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Horse Breeding for the General Farmer.

EXCEPT in some of the farther west states, horse breeding has unquestionably retrograded to low ebb during the past decade; to such a low ebb, in fact, that many localities which a few years ago furnished many horses for the city markets in the east now do not raise horses in sufficient numbers to supply their own needs. In the central and eastern states only a very small part of the horses needed on the farms are raised. In New York last year over 70,000 horses were shipped in from the west and sold. Ohio, which used to send thousands of horses to fill the demand of the eastern cities now raises few more than are needed at home. The same may be said of Michigan.

In spite of the large number of auto trucks in use in our large cities, in only three or four of them are there fewer horses in use than there were ten years ago and it is the high price of good horses that is largely responsible for the decrease in the number of horses used in cities showing such decrease.

No one with common sense will feel inclined to belittle the auto truck as a part of economic life either in the city or in the country, but neither will common sense persons overlook the fact that, as long as conditions remain similar to those now governing farm work and city transportation, the horse will remain absolutely essential in both spheres of activity. No argument need be advanced to prove the correctness of this statement. The prices which are paid daily for horses in the sale marts are more potent than all the arguments that could be advanced.

In view of these conditions does it not seem strange that farmers not only decline to raise horses for the market, but that a large number of them—especially in the states east of Illinois—do not raise horses for their own use? A good pair of heavy work horses will cost anywhere from \$450 to \$600, and every spring hundreds of eastern farmers buy horses, paying prices between those amounts when, as a matter of fact, most of them ought to have a pair of young horses to sell every year or two in addition to supplying themselves with horses. In every state there are a number of large cities which require annually, a large number of horses and there is no reason why the farmers of those states should permit the thousands of dollars which are paid for those horses to go out of the state. If every farmer in Michigan or in Ohio or in New York, having proper facilities for raising a pair of colts each year would do so, they would retain, in their respective states, an immense amount of money that, under present conditions, goes into the pockets of breeders in distant states.

The objection so often heard, when the subject of raising horses is mentioned to farmers, that raising colts interferes with the usefulness of their mares just at the time in the spring

when work on the farm is most rushing, has no valid basis, for fall foals make just as good horses as those that come in the spring and they do not interfere with the spring's work in the least. Mares bred in October will have their foals in September. The colts may be weaned in March and the dams will be able to do their part of the spring work while the colts, when turned to grass in the spring, will make such rapid growth that when they are three years old no one will be able to tell whether they were spring or fall foals.

It is useless to attempt to raise horses to sell, however, unless the breeder means to raise such horses as the market demands. Occasionally

process to breed up to the draft type, but by using judgment in the selection of a sire he will find it possible. Extremely heavy sires should not be selected for the first cross, on a small mare, but for the largest fillies of that cross a big sire may be used.

If, however, a farmer has some mares of the grade draft type, he may seek out the best heavy draft stallion available. Such a mating will bring the breeder foals that will find a ready sale, if well raised, and if the fillies are saved for breeding purposes and mated with judgment the owner will, when their produce becomes of selling age, be ready to take advantage of the brisk demand that promises to be in evidence for many years to

Above all, feed him liberally of the best grain and hay you have. Get him to eating grain when he is running with his dam and then when it comes time to wean him there will be no stoppage in his growth. If the pasture gets short in the summer help out with grain; it will be money well spent, for the quicker the colt gets his growth the earlier will a good price be realized for him.

And all this can be done just as well with a fall foal as with one that comes in the spring. A box stall for the dam and the foal can easily be provided, and in the yard, where they should be turned, at least a part of every pleasant day, there should be a creep provided into which the colts may go to get an extra feed, but which the mares cannot get into.

To one who has not tried to raise fall foals the growth colts will make under these conditions will be surprising. They will be big, strapping fellows in the spring, ready to make the most of the grass when they are turned out. Buyers will commence to nibble at colts of this type and raised under these conditions when they are three years old and those the breeder wishes to dispose of can be well sold at four years, if not sold before.

And what a comfortable feeling it is to the farmer who knows he has a five-hundred dollar pair of young horses to sell, compared with the one who finds he must go down into his pocket and dig up a like amount to replace the worn-out team, which is a condition that confronts every farmer at intervals.

New York.

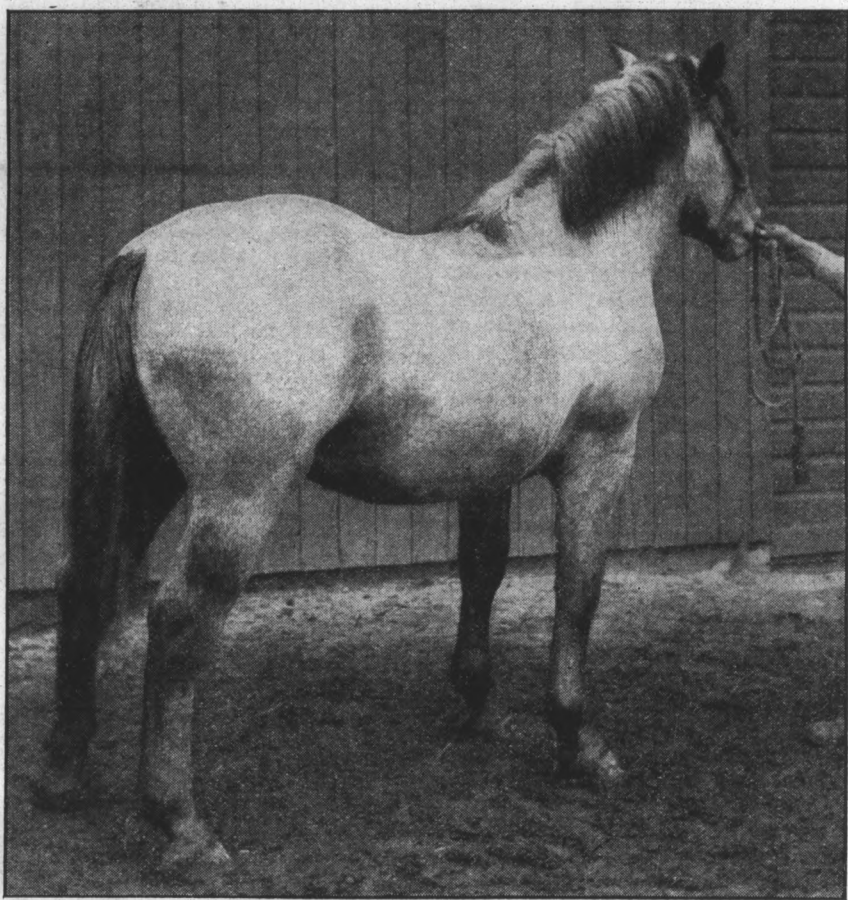
H. L. ALLEN.

