go about such work, and what precautions to observe. By following directions carefully and using

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you can secure results as satisfactory as at any other time of the year. Don't fail to send for this book and any others on concrete construction which you think will be of use to you. They are furnished free.

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BREEDSVILLE, MICH.

Have for sale fine bulls out of cows with high official butter and milk records.

PRICES \$100 to \$200, all grandsons of King Segis, King of the Pontiacs and DeKol 2nd, Butter Boy 3rd.

HOG FEED CHEAP. ASK BARTLETT CO., JACKSON, MICH.

7 Collie Puppies, Heavily Coated, \$3 to \$5. PLYMOUTH KENNELS, R. 1, Plymouth, Mich.

BREEDERS' DIRECTORY.

CATTLE.

Aberdeen-Angus.

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

GUERNSEY—Reg. Tuberculin Tested. Windsor Farm, Watervliet, Mich. J. K. BLATCHFORD, Auditorium Tower, Chicago, Ill.

Guernsey Bull ready for service. Large, thrifty top notcher. Write today for description and price. G. A. Wigent, Watervliet, Mich.

Guernsey Bull Calves For Sale. One eligible to register and two high grades. W. D. KAHER, Corey, Michigan.

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

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

1 Holstein Bull.....\$900
1 Holstein Bull.....\$100
3 Holstein Bulls.....\$200
1 Holstein Bull.....\$250

Our sire is brother to 3 world record cows. The dams are choice with large A. R. O. records. Quality considered these are very cheap. LONG BEACH FARMS, Augusta, (Kalamazoo Co.) Mich.

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

For Sale—Reasonable prices, choice registered HOLSTEIN STEERS, ready for service. HATCH HERD, Ypsilanti, Mich.

Buy A World Record Holstein Bull NEXT TIME. We have 2 with 75% same blood of 3 world record cows. Great bargains at \$250 each. LONG BEACH FARMS, Augusta, (Kalamazoo Co.) Mich.

REG. HOLSTEIN BULL—Month old. Mostly white very pretty marked. Fine individual with excellent A. R. O. backing. \$50 delivered. Cheap at \$100. Write for pedigree and photo. Hobart W. Fay, Mason, Mich.

"Top-Notch" Holsteins.

Choice bull calves from 6 to 10 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices. McPHERSON FARMS CO., Howell, Michigan.

Registered Holstein Cow 8 years old, fresh, with bull calf, by one of the best bulls in Michigan. Mostly white, very large and attractive, excellent breeding. Write for pedigree. J. E. ABRAMS, Lawrence, Michigan.

HOLSTEIN BULLS ready for service. Bred, built, and priced right. Write or better. come and see. E. R. CORNELL, Howell, Michigan.

Bull Ready For Service.

A grand son of Pietertje Hengervelds Count DeKol, and out of Bertha Josephine Nudine. This is an almost faultless individual. Guaranteed right in every particular, and "dirt" cheap to a quick buyer. Also 7 good cows, one fresh—the others yet to freshen. The above would make a fine herd for some one. \$1950 will buy the bunch. L. E. CONNELL, Fayette, Ohio.

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

JERSEYS—Bulls calves bred for production. 2-year-old record 8610 lbs. of milk. 513 lbs. butter in 11 months. Sire's dam's record 10550 lbs. of milk, 604 lbs. butter in one year. WATERMAN & WATERMAN, Ann Arbor, Mich.

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

FOR SALE—Jersey Bull Calf Dam's 2-year-old record 8610 lbs. of milk. 513 lbs. butter in 11 months. Sire's dam's record 10550 lbs. of milk, 604 lbs. butter in one year. WATERMAN & WATERMAN, Ann Arbor, Mich.

FOR SALE—Jersey Bull calf 6 months old. Registered. Name Petoskey Chief No. 115307. Solid Color, black switch and tongue. He took first prize at the Emmet Co. Fair. Wm. E. Blanchard, Epsilon, Mich.

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

9 Shorthorns—Bulls from 8 to 12 months old. Best of breeding. Write for pedigrees. W. W. KNAPP, Howell, Mich.

3 Choice Shorthorn Bulls For Sale. 7 to 9 mos. old. Bates bred. Registered. Call or write to J. E. TANSWELL, Maple Ridge Farm, Mason, Mich.