WILL LIME BENEFIT THIS SOIL.

We have a farm of sand loam which will produce 100 bushels of corn and from 50 to 60 bushels of oats per acre, but produces poor crops of beans and wheat. We think the soil would be benefited by lime. Will you please give your opinion of the matter.

Shiawassee Co. YOUNG FARMER.

One cannot answer this question by yes or no. In fact, one must make an examination of the soil or he must know something about other crops besides wheat and corn, about crops that do better on a neutral or an alkaline soil than on an acid soil. A true test of the soil so far as acidity is concerned is the growing of common red clover or alfalfa. If clover doesn't do well, or if alfalfa doesn't do well, it is a pretty good indication that the soil is acid and needs lime. That land will produce 100 bushels of corn and 50 to 60 bushels of oats, and would make a failure on the wheat and beans, does not prove conclusively that lime is all that is lacking. One season might be favorable for corn and oats and the next may be unfavorable for the wheat and beans. Land that will raise 50 bushels of oats to the acre ought to raise 25 or 30 bushels of wheat. Land that will raise 100 bushels of corn to the acre ought to raise a good crop of beans, but there is a great deal of difference in sea-



Percheron Colt Wgh. 1360 lbs. at 14 mos., Bred by M. A. Bray, Ingham Co.

there may be a farmer who has the natural liking for the light harness horse or the saddle horse, and the faculty to train and prepare such horses for use, that will be able to successfully breed and sell such horses but, as a rule, breeding those kinds would better be left to the specialist. Right now the big demand of the horse market is for horses of draft type. There is a fair demand for horses of the express class, horses weighing from 1200 to 1350 pounds; also for the brewery types which calls for horses weighing around 1600 pounds. But the real big prices are realized for the heavy draft type in which the weight runs from 1700 to 1900 pounds, while those weighing a ton or more also find quick buyers.

The average farmer possessing small mares will find it a rather slow

come, for horses of the heavy draft type.

No farmer breeder should fail to remember that the difference between the value of a colt well raised and one poorly raised, means a profit or a loss. The colt that never stops growing from the time he is foaled until he reaches maturity is the one that sells at an early age and for a big price. It never pays to stint the colt on his rations as long as he is given plenty of opportunity to take exercise.

Give him shelter from the storms; keep him free from vermin; look after his feet and see that they are not allowed to grow unevenly and thus cause the bones of his legs to grow in unnatural shape; halter-break him when he is a few days old and continue to handle him as often as possible.

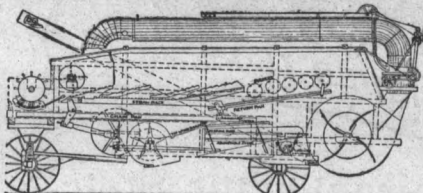
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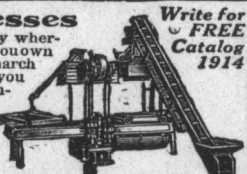
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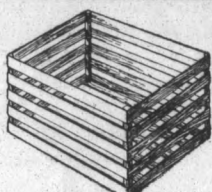
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sons. If we have a poor season we generally get proportionate crops of almost any kind and the farmer cannot very well overcome that entirely. It would be well to apply the litmus paper test to this soil and find out whether it has a reaction or not. If the blue litmus paper after being buried in the moist soil for half an hour shows any tinge of pink, that shows that you have a reaction there and to grow beans and clover you certainly ought to use lime. Take a sample of the soil and mix a little rain water with it, just so it is a nice thick solution, and then pour into this some hydrochloric acid. If it bubbles well that indicates there is plenty of lime. To find out whether your land will be benefited by lime or not, make some inexpensive tests. If you can't get agricultural lime, go to your home dealer who keeps lime to sell for building purposes in sacks in the form of hydrated lime. This is the very best form of lime to use. It costs a little bit more but not very much. You can buy a few sacks of this lime and take it home and distribute it evenly on a square rod of soil in different fields on different crops. Stake off a square rod in the center of the field and apply the lime there and work it into the soil and sow your crop and notice whether you get beneficial results or not. If you do, there is only one thing to do. If you don't get any beneficial results, then there is no particular use of your spending your time and your money for lime. A few dollars and a very little time will tell you more about whether your soil needs lime or not than you can get in any other way. COLON C. LILLIE.

IMPORTANCE OF HUMUS IN SOIL FERTILITY.

The subject of soil fertility has received a great deal of attention, and it is altogether proper that it should. We hear it said that crop rotation is essential in keeping the soil in good condition, but this depends entirely upon what kind of a rotation is followed. Some rotations are rotated off the farm. For example: A farmer sows wheat in the fall and pastures it until late in the winter; the next he harvests the crop and sells both the grain and straw. He has sown clover in the wheat, so he pastures it the balance of the year, and the following season he cuts two crops of clover hay, and the field is again pastured. The third year he plows under the remains of the clover and plants corn, raises a fair crop; pastures the stalks, and before the next plowing season he perhaps burns the stalks that are left to get them out of the way. This is rotation off of the farm, and is a too common practice in some sections now days. Under such management what returns has the farm had? Absolutely none, and on the contrary, the soil has been compelled to give up fertility and has received nothing in return to take its place.

I knew of a farmer who, a few years ago had 40 acres of big English clover to turn under for a corn crop. Finding it difficult to turn under he set fire to it and burned the entire field. It was a case of rotating off of the farm. This crop of clover would have added a great deal of fertility to the soil if it had been turned under properly, but as it was, the owner lost 90 per cent of its value as fertilizing matter and retained but 10 per cent in the ashes.

Another man, a neighbor of his, had a piece of unproductive sandy soil. He sowed it in vetch and when the crop was about three, or perhaps four feet high, he turned it under with a three-horse plow and chain. The next spring he planted this field in corn and had a yield of 75 bushels to the acre, while previously it had never given over 25 to 30 bushels. This is an example of the right kind of rotation. The vetch in the soil acted as

a sort of sponge to hold the moisture that otherwise would run off through the sandy soil; it added nitrogen for the plants that were to follow, and it allowed air circulation.

We saw another neighbor turning under another field covered with horse weeds so tall that they nearly hid the team from sight. He used three horses and had a heavy drag chain to turn under the weeds. He followed with a heavy roller which compacted the plowed soil and later he sowed wheat. The crop the following year was so large it was a marvel to everyone who saw it.

Most of our soils need more vegetable matter or humus. Without it fertilizers will not be as effective as they would be otherwise. Humus acts as a sponge in the soil, holding moisture for the use of the plants and permitting the air to enter the soil. Moisture in the soil has two important functions; first, it is one of the essentials of plant growth, and second, all plant food is taken up by the plant in the form of liquid. It must first be soluble and be dissolved in water. Air is necessary in the development of plant life, for the plant must breathe. Air in the soil makes it warm and loose, which conditions are conducive to the best growth of the plants.