Shorthorns—A few bulls from 6 to 9 mos., sired by a grandson of Whitehall Sultan, also choice females. Frank Rohnabacher, R. F. D. 2, Laingsburg, Mich.

DAIRY BRED SHORTHORNS—Bates bred bull 7-mo. old for sale. Price \$100. J. B. HUMMEL, Mason, Michigan.

FOR SALE—6 Shorthorn Bulls, 7 to 12 mos., sired by grandson of Whitehall Sultan, also choice females. W. B. McQuillan, Howell or Chilson, Mich.

HOGS.

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

Berkshire Boar—of spring farrowing with the best of breeding for sale. A. A. PATULLO, R. No. 1, Deckerville, Mich.

Beautiful Young BERKSHIRE SOW sired by best son of a daughter of the World's Champion Premier Longfellow. Price \$50, worth \$100. Pigs either sex. \$15 each. C. D. WOODBURY, Lansing, Mich.

Chester Whites—Spring and summer pigs, write us your wants. Price and quality right. Meadow View Stock Farm, R. F. D. No. 5, Holland, Mich.

O. I. C.—BIG GROWTHY TYPE. Last spring stock, either sex, pairs not akin. Very good stock. Scott No. 1 head of herd. Farm ¼ mile west of depot. OTTO B. SCHULZE, Nashville, Mich.

O. I. C.—MARCH and APRIL PIGS, the long growthy kind, with plenty of ham. Satisfaction guaranteed. A. NEWMAN, R. 1, Marlette, Mich.

O. I. C.'s—Taking Orders for Sept. Pigs, pairs and trios. FRED NICKEL, R. No. 1, Monroe, Michigan.

O. I. C. SWINE—Bred gilts all sold. have 2 No. of Spring pigs on hand. Will book orders for Sept. pigs, get my price on pairs and trios not akin. A. J. GORDON, R. No. 2, Dorrr, Mich.

O. I. C. SPRING BOARS and Fal Pigs and Red Polled Cattle. JOHN BERNER & SON, Grand Ledge, Mich.

Duroc Jersey Hogs—Have a few bred gilts, and spring boars, prize-winning strain. W. C. TAYLOR, Milan, Mich.

FOR SALE One Registered Duroc Sow and eleven fine pigs. F. A. LAMB & SON, Cassopolis, Michigan.

Duroc Jersey Boars For Sale, of the large growthy type, also 2 Reg. Percheron allions 1-yr.-old. M. A. BRAY, Okemos, Mich.

Duroc Jerseys—20 Spring Boars Ready to Ship. CAREY U. EDMONDS, Hastings, Michigan.

Durocs—25 High Class Spring Boars. Excellent quality and Breeding. Write or come and see. J. O. BARNEY, Coldwater, Mich.

Duroc-Jerseys—Spring boars from prize-winning strains. Sows all ages. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

BIG TYPE DUROCS—March and April Boars, ready for service. Pairs not akin. Also Shropshire Rams for sale. F. J. DRODT, R. No. 1, Monroe, Mich.

Duroc Jerseys For Sale—Three fall boars, also spring pigs, either sex; of finest breeding and individual quality. John McNicoll, Station A, R. 4, Bay City, Mich.

Poland Chinas and Single Comb White Leghorns. B. M. WING & SON, Sheridan, Michigan.

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

Choice Lot of Spring Pigs—Either sex. L. W. BARNES & SON, Byron, Shiawassee Co., Mich.

LARGE STYLED POLAND CHINAS—Spring and summer pigs. Also Oxford bucks and buck lambs at close prices. ROBERT NEVE, Pierson, Mich.

Butler's Big Bone Prolific Poland Chinas Big boars ready for service, weigh up to 250 lbs. not fat, from big prolific sows that not only farrow big litters but raise them. Write for what you want. J. C. BUTLER, Portland, Michigan.

Poland China

Spring Boars and Sows

of size, bone and quality. I ship c. o. d. Write me at once.

WM. WAFFLE, Coldwater, Mich.

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

LARGE TYPE P. C. FALL PIGS all sold. Have the greatest bunch of spring pigs I ever raised. Eight sows farrowed 86. Come or write. Expenses paid if not satisfied. Free livery from Parma. W. E. Livingston, Parma, Mich.

YORKSHIRE Swine—We have some nice spring pigs now ready for sale. Write for description and prices. OSTRANDER BROS., Morley, Mich.

350 BIG TYPE MULE FOOT HOGS—All ages for sale. Prolific and hardy. Best bred for Michigan. Also Ponies. J. DUNLAP, Box M, Williamsport, Ohio.

YORKSHIRE SWINE—Young boars ready for service. Also spring farrowed gilts and Aug. farrowed pigs for sale. Pairs not akin. GEO. S. McMULLEN, Grand Ledge, Mich.

Large Yorkshires—Pigs farrowed in August from prize winning stock for sale. JONES & LUTZ, Oak Grove, Michigan.

IMPROVED LARGE YORKSHIRES

Sows and gilts bred for September and October farrow. Service boars. Pigs all ages. Breeding and prices upon application.

W. C. COOK, R. 42, Ada, Michigan.

Lillie Farmstead YORKSHIRES

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

(Breeder's Directory continued on page 327.)

Feeding Ducks For Market.

No domestic fowl will respond to good care more quickly than a half-grown Pekin duck. Plenty of feed, given at proper intervals, will fatten a Pekin duck or duckling, for market in from 10 to 15 days. Other breeds take a little longer time because they all eat less than the Pekins. I find that when Pekin ducks are fed as they should be through the laying season they are not hard to fatten after they stop laying, because they have to be well fed while laying. It is a well-known fact that a thin Pekin duck will lay very few eggs.

At this season the ducks, young and old alike, are losing a good many feathers, but I never pick ducks at this time of year. They fatten better when allowed to moult naturally.

When feeding for market I keep ducks yarded part of the time only. They would not need to be confined at all if no other poultry was near, but ducks require more food than chickens, and if chickens are allowed to feed with them, the chickens, as a rule, get most of the food. Ducks are very timid and when the chickens rush in they get frightened and leave. Then, too, young ducks should never be kept or fed in the same yard with the old birds because the latter are sometimes very abusive.

When feeding ducks for market I have found it an excellent plan to keep them yarded until a little after noon each day. They are fed all they will eat, morning, noon and night. Breakfast and dinner are given in the yards before they are turned out, and as their last meal is given after the chickens go to roost it does not matter whether it is placed inside the yard fence or not.

Broad boards take the place of troughs, since they are easier to keep clean. After

ence, that ducks of all ages, i. e., newly hatched, partially or fully matured, will thrive much better upon ground grain.

When ducks are being fattened for market I use skim-milk, or buttermilk, to moisten the ground grain. As a rule, I use equal parts of bran, corn meal and middlings moistened with milk. Once a day there is added a little charcoal (about a tablespoonful for each gallon of feed) finely pulverized, and a half teaspoonful of salt. Then to the above mixture is added a quantity of either raw or cooked vegetables. Raw cabbage, chopped, is always greatly relished. When boiled (mashed) potatoes are used, either the middlings or corn meal is omitted, usually the former.

Ducks must have plenty of clean water to drink at all times, and especially while feeding, as they drink and rinse their beaks often.

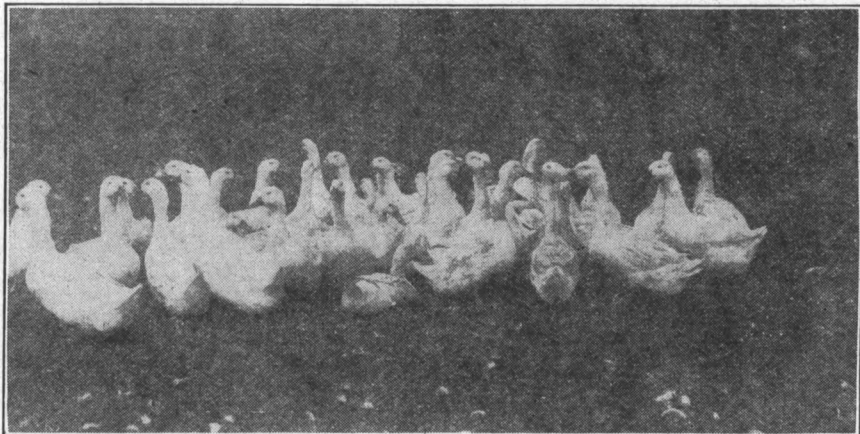
Ohio.