Let us for a moment contrast two fields equal in every respect. One is cropped for say five years, and no pains whatever taken to restore it. What is its condition at the end of this period of years? A wornout, unproductive field. The other is allowed to go untilled during the six years; weeds at first, then grass, occupy it. These cover the field over and decay year after year, and at the end of the six years it has gained vast stores of humus, which if turned under make the field very productive. How, then, is the wornout field to be restored to productiveness? By rotation, deep tillage and drainage. This soil has lost its vitality because of the loss of humus.

By proper rotation the humus can be restored, and by deep tillage, drainage and the use of legumes, nitrogen can be had in any quantity needed. Over every acre of ground the world over there is enough nitrogen stored in the air to produce large yields of corn for many thousands of years to come, and with legumes we can get the soil and the air to working together for the good of the plant. It is hard to over-drain old soils and all varieties of soils, even sandy soils, can be made more productive by drainage and tillage. The former to aid in giving the nitrogen and the latter the humus as in the case of where the vetch was turned under.

Drainage has two chief objects: First, to carry off surplus water, and second, to supply undercurrents of air. Notice the corn or wheat that grows directly over the underground drain, and then compare it with that which grows some distance from the drain and you can easily see the advantage of the drain.

There are millions of acres of land throughout the country that are worn out. Even clover can not be grown on them successfully without using fertilizers to push it along. The first step in the renovation of such soils is the addition of humus.

Indiana. C. H. WHEATLEY.

FERTILIZING VALUE OF CINDERS.

Have cinders and value as a fertilizer? SUBSCRIBER.

Cinders would have no fertilizing value which would be commensurate with the cost of application. Their presence in quantity would also destroy the capillarity of the soil to some extent. Some benefit might be derived from the addition of such material to very hard clay spots, but good results could not be expected, in the writer's opinion, from the application to this kind of land.

Horticulture.

WARD ORCHARD NOTES.

Considering the reports we get from various places we feel very fortunate that the storms of last week, June 21-27, did not do us any damage. Our prospects at present are very good. The crop is going to be a very large one and seems to loom larger every day. Due to the very thorough spraying done, the fruit is very clean, although in places where it was impossible to do thorough work there is plenty of scab. This would indicate that unsprayed and poorly sprayed fruit will be quite scabby this year. Where the pre-blossoming spraying was done early there is more indication of scab than elsewhere, although even there the fruit is very clean.

Up until the present we have no indication of insect pests except occasionally the work of the green fruit worm and the presence of a little aphid with the rosy apple aphid predominating. The aphid seems to have increased during the cool weather we have recently had.

The Twig Blight.

The twig blight has made its appearance in some parts of the orchard. It appeared quite suddenly immediately after the hot spell early in June and has been spreading slowly since. New twigs are not becoming infected but those infected are slowly dying back. It seems that it spreads faster after rains than at other times. It is the worst on the few old trees we have around the buildings and is quite bad on some of the pears. Of course, on the pears it has spread much faster than on the apples. In the main orchard the Jonathan has it the worst and on them it is found on the twigs while, when found on the Wagners, it is usually on the year-old water sprouts which we have not had time to cut out. The disease is also more prevalent on trees where the soil is sandy or loamy, the trees in the clayey parts of the orchard being practically free from it.

We have some men cutting the blight out now. They cut about six inches below the last signs of it, carry the twigs out of the orchard and destroy them. Each man carries a sponge which is wet with a five per cent solution of carbolic acid. One wetting of the sponge will last for several hours. A can of the solution is kept in the orchard so that the men can wet their sponges as needed. The pruning shears are wiped with the sponge after each cut is made.

The Spraying Arrangement Satisfactory.

The second spraying after the blossoms has gone along very nicely. The spraying outfits have given us very little trouble and have put out on the average of 11 to 12 tanks a day. We are using the water hauling arrangement mentioned before, that is, the tractor hauling the thousand-gallon tank of water to the spray outfits in the orchard. It saves considerable time but has not worked out as well as we expected. While we can fill the spray rigs in four minutes and use but a short time in filling the large tank at the filling station, we find that the tractor has to wait in the orchard for some of the rigs to empty and then, before the tractor gets back from the filling station, the first outfit filled is often waiting. We feel now that if we had two 600-gallon tanks so that the tractor could keep busy hauling while the full tank could be left in the orchard ready for the spray rigs, we could increase the daily capacity of the three rigs to 15 tanks. We shall do this next year and will use the large tank in the filling station where we can well use a tank of larger capacity than we have now.

Our plans for cultivation have not

been a success. Due to the recent rains, and also due to the fact that we have had to use the tractor to help in spraying, we feel that we have to give up the fight against the sod and will discontinue further cultivation. It was apparent the last few weeks that the tractor disk was not making enough impression on the sod, especially in the heavier soils, to make it worth while. On account of the late start we got in spring, the sod got such a big start of us that we have not been able to catch up. We reluctantly give up the fight, and shall immediately get busy with the mowers. However, with the plentiful rains we have had, and due to the fact that the soil is naturally retentive of moisture we do not feel at all concerned about having plenty of moisture to mature the crop. In fact, because the orchard has usually made an abundant growth in the past we feel that our present plans will be beneficial to the orchard in that it will cause the wood to thoroughly mature before the season ends.

Girdled Trees Doing Well.

The girdled trees are doing fine. Even those which were girdled all the way around for a width of four inches are doing nicely. They have not, of course, made as large growth as the normal trees and in a few cases the foliage is slightly smaller, but on the whole they are all in a thrifty condition. The painting of pure white lead and raw linseed oil we gave them has done them untold good. Under the paint the wood is moist, which shows that the sap is working its way through. Some of the girdles were quite dry when they were painted. In some places the paint is puffed close to the edges of the girdle, or sometimes across it, connecting the upper and lower bark. The puffed or blistered places are full of sap. This indicates that the healing process is going on, and shows the value of the paint as a protection to the girdle.

INSECTS AND DISEASES OF TOMATOES.

The most troublesome insects are the Colorado potato-beetle, the flea-beetle and the tomato worm. On small patches, the two larger insects can be kept under control by hand-picking. On larger areas, a few applications of Bordeaux 4:4:50 and arsenate of lead, three pounds to 50 gallons, will keep all three insects under control. For the flea beetle, an application will often need to be made soon after the plants have been set in the field.

The use of Bordeaux to prevent certain leaf troubles, while not commonly practiced, will often give very good results. In one test made in this state last season, five applications of Bordeaux made to the tomato plants increased the yield 100 per cent over the yield of those in the same patch which were not sprayed. The dry, or point rot, which was prevalent last year, will do little or no damage in a soil which is well supplied with water.