ANNA W. GALLIGHER.

KEEP WATER FROM SPREADING DISEASE.

Drinking water in poultry houses is one cause of the rapid spread of contagious diseases, such as roup. An affected hen when she places her beak in the water to get a drink, contaminates all the water. Then, when healthy hens drink from this water supply they become exposed to whatever disease the sick hen has. Thus, when one fowl contracts a contagious disease it generally is but a comparatively short time until there is a general outbreak of the affection, unless precautions are taken.

While the best method of treating a sick fowl is to cut off its head and either burn its body or bury it so deeply that no dog can dig it up, the mischief is



A Well-grown Flock of Pekins Ready for Market Feeding.

the noon meal the ducks are allowed to forage until evening. They get some exercise and do much better than when I kept them confined in yards throughout the fattening period.

Of course, ducks need shelter, even when the weather is not very cold. On stormy nights they must not be forced to sit in the yards or where it is cold or damp. They are liable to take roup, and are almost sure to have cramps or some such ailment. It is sometimes called rheumatism, but, whatever it is, it cannot be treated with any success when ducks have become badly affected. However, it can be easily prevented by driving the ducks into their houses, after the evening feed has been given, and closing the doors so that they will be forced to sleep where it is dry, instead of on cold, damp ground. During summer, when the ground is warm and dry, I have found it a good plan to let all the ducks, except the very smallest ones, stay out in the yards. It saves the work required to keep houses clean.

At this time of year, however, and all through the winter months, ducks need comfortable houses with plenty of bedding. Straw or litter should be used for this purpose, and sawdust should never be used, because the ducks are liable to eat it, this being apt to occur when they are not provided with plenty of sand and other grit. A Pekin duck requires some grit with each and every meal. It must be near at hand, else they will "shovel" up almost anything in reach. We keep plenty of clean, coarse sand, oyster shell and coal cinders close to the feed board in each yard. Where sand is not to be had, commercial chick grit might be used as a substitute. It is not advisable to add grit of any kind to their feed.

Whole grain is not the best feed for ducks. I have learned, by long experi-

ence, that ducks of all ages, i. e., newly hatched, partially or fully matured, will thrive much better upon ground grain. This makes it advisable to be on guard all the time, and it should be understood that it is a simple matter to treat the drinking water so as to prevent its being a medium for spreading disease.

The addition of a small quantity of permanganate of potash will so disinfect it that any disease-producing germs left there by affected fowls will do no harm. The drug is not a remedy nor a treatment, simply a preventative. While it gives the water a reddish color, there is no taste to it which would keep the fowls from drinking the water. Only a small quantity is needed—simply enough to color the water.

Eradicating a contagious disease from a poultry flock is a tedious and costly process. The best way is to prevent the outbreak in the first place by keeping the buildings clean and sanitary. When a fowl gets sick, if it is not killed it should be isolated and the remainder of the flock closely watched for signs of further trouble.

Penn.

L. J. HAYNES.

CULL HENS DURING THE MOULT.

A good time to cull the hens and dispose of those which have passed the age of usefulness, is while they are moulting. A hen lacking in vigor, will show it very plainly while growing a new coat of feathers. The old hens can be detected very easily during the moult. Young hens usually go through the moult more quickly, and grow a coat of new feathers more evenly than will old hens. All hens that are backward in moulting, are bare of feathers long after their companions have grown a new coat, should be sent to the butcher.

Indiana.

T. Z. RICHY.

SHERWIN-WILLIAMS PAINTS & VARNISHES



Fight depreciation with good paint. Depreciation is the certain follower of neglect. You know what sun and storm, unchecked, will do to your buildings. Fight them with the paint of proven merit for all outside work.

SWP

(Sherwin-Williams Paints, Prepared)

Every ingredient is the best for its purpose. We mine our own lead and zinc; we make our own linseed oil. Our perfect machinery does the grinding and mixing with uniform precision. SWP covers readily—it lasts.