Mich. Ag. Col. C. A. WAID.

SPRAYING CELERY.

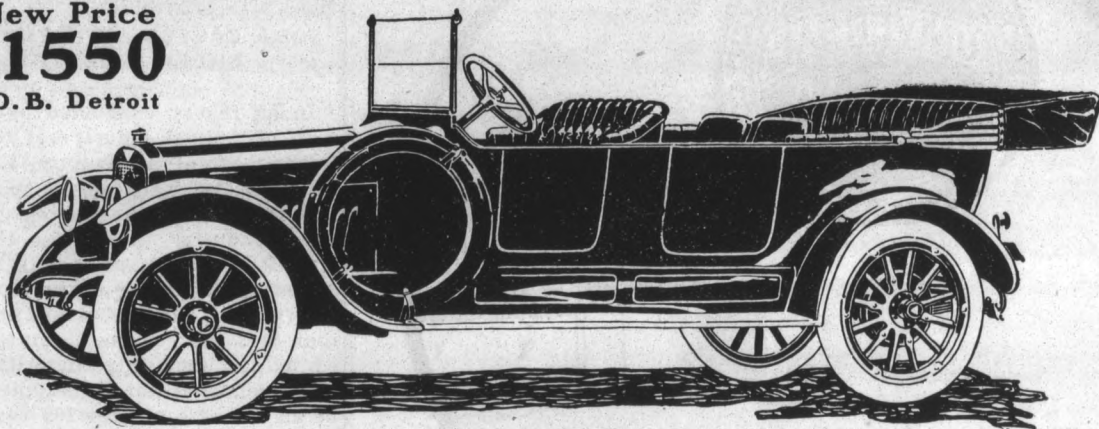
Bordeaux mixture as a spray for celery, is necessary to prevent blight and to kill insects but great care should be taken in applying the solution.

Samples from several of the markets last season were found to contain traces of copper in the form of dried Bordeaux mixture. Copper in any form in food articles is expressly prohibited by law, but there is no necessity for Bordeaux remaining on celery if it is properly applied.

One hundred or more pounds pressure should be maintained in the spray pump, at all times, and a suitable nozzle must be used. The nozzle should be such that the solution will be sprayed in the form of a fine mist, and the pressure should be sufficient so that the mixture will not be "squirted" onto the plants.

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Live Stock.

SOME CAUSES AFFECTING THE SHEEP INDUSTRY.

In an inquiry conducted by the Bureau of Animal Industry of the U. S. Department of Agriculture, a number of questions were asked relating to the reason for the decrease of the sheep industry throughout the country. It is of interest to note from the summary of replies prepared from the answers to the questions submitted, that in 27 out of the 36 states covered by the inquiry a majority of the correspondents stated that there might be an increase of over 100 per cent in the number of sheep kept on the farms of their respective states without displacing other live stock now maintained.

Among the reasons most generally given, the majority of replies for 30 states ascribe the decrease in the sheep industry to the depredations of dogs. Instances are given in which a large percentage of sheep were killed by dogs in various localities in recent years, aggregating, according to estimates made by the Bureau, attacks on from one-fifth to one-fourth of the entire number of flocks maintained in these communities, while the flock which has not been attacked by dogs in the last decade is the exception rather than the rule. It has been found that the enforcement of such dog laws as are to be found on the statute books of the various states depend largely upon public sentiment, as is the case with all laws. Where the sheep industry is strong there public sentiment demands the enforcement of these laws, and that demand is respected, but where the sheep industry is relatively unimportant, the opposite is quite likely to be the case. The remedy advised by the Bureau of Animal Industry is the levying of taxes sufficiently high to curtail the number of unnecessary dogs, and put upon the dog owner the burden of keeping the animals off other people's farms, which would give the sheep industry a fair chance in every community.

There are, however, other reasons for the present low production of sheep, not the least of which was anticipation of the effect of free wool upon the industry. With the practical certainty that the tariff on wool would be removed, and with the decline which had occurred under the near approach of free trade conditions which the anticipation of tariff changes had brought about, many sheep men thought it the part of wisdom to reduce their flocks to the minimum, while others went out of the business entirely. This reduction of domestic production, together with other factors which undoubtedly had an influence in the matter, has brought about a reaction, causing a world shortage of wool, and also of mutton supplies. This will undoubtedly prevent the further decrease of the sheep industry in the United States, and should stimulate the keeping of more small flocks upon the farms of the country than have been maintained upon them in recent years.

There are many economic reasons for keeping a few sheep on every farm, not the least of which is the value of the sheep as a scavenger of weeds. So far as the question of dogs is concerned, it is at present being considered by a committee of the national organization of live stock associations, and the result will undoubtedly be the pushing of uniform and desirable legislation on this subject throughout the states. These conditions are most favorable for the growth of the sheep industry, which is still an important one in Michigan,

but one which might be very materially increased to the profit of Michigan farmers.

Oakland Co. A. R. FARMER.

GRAIN RATION FOR THE GROWING CALF.

Kindly advise kind and amount of grain ration which should be fed to a growing calf of the beef type, with a feed of skim-milk twice a day.

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The kind of grain to feed a young calf depends a little upon the pasture on which he runs or the forage which he is fed when he gets of sufficient age to eat grass or hay. As a general proposition, however, where fed skim-milk, the grain for calves should contain an abundance of carbohydrates to make up for the fat which has been taken from the milk in the form of cream. Corn meal, ground oats and a little bran would make an ideal ration for this purpose, and after the calf has reached two months of age, little fear need be felt with regard to feeding too much to the calf which is intended to be grown for baby beef, provided no more is fed at any time than the calf will eat up clean. Where calves are run on good clover pasture, corn meal alone will make a fairly good supplementary feed after the calf has attained sufficient age to digest it. At the beginning, a jelly made from boiling ground flax seed will be better than the less digestible starchy feeds, but the latter can be gradually substituted for it as the calf grows older.

LIVE STOCK NEWS.

The Chicago market has lost its firmness that was so pronounced earlier in the year, when prime hogs brought from \$8.75@9 per 100 lbs., the packers fighting every advance and taking advantage of any falling off in the demand from eastern shippers. Frequently the big packers render themselves to some extent independent of the market temporarily by bringing in good supplies of hogs from other western markets, and it has happened frequently that large supplies of hogs offered on the market had to be carried over to the next day for lack of buyers. It is customary for the packers to discriminate against held-over hogs, especially those owned by speculators in the stock yards who make a living by "scalping the market." What the future may bring forth is freely discussed, and looking the matter over from the statistical point of view, it is difficult to see how the market can fail to rule higher later on, for the country's supply is woefully short of that in former years. This is indicated by the fact that the receipts in 11 leading markets of the country for the first five months of this year ran 1,687,000 hogs below receipts for the corresponding period two years ago, the Chicago receipts having been 289,841 hogs less than for the first five months of last year. Comparisons are being made with last year, and it is recalled that prime hogs advanced in June to \$9, while July saw a top of \$9.62½, with \$9.40 in August and \$9.65 in September. Later months last year saw much lower prices, tops being \$9.10 in October, \$8.30 in November and \$8.15 in December.

L. H. White, of Illinois, recently brought to the Chicago market two carloads of yearling cattle bred and raised in Gunnison county, Col. Mr. White bought these yearlings on the twenty-second day of last October, when they averaged in weight 665 lbs., at \$8 per 100 lbs. He ran them in the stalk fields until January 1, then put them on full feed of ground corn and cob, oil cake and alfalfa hay that he shipped in from Idaho. The cattle brought on the Chicago market \$9.15 and averaged 1,174 lbs. Mr. White said he finds it profitable to hay at a cost of \$18 per ton.

New York is receiving a good deal of foreign beef, and during June such imports averaged from 25,000 to 45,000 quarters of chilled and frozen beef weekly, in addition to large arrivals from abroad of mutton. Later on large receipts of beef from Australia are promised.

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Dairy.

CONDUCTED BY COLON C. LILLIE.

A BARN FOR FIFTEEN COWS.

I wish to build a dairy barn to accommodate 15 cows and to have a silo in connection with it. The ground where the barn will be located is practically level. I wish to build for as little cost as possible, and have an up-to-date building. Material for concrete construction can be easily procured. What I need is the plan. I don't like a plank frame. I have one good barn 28@42 which will do for horse stable and granary. I am a carpenter by trade. Can you help me out on the plan?

Lapeer Co.

A. A. H.

It is hardly practical to build a barn just for 15 cows. If you didn't want to use it for anything else it would be so small that it would hardly be a practical building. Where one only intends to keep 15 cows the cow stable is an adjunct of some other barn. Your present barn, of course, is rather small, but I would try to attach the cow stable to this rather than to build a barn for the express purpose of housing the cows.

If you will raise the present barn and put a basement under it you will have ample room for the cows and you could arrange it so that you would have room for your horses in the same stable also. Then you would have the whole of the storing part of the barn above for forage crops. You could build a silo outside of the barn and connect with a feeding alley for handy feeding. With this extra storage for feed I think you would certainly have a sufficient amount of room so that you could keep the 15 cows in addition to the present stock which you are keeping in your present barn.

If you would raise your barn and put a basement under it and have the stable run the long way, you would have 42 feet for stalls. This is nearly enough for the 15 cows on one side. Now if you have these cows face a feeding alley in the center and only have three or four feet back of the cows, you will have room for two rows of stalls. Then you can keep your horses on the other side, and still have room for a box stall or two.

If it does not seem practical to put a basement under the old barn, then you can build a lean-to stable on one side that will hold about 15 cows. Then, with your silo you will have storage enough for feed. Unless you need part of the barn you intend to build, for other purposes, I don't think it would be practical to build it.

IS THE MILKING MACHINE A BENEFIT?

As I am thinking strongly of putting in a milking machine I would like your opinion on the matter. Is it a benefit or an expense? Will the milker affect the cow in any way and will she give as much milk and as long as she will when milked by hand? I am milking 19 cows now and will soon have 23 to milk, and am thinking of putting in a milker right away.

Gratiot Co.

C. S.

The milking machine has now been in operation long enough so that we can say that it is fairly successful. Some people have better results with it than others, but this comes from the fact that the men in charge are better adapted to the use of the machine. The machine must be carefully manipulated, the same as any other machine, but there is nothing difficult about the manipulation. On the same principle that hand-milking is done much better by one person than another, so one person will do better work with the milking machine than another.

You are operating on a living subject, each one having a different disposition and temperament, and this

must be taken into consideration. One man can get better results with an individual cow than another, because he discovers her temperament and sticks more closely to her conditions. But in the hands of a fairly careful man who understands cows and their disposition, and the theory and art of milking a milking machine will give good results.

Cows Like Milking Machine.

The milking machine will not injure the cow in any way. Her udder will be in just as good shape as ever. You don't need to be afraid about that. There is no trouble in breaking the cows to the use of the milking machine. They seem to rather enjoy it. You will have no kickers when you use the milking machine. As to whether a cow will give as much milk when milked by a milking machine as they will when milked by hand, it is a hard question to answer. I confess that I do not know, and how can a common farmer tell? When he milks a cow with the milking machine he can't milk her by hand and cows hardly ever give as much one season as another, that is, they vary. If a cow gives a splendid mess of milk during one season, the next season she is quite liable not to do so well. Now when one milks the cow by hand during the favorable year, then the next year puts on the milking machine he is liable to think that the cow doesn't do as well as with the milking machine, and vice versa.

Production Not Decreased by Machine Milking.

Experiments at the Geneva Experiment Station through a series of seasons on the same cows, seemed to indicate that the milking machine is practical, that cows do give as much when milked with a machine as when milked by hand. Other careful experiments have been made from other sources which seem to bear out the same fact. My own experience would seem to indicate that cows will give just as much with the machine as by hand. For instance, we hardly ever begin to use the milking machine until spring when the cows are all through freshening. Then we keep records of the milk and drop right off from hand milking to machine milking and cows do not drop off in the yield. They give just as much with the milking machine as they do when we milk by hand. I cannot see that it gives any bad effect.

REPORT OF WEST MICHIGAN HOLSTEIN SALE.

There were 98 head of pure-bred Holstein cattle sold at the Third Annual West Michigan Holstein Breeders' June Consignment Sale which was held in the carriage and automobile building on the West Michigan State Fair Grounds June 10 1914.

There were quite a number of bulls and calves sold this year. This reduced the general average per head from the average per head of last year's sale. The 98 head sold for \$19,845, which gives a general average of \$202.50 head. Of the above number there were seven heifer calves which sold on an average of \$181, and seven were bull calves which averaged \$69. Nine bulls were sold at an average of \$170. The cows sold at an average of \$223.50 each.

Vella Leyons DeKol brought the top price of \$520. She was consigned by T. J. Blanchard, Kent county, Mich., and was bought by Benjamin S. Hanchett, also of Kent county. Mr. Hanchett was also the largest buyer at the sale, having bought ten head. Geo. W. Barber, of Ohio, was next with the purchase of eight head to his credit.

H. A. Washburn, of Allegan county, with 12 head had the largest consignment there, and John M. Tobin, of Allegan county, got the highest average per head for his consignment, the 11 head he had there averaging \$286.36.