There is a specially made Sherwin-Williams product for every surface about your farm buildings, and your house. Whether it's to brighten up a chair or table or to ward off rust and decay from your machinery or tools, our booklet, "Paints and Varnishes for the Farm," tells you the right product and the right way to use it. We mail it free.

The Sherwin-Williams Company
669 Canal Road, Cleveland, O.



POULTRY.

Single Comb White Leghorn Yearling Hens and Cockerels for sale. Produce more eggs by adding new blood. Let us know your wants. D. Woodward & Son, Clinton, Mich.

Barred Rock Cockerels and Hens, Bargain Prices W. C. COFFMAN, R. No. 6, Benton Harbor, Mich.

PRIZE WINNING Barred Rocks, R. I. Reds, High quality, low prices. 500 Indian Runner and Pekin ducks, \$6 per trio, circular free. EMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.

COLUMBIA Wyandottes, Winners at Chicago, Grand Rapids, South Bend and St. Joseph. Stock and eggs. RICHARD SAWYER, Benton Harbor, Michigan.

If You Want Eggs Next Winter buy Pine Crest White ORPINGTON Pullets, the perfect egg machines. Write for prices. Mrs. Willis Hough, Pine Crest Farm, Royal Oak, Mich.

SILVER LACED, golden and white Wyandottes. Eggs for hatching at reasonable prices; send for circular. Browning's Wyandotte Farm, R. 30, Portland, Mich.

LILLIE FARMSTEAD POULTRY

B. P. Rocks, R. I. Reds, and S. C. W. Leghorn eggs for sale. 15 for \$1.25; 50 for \$2.50. COLON C. LILLIE, Coopersville, Mich.

WHITE LEGHORN COCKERELS—Wyckoff Strain. Maple City Poultry Plant, Box O., Charlotte, Mich.

White Wyandottes—Noted for size, vigor and egg production. 1913 circular ready in February. A. FRANKLIN SMITH, Ann Arbor, Mich.

DOGS.

HOUNDS FOR HUNTING Fox, Coon, Skunk and Rabbits. Send 2c stamp. W. E. LECKY, Holmesville, Ohio.

FOX AND WOLF HOUNDS

of the best English strains in America; 40 years experience in breeding these fine hounds for my own sport. I now offer them for sale. Send stamp for Catalogue. T. B. HUDSPETH, Sibley, Jackson Co., Mo.

This Man Died at 38

And left a wife and three children. He owned an eighty-acre farm, on which he owed \$1,500. He had a few hundred dollars in cash, some stock, implements, etc., but his family would have been in an embarrassing position without his insurance.

His Wife Received \$3,000

which took care of the funeral expenses, paid off the debt on the farm and kept things running until the next crop came in.

This is a company organized by farmers for farmers—to provide money if you need it in your old age, and to take care of your family, if you are called away.

Full information, with useful souvenir, will be sent free if you tell us the date of your birth.

FARMERS NATIONAL LIFE INSURANCE COMPANY OF AMERICA

John M. Stahl
President

20 East Jackson Boulevard
CHICAGO, ILL.

Edw. W. Wickey
Secretary

Protection on the Farm

When writing advertisers please mention The Michigan Farmer,

Grange.

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

THE OCTOBER PROGRAMS.

Suggestions for Second Meeting.

Song.
Reports of committees appointed at last meeting to visit schools.
Duet.
A "yarn."
"Methods of a successful farmer whom I know," by three men.
Reading, "Better Babies."
"What are correct measurements for a child one year old?"
Halloween stunts and refreshments in charge of "Surprise committee."
Music secured for this program by some member whom lecturer cannot get to "talk in Grange."

ONE OF THE OCTOBER TOPICS.

A very important question has been suggested for discussion in all our Granges in October, but by an unfortunate oversight in making up the Lecturer's Bulletin, a part of the subject was omitted and the error has just been discovered. The entire subject to which I refer should read as follows: "A sold rye for 80c a bushel to the village merchant, who in turn sold it to B., who lives on a farm less than two miles from A., for \$1.50 per bu. What remedy would you suggest?"