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DETROIT, JULY 11, 1914.

A FEW LEADING ARTICLES OF THE WEEK.

- Importance of Humus in Soil Fertility.**—Illustrating the advantage of a crop rotation which will keep up the humus content of the soil 22
- Some Causes Affecting the Sheep Industry.**—An analysis of the reasons for the present shortage of sheep and wool and their bearing on the future of the sheep industry 24
- Is the Milking Machine a Benefit?**—A discussion of the practical considerations involved in the successful use of this device.... 25
- How the Appetite of Birds Assists the Farmer.**—A few examples of the economic value of common birds 27
- Hot Weather Desserts.**—Some cooling dishes which will be a welcome addition to the midsummer menu 30
- How Shall we Sell Our Apples?**—A discussion of the various available methods of marketing the apple crop 32

CURRENT COMMENT.

The Annual School Meeting.

Notwithstanding the fact that the annual school meeting in many Michigan school districts will find the farmers of those districts exceedingly busy in the rush of the harvest season, yet this should not in any case be made the excuse for non-attendance of this important gathering. Every farmer can, if he will, devote the time and energy required to attend this annual school meeting, and give the propositions involved his serious thought. Important as is the work of the season, nothing is more important to the community than a good school, and a good school cannot well be maintained without some attention by the average citizen. The attendance of the annual school meeting is a public duty which should not be shirked by any thinking citizen. While our educational system may be justly described as the best in the world, yet there is much lacking to make the ordinary district school measure up to a high ideal. There is needed a spirit of interested liberality on the part of the substantial citizens of every neighborhood to bring about this much to be desired result. The first step toward securing the public spirit which will result in the development of the right kind of school in the community is the general attendance of the school meeting by the people of

that community. If every Michigan Farmer reader would this year discharge his public duty in this direction, the beneficial result in the improvement of the common schools would be difficult to estimate.

A New Problem for Michigan. The announcement made public during the past week that recently drained lands in Alger county were to be settled by a colony of some 400 Japs from California was the signal for many strenuous protests on the part of public spirited citizens. Upon the confirmation of this rumor, inquiries were made from official sources to determine if any course were open by which the consummation of the plans could be prevented. It appears, however, that there is no available means of preventing the establishment of a large Japanese colony in our state by Japs who are already legally in the country. The general protest is due to the opinion held by most thinking people that the settlement of foreigners in colonies, which does not favor their assimilation as citizens, is undesirable.

There is, we believe, no strong anti-Japanese sentiment in Michigan, yet the farmers of the state will not welcome the competition of such a colony, and if this report is confirmed by the establishment of such a colony, there would seem to be little doubt that the consummation of the plan would precipitate a situation similar to that which existed in California, and which gave rise to the passage of an alien land law, which has brought about foreign complications not yet entirely settled. While, as above noted, there may be little anti-Japanese sentiment in Michigan, yet the federal government has for sufficient reasons considered the general immigration of orientals as undesirable, and it is but natural that this sentiment should be shared by the people of the various states whenever a general colonization scheme is developed, either by promotion or through the working of economic laws. From present indications, it would appear that this proposition will be one which will seriously engage the attention of the next Michigan legislature, and it is one which should receive the careful thought of every citizen of the state, to the end that its solution may be counseled by wisdom rather than hasty sentiment.

A Study in Farm Profits.

Surveys have been made by the Office of Farm Management of the U. S. Department of Agriculture, of more than 2,700 farms in the United States. These include all manner of farms from highly specialized to general farms. It is interesting to note that the largest labor income made by any of the farmers so far interviewed was made by a general farmer who feeds live stock as a business. This farmer, who made a net labor income exceeding \$10,000 for his year's business, owns 80 acres of land in one of the best corn growing districts of central Illinois. Realizing that his chances of making a large income from these 80 acres were comparatively small, he rented 600 acres from the adjoining owner, financing the whole deal with a total capital of 22,280. Had he owned all this land, his investment would have amounted to more than \$100,000. From the products grown upon this total of 680 acres, he fed cattle, horses and hogs, which were purchased for the purpose, all of his profits being made from this source except from the sale of some corn.

By superior management of the larger business which this rented land enabled him to do, this farmer made a labor income which amounted to almost 50 per cent of his entire capital. Another factor of interest in this incident is the encouragement it offers to the young man who starts

by renting land. By renting a farm and giving it the right kind of management, the young man of ability will soon have enough money to purchase some land and thus grow into the business of farming on a permanent basis. The result shown in this report as well as other cases which could be cited in similar investigations, indicates that the better plan for the young man with limited capital is to rent a fair sized farm at the start rather than to invest all his savings in a small piece of land, since his chances for profit are much greater, as is shown by unmistakable evidence such as that above cited.

The Standardization of Crops.

The discussions of this subject which have been presented in these columns in recent weeks are not only interesting in themselves, but would seem to prove quite conclusively, that the standardization of products, where accomplished by the producers, tends to increase the proportion of the consumer's dollar which is received by the producer. The argument that the fixing of standards will tend to increase rather than diminish the possibilities of profit by speculators, does not seem to be well founded, in view of the existing examples of such standardization which directly controvert this argument. The greatest example of standardization of agricultural products is in the work of the citrus fruit growers of the west, and as has been repeatedly pointed out, such standardization has added to the profits of the grower and the satisfaction of the consumer. This, we believe, is bound to be the case where standards are fixed by the producers instead of market manipulators, since growers will certainly not fix standards which cannot be attained with reasonable certainty. There is a very good demand for the best products in all lines, and it will always be found profitable to supply this demand, and supplying it does not necessarily involve a lessening of the demand for a more ordinary product at a price equally as good as that for which ungraded products normally sell. The matter of standardization of farm products is one which may profitably be studied by every farmer.

Lightning Rods.

With the coming of the season for electrical storms, many Michigan Farmer readers each year seek definite information with regard to the efficiency of lightning rods as a protection from damage from this source. Notwithstanding the fact that it has been scientifically demonstrated that lightning rods properly installed are an efficient means of protecting buildings from damage by lightning, there are many who seek definite statistics on this point. Several such inquiries have recently been received but an application to the State Commissioner of Insurance reveals the fact that there are no Michigan statistics in his office directly bearing upon this problem in the aggregate. We have at hand, however, some figures recently collected by Prof. W. H. Day, of the Ontario Agricultural College, which will be of interest in this connection. In the reports of 24 insurance companies which were included in Prof. Day's investigation, only two rodged buildings were burned by lightning, both due to defective installation, such as not being properly grounded, etc. In the Province of Ontario 40 companies last year reported 621 cases of damage by lightning, with losses totaling \$113,450. Out of the 621 buildings struck by lightning, only 10 were protected by lightning rods, and the loss on them was \$3,917. Prof. Day makes the strong assertion that out of every thousand dollars worth of damage done to unrodged buildings by lightning, \$999 would be saved if they were properly rodged. While Prof. Day admits this to be a strong state-

ment, he asserts that it is based on 13 years of investigation, and that its truth is indicated by the data gathered during that period.