This question was set in motion by the National Grange Monthly and is said to be based on an actual occurrence. All the more urgent that it be given attention. It is the hope that farmers all over the state will discuss this matter, not alone in Grange meetings, but wherever two or three are met and whether they are members of the Grange or not. It is one phase of one of the great American problems today and represents that part which is nearest to producers and which they can most easily begin to help remedy through their organizations.

If every individual, whether a producer or a consumer, would set himself to thinking out a plan for better distribution in his own immediate vicinity, and would bring the subject up for discussion with others, surely more sane methods than those now in vogue would be evolved. Produce is now sent hither and thither, like a shuttle in a loom, often going long distances only to return to be used near the place where it grew. This is not a wasteful system so much as it is a total want of system. Will the Grange help work out a true, efficient system, as it has helped work out a postal savings bank system, a parcel post system and many other important improvements through its insistence that these things could and should be done?

Discussion of the above proposed question has been going on in some sections for some time. Many remedies, or partial remedies, have been proposed, such as advertising in the local papers of one's community; the use of a bulletin board at one's front gate, and also a "For Sale" list posted at each Grange meeting; and the appointment of a community salesman who shall be given a stated commission for his time in telephoning and writing to arrange sales of exchanges.

It will be an excellent plan to suggest one such proposal as these mentioned here, if for no better reason than to see how many holes the other fellow will shoot into it. It will create thought, discussion and, perhaps, action. What will the Grange do about it?

JENNIE BUELL.

Charlevoix Subordinates are steadily gaining in membership. Iron-ton, Wilson and Marion Center Granges each reporting applications for membership or intimation of candidates at the September meetings. Marion Center captured second premium on grain and canned fruit at the recent county fair, while members of Wilson, at their last meeting, voted to add to the furnishings of their hall and to lease the hall for religious services on Sundays.

COMING EVENTS.

Pomona Meetings.

Clinton Co., at Maple Rapids, Friday, Oct. 17.
Wayne Co., with Belleville Grange, Saturday, Oct. 18.
Eaton Co., with Delta Mills Grange, Saturday, Oct. 18. Prof. French, of M. A. C., will talk on "Agriculture in Rural Schools."
Western (Ottawa Co.) with Conklin Grange, Friday and Saturday, Oct. 17 and 18. L. C. Root, state speaker.

Farmers' Clubs

Associational Motto:

The skillful hand, with cultured mind, is the farmer's most valuable asset.

CLUB DISCUSSIONS.

The Cerecco Farmers' Club, of Calhoun county, held their annual picnic in the grove of Mrs. Frank Lindt, Sept. 3, a beautiful but very warm day. Not many members were present. The bountiful picnic dinner was served at noon on tables erected in the woods. There was no program, but the time was very pleasantly spent roaming through the grove, which is on the banks of the Kalamazoo river and near an old stone quarry which is beautiful. Adjourned to meet with Mrs. E. Wilcox. The Club was entertained by Mr. and Mrs. Edward Wilcox, Sept. 24. The rooms were well filled and the dinner extremely good. The president and vice-president being absent, P. M. King presided. After singing America a fervent prayer was offered by Mrs. George Reese in which the sick were remembered. A vocal duet by Mrs. Hall and Mrs. Vondergrif was much enjoyed, also a reading by Mrs. Shultz and one by Mary Hough. Mrs. King sang "Love's Old Sweet Song," and Mr. Brown, of the Battle Creek Enquirer, gave a talk on preserving old relics, which was very good. A vote of thanks was given him, also Mrs. Smidt. Mr. Ransom Markham, an old member, also treasurer, who is very ill, was voted a flower offering. Adjourned to meet October 29 with Mrs. Meade.—Mrs. P. M. King, Cor. Sec.

Hold Last Half-day Meeting of Season.

—After having our summer vacation of one month the Indianfields Farmers' Club met at the pleasant home of Mr. and Mrs. David Vanburen. All were pleasantly welcomed by the host and hostess. One hour was spent in visiting, viewing stock and discussing farm work. As the time arrived for our meeting the president, raising the gavel, warned us that the hour had arrived for our Club work. The program was as follows: Singing by the Club. Invocation by Rev. T. W. Denman. The subject, "Shall we invest our surplus money in banks, lands, or home comforts?" was ably discussed by Mrs. Sadie Auger and several members took part, which proved quite a study and many fine points were suggested. After a solo by Mrs. Moore, another question was, "Will future generations commend or condemn the business methods of Rockefeller and Morgan?" Vocal solo by Mrs. Castle Taggett. The question box was filled to overflowing. Meeting closed by Club song. This closed the last half-day meeting of the year. An elaborate six o'clock dinner was served by Mrs. Castle Taggett and her assistants.—Mrs. Margaret Arnold, Cor. Sec.

A Varied and Interesting Program.—The Salem Farmers' Club held its September meeting at the pleasant home of Mr. and Mrs. Daniel Smith. Between 50 and 60 guests and members of the Club gathered and enjoyed the day and the bountiful dinner, after which the Club was called to order by the president and the following program rendered: Music by Club; secretary's report; a reading by Mrs. Van Vorse on the subject, "How to lighten the work of the wife and mother in the farm home." Mr. L. D. Lovewell of South Lyon, then gave a very interesting account of his recent trip to Los Angeles, Cal. He told us much about the west, its industries, system of irrigation, beautiful flowers, orange groves, etc., but concluded a man could do just as well working hard in Michigan as there. Mrs. Chas. Ross read a paper on "Between Ourselves," which was an appreciation of woman's work. A recitation was given by Daniel Smith, entitled, "The Lessons my Father Taught," which was much enjoyed. The Club then discussed the new milk law. L. D. Lovewell, Charles Ross and G. H. Thompson taking part. Club adjourned with music to meet in October with Mr. and Mrs. Irving Johnson.—H. C. Thompson, Reporter.

Home Coming.—At a recent meeting of the Ingham County Farmers' Club, this topic was opened by Mrs. R. J. Robb, who spoke chiefly upon vegetables, giving the necessity of thorough boiling to destroy all germs of mold, yeast and bacteria. Heating a certain length of time was all that was necessary, and some boiled the vegetables an hour each day, instead of three hours at once, with equal results. In referring to various canning compounds, she asked Mr. Palen to describe the most noted one, or the most widely used, Mrs. Price's canning compound. He said at the time that he analyzed this it was no compound at all, simply 97 per cent boric acid with three per cent waste paper, dirt, etc. Boric acid was an excellent eye wash but no good as a preservative, in fact, injurious to children. In the discussion it was learned that salt has since been added to make it come under the law as a compound. Mrs. Diamond gave her method of canning meats. Simply pack the fresh beef in glass cans with a generous piece of suet on top, put on your cover and rubber, screwing tightly and boil in your boiler three to four hours, set off and cool, and in eight or ten months, or when needed, it was simply delicious and certainly thoroughly cooked. Mrs. Wilson had used the same method with pork. Mrs. Chapin had the subject of fruits but confined her remarks mostly to the cans, exhibiting a glass cover that fits the Mason jar and far more sanitary than the metal cover.

CROP AND MARKET NOTES.

(Continued from page 326).

Missouri.

Cass Co., Sept. 29.—The long and hard drought was broken about Sept. 8. It has rained every few days since then. The corn crop was ruined and the best fields yield only about 15 bushels per acre. Almost all corn is cut and in the shock. Feed is very scarce. Some fodder spoiled by the rain. Grass is growing fast and there will be considerable hog pasture. Ground is in fine condition for fall wheat. Wheat 82c; corn 74c; oats 41c; corn has dropped about 6c in the last ten days. Cattle and hog supply is limited. Hogs \$8.25@8.50; cattle \$6.75.

Barton Co., Sept. 27.—Have had a dry summer, only one good rain since March; a few local showers. Corn on upland almost a failure, on the bottoms fair. Hay crop cut down half, some second crop being put up now. Large acreage of wheat going out this fall. Ground working fine. Nearly all fodder has been cut up and many are putting wheat in corn ground. An effort is being made to hold stock cattle. Scarcely any cattle or hogs being fed for market.

Mississippi Co., Sept. 29.—This county has had a rainy spell, after long drouth. The wheat was fairly good, averaging about 18 to 20 bu. per acre. Corn not so good on account of the drouth. Will make about 25 bu. per acre. No hog cholera at this time. Old corn 75c. The cowpeas are good for season. Butter 25c.