HAPPENINGS OF THE WEEK.

National.

Fifteen persons were drowned two miles from Skagway, Wash., on the morning of the Fourth of July, while enroute to a camping ground to spend the holiday. A storm caught the party, caused a panic on board the yacht and resulted in the craft being capsized.

The United States public health service is in charge of the bubonic plague situation in New Orleans and Gen. Blue, who is directing the fight, states that there is no occasion for quarantining the city.

The temperance people of the state of Ohio have begun a campaign looking toward the passage of an amendment to the state constitution prohibiting the manufacture, sale and importation of intoxicating liquors. Petitions are being circulated in 50 cities and villages.

The Westinghouse Company, of Pittsburgh, are employing strike breakers to take the place of the 10,000 workers who have walked out.

On Sunday eight persons are reported to have been killed in automobile accidents in this country: At Somerset, Pa., two were killed and six injured when a touring car skidded and went down an embankment. At Washington Courthouse, Ohio, two women were killed and two men injured by the automobile in which they were riding going into a ditch. A train hit an automobile, killing three and fatally injuring another person at Aurora, Ill. A tire blow-out resulted in a car turning turtle at Delavan, Wis., and one person being killed while others were hurt.

A cyclone swept through the southeastern part of Gratiot county, Mich., a week ago, destroying many buildings and other property, and causing a loss reaching into the tens of thousands of dollars. Many of the buildings were insured.

President Wilson's reception of J. P. Morgan, the financier, at the White House last week, and his proposed entertainment of a committee of business men from Chicago, and Henry Ford, of Detroit, this week, is declared by banking and other interests to be of direct benefit to business conditions because it shows the administration is inviting the opinion of business men on measures now before Congress for enactment into law.

Foreign.

An effort is being made by the English House of Lords to introduce an amendment into the Irish Home Rule bill which recently passed the House of Commons for the third time, by which it is hoped that civil war between Ulster and the other counties of Ireland may be avoided. Although scarcely none of the unionists are favorable to the proposed amendment they declare they will support it and compromise their position in order to avert war.

Reports from Mexico state that Gen. Villa and "chief" of the revolutionists, Carranza, have settled their differences, temporarily at least, and are now to co-operate in an effort to take Mexico City from the federalists. The rebel armies are already marching toward the capital.

On July 5 an election was held in the portion of Mexico held by the federal troops. There was a very light vote cast. Gen. Huerta received a majority of the votes for president; Gen. Blanquet for vice-president, while all the present members of the chamber of deputies and the senate were returned.

While the British polo team was celebrating its victory over the American team, the Harvard rowing crew beat the English picked men from English universities at Hanley, England, in a close contest, and a team from Boston defeated one from London.

The international opium conference is in session at The Hague, Netherlands, and an effort is being made to formulate an agreement whereby the powers will lend their support to the suppression of the opium traffic. Turkey delegates have so far held out from accepting any resolution yet suggested and it is feared that her disapproval may mean the failure of an international action to stop the trade. Delegates from China and the United States are most aggressive in the movement.

Theodore F. MacManus, President of the MacManus Company, of Detroit, was given the degree of Doctor of Laws (LL. D.) by Notre Dame University at the commencement exercises last Monday evening. This distinction was accorded Mr. MacManus, the university announced, in recognition of his attainments as a man of letters, a philosopher and a poet.



How the Appetite of Birds Assists the Farmer

By VERNE E. LeROY.



The Song Sparrow Delights in a Liberal Meal of Insects.

IMAGINE the absurdity of a young boy eating enough in twenty-four hours to double his weight—fifty to 60 pounds of beefsteak would do it. Quite impossible for the boy but it is easily done by young birds. Birds are more active than men; they grow faster, live faster, breathe faster, their temperature is higher, their blood circulates faster and they must, therefore, eat more food and digest it more quickly than do other animals.

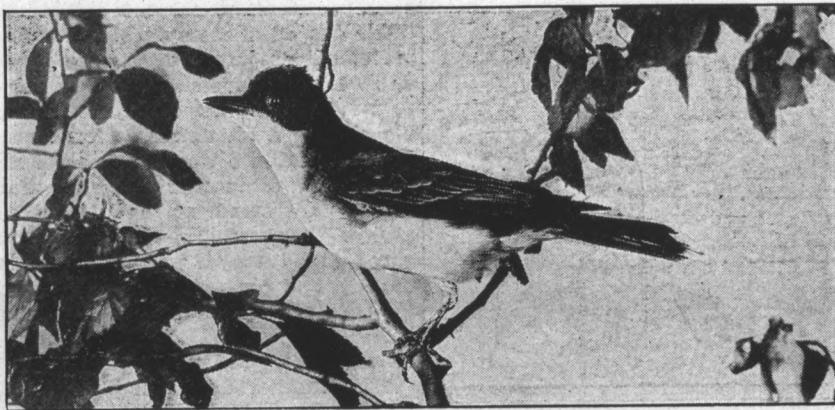
It is difficult to form an accurate idea of the amount of food a wild bird gets and unfair to estimate the food of the birds in nature from the food birds eat in captivity, but a few facts and figures will help, by suggesting at least, to give an idea what a hungry bird can do in the way of eating.

A brood of cedar-birds watched by Weed and Dearborn ate ten ounces of food apiece in fifteen days, ten times

their own weight when they left the nest. The same observers say three robins, ten days old, eat in two hours, one bird cherry, one large cricket, one smooth caterpillar an inch and a half long, one moth, one harvestman, one tumble bug, two earthworms, two beetles, eight spiders, and twenty-nine grasshoppers. Mr. Charles W. Nash fed a young robin all the cutworms that it would eat in one day. It ate 165 worms, five and a half ounces, or twice the weight of the bird, before it was satisfied. Young crows require at least one-half their weight of food a day and can handle more with ease. Professor Forbush kept a crow that needed, in order to gain weight, the daily ration of nine ounces of melon, nine ounces of tomato, nine ounces of corn, four frogs, one salamander, and

There is shown, also another thing that has a direct bearing on the success, health, and happiness of every living man.

The monstrous meals consumed by birds consist of insects, vermin, and other animals that, if left untouched by the hungry birds, would, as some authorities have it, devour every plant on earth. This statement, though, is hardly fair because the actions and interactions of bird life, insect life, and other forms of life are much too complicated to be explained away so easily and so decidedly; but the belief is that any degree of successful agriculture would be, at least, utterly impossible without birds. When it is known that in the stomach of one bird at one time there has been found between three and five thousand in-



Fully Ninety Per Cent of the King Bird's Food Consists of Beetles, Grasshoppers, Butterflies, Wasps, Flies and Caterpillars.