McDonald Co., Sept. 29.—This county is having damp, rainy weather after an exceedingly dry summer. Wheat did well. It went from 15 to 20 bu. per acre. Strawberries did well. One little town shipped about 85 cars at \$1.50@2 per crate. Corn made very little grain but made much good fodder. A few silos were built this fall. Cowpeas made very little seed but lots of fine hay. Big crop of peaches, but few apples. Corn 60c; wheat 80c; eggs 17@18c; dairy butter 18@30c; potatoes \$1.40; turkeys 10@14c; ducks 8c; hens 20c; springs 12½c; roosters 5c.

Vernon Co., Oct. 1.—Most of the farmers are busy putting in their wheat. Quite a large acreage will be sown this fall. Ground is in fine shape since the rains. Corn is a failure here this year. Not many hogs or cattle in this part of the state. Apples almost a failure here; only those who have sprayed and cared for their orchards have apples. Others have had apples on, but all fell off. Peaches are quite plentiful. The early potatoes were fair but weather was too hot and dry for the later plantings. The grass is starting since the fall rains have come.

Nodaway Co., Oct. 1.—Drouth has been broken. Plenty of rain now; much small grain is being sown. Corn is fair; best small grain ever known. Pastures are coming out good since the fall rains. Most everybody feeding the cattle. Apple crop only fair; other fruit fine. Stock generally healthy, but some sickness among hogs. Potatoes are a poor crop. Many silos are being filled. Markets: Corn 85c; wheat 80c; oats 40c; hay \$10; hogs 7c; cattle 5@6c; chickens 14c; eggs 15; butter 20c.

Kansas.

Finney Co., Sept. 30.—Three good rains and several showers this month have put the ground in fine condition for wheat sowing. Barley, wheat and corn fields are growing up volunteer. Stock looks well; water is always plentiful as our wells are drilled and never go dry. Most of the farmers have stacked their feed. Some are hauling hay. There are a few fields of milo maize to be headed. Cattle selling high; spring calves \$25 per head.

Cowley Co., Sept. 30.—Recent rains have helped pastures and alfalfa and made conditions favorable for fall seedling. An unusually large acreage will be put in wheat and rye for pasture as feed is scarce. A good crop of alfalfa seed has been harvested and is selling at \$4 per bu. Kaffir in the best fields may yield 20 bu.

Nebraska.

Dawson Co., Oct. 1.—The first frost of the season came the 25th of September. We have had light showers but not enough to put the ground in condition for winter wheat. What is being sown is placed on corn ground. Potato crop is very light. Prices: Alfalfa \$12; prairie hay \$10; corn 75c; wheat 70c; oats 50c; butter-fat 25c; potatoes \$1.25.

Platte Co., Sept. 29.—This month started without breaking the hot spell, which lasted to the 10th. Since we have had two inches of rain. Wheat all sown; first up looking good; corn will make 20 to 30 bu; wheat made 20 bu; oats 25 bu. Pasture poor all summer. A number of silos are being built. Wheat 72c; corn 65c; oats 35c; cattle 3@5c; hogs \$7.50.

Saunders Co., Sept. 30.—Two good rains one on the 16th of the month and one on the 28th so the ground is in good shape for fall plowing, and seeding for fall wheat. Farmers are very busy seeding; there will be a fair crop of corn, wheat and oats were good crops. Pastures are much better since the rains.

Dodge Co., Sept. 30.—Good rains since the 16th; weather much cooler. There will be lots of fall wheat. Corn will make from 30 to 40 bushels. Big fair held at Fremont 8th to 13th; big oil engines held a plowing demonstration here, 16 different makes all plowing 60-acre field in three hours.

Delta Co., Oct. 4.—Threshing just about done; oats a good crop; wheat not so good, did not fill; Speltz went 30 bu. to the acre; rye was good but went down before it was cut. Pasture is good; plenty of rain. Lots of plowing being done. Potatoes a good crop but rotting badly, selling for 50@60c; oats 65c; wheat 90c; butter 30@32c; eggs 28c; spring chickens 16c.



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