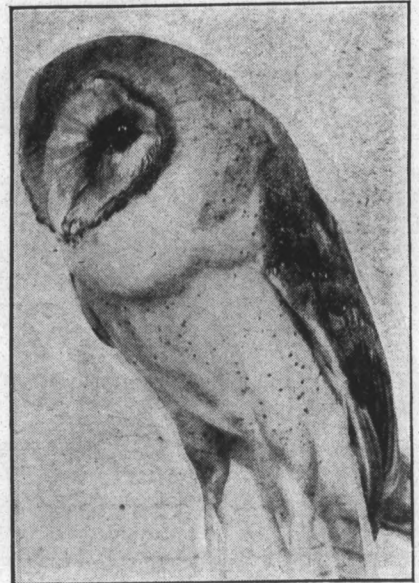
all the grasshoppers that it could eat, and the ration had to be increased as the crow grew larger.

In order to eat such large quantities of food, birds must digest rapidly. It has been found by experiment that young crows will digest insect's eggs and pass the shells in an hour and a half. Cedar-birds pass the pits of cherries in forty-five minutes after eating them, and blackberries are digested in half an hour. These figures have a greater significance when it is known that the average man would need from fifty to a hundred times as long to digest the same things. The average baby will double its weight in seven or eight thousand hours—a young bird will do the trick in twenty-four.

Thus it is shown, in a general way, how fast a bird's life runs its course.

sects, it seems proper to assert that such facts afford sufficient basis on which to found sound reasoning.

What insects can do to crops is well known and people are rapidly gaining an appreciation of the part that birds play in the struggle between crops and insects. Once farmers appreciate the work of birds, they always will because it seems that only in so doing will they ever see the unsteady arrangement of nature adjusted to a state of equilibrium, and the harmony between insects, crops and birds restored to the best condition, or, at least, to one in keeping with good farming. Possibly more immediate measures may have to be taken at first; nevertheless, there is little room for doubt that the protection and encouragement of insect-eating birds offer a sure means of general relief.



The Barn Owl Relishes Such Vermin as Rats and Mice.

cooking and eating. A small stove, either kerosene or alcohol, preferably the latter, should be taken. Much of the cooking can be done in the open over a wood fire. Prepared foods are convenient, inexpensive and palatable. Food stuffs put up in separate packages ready for instant use are easily carried, keep free from dirt and insects, and do not spoil readily. Coffee should be taken in ground form. Naturally one secures game and fish, and if located near a country garden may secure ample garden truck. One should estimate closely on the amount of provisions required so that the party will neither run short nor be overburdened with unnecessary stock.

To keep food stuffs fresh secure a tight wooden box and place it in a stream, or spring, and store the perishables therein. If no spring or stream is available bury a box in the earth in a shady spot, cover it well and keep the food inside. The system to use will depend, of course, upon the length of stay and the natural advantages.

Fishing tackle, firearms and ammunition should be packed in small packages and kept free from damage by moisture. A canoe, or rowboat, rubber boots and leggings, are almost necessary, as are also one or two hammocks, a few magazines and books, unless there is an aversion to literature when the latter might well



The Great Horned Owl Helps to Make Agriculture Profitable.

Preparing for the Camping Trip.

By WINFIELD WEBB.

THERE is no form of outing more desirable than camping, providing, of course, that the party selects for the camp site a spot that is adjacent to a lake or other body of water where fishing is good. Spring water conveniently near is desirable, affording both drinking water and a means for keeping food supplies. It is sometimes difficult to find such a spot that is available; but it will be well worth while to go a longer distance to secure a satisfactory location. If it is some distance from a railroad all the better.

After the location has been selected and arranged for, proceed to get the outfit in shape for the trip. The camping outfit does not of necessity have to be expensive, but it should be suitable. Tents are essential, for inclement weather is almost certain to overtake the party. Some carry wood floors, but these demand much space, and are by no means important. A good bedding of straw that can be cast aside when breaking camp, will answer the purpose. It will be dry and warm, and act as a substantial floor to the tents. To obviate any likelihood of disagreeable experiences with water, in the event of rain, the tents should be pitched on a slope and protected in a measure by trees.

There should also be a tent for



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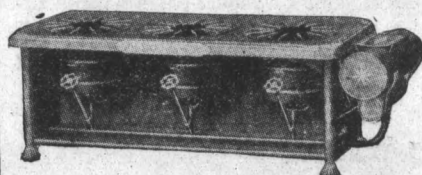


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be left at home. The hammocks are always useful, and may serve a number of purposes to advantage. On these trips one should always provide himself with a camera as it will afford many additional opportunities for pleasure.

Take only such clothing as you will absolutely need. What you take should be substantial, and suitable for the occasion. The idea is to rough it, so the clothing should be such as will not be hurt by severe usage.

There are hardships to be counted on. There are insects to worry and bite; snakes and bugs and flies to be encountered by the campers. A liberal yardage of mosquito netting will always be found useful. Then you must be prepared for emergencies,

such as bites, bruises, etc. A box of salve, some witch hazel, and other common household remedies should find a place in the outfit where the stay is to continue for several days or longer.

If the trip is only to consume a day or so there will be much less demanded, and the cost will be lowered. In these short trips the party can go by carriage, automobile or motorcycle and the trip will be pleasant, even though it is so limited in duration.

What is most desired is to get away from the monotony of everyday life, and this can be well done in a trip of this kind and the things that are endured in the way of hardships make the trip all the more delightful to the real lover of the out-door life.

Making the Vacation Profitable.

By F. A. NISEWANGER.

THE "Last Day," that for weeks of sunshine, and flowers, and tempting breezes and sounds has been the goal of hundreds of restless boys and girls who hurried to it with all the eagerness of their natures for change, is here with a veritable avalanche of youthful energy unloosed upon homes and communities.

I cannot quite sympathize with mothers who send their children to school the minute the law will allow them to do so—or before—for the plainly expressed purpose of "getting them out of the way." In the first place, babies should not be so raised or so little enjoyed that it is a relief to get rid of them; in the second place, it is a bit unfair to force on a teacher what we want to discard. But the remark of another mother is more easily understood. She said, "I am always glad when school begins; Margaret (aged ten) is so restless and unsettled during vacation. I think the regular hour and routine are much better for her, and they are surely a relief to me."

This mother had reasoned rightly from cause to effect, but had failed to solve the difficulty for her young daughter; hence the long summer vacation was more or less of a trying season to both of them and was much more of a waste to the young girl than it should have been.

Here, then, is our problem: Our boys and girls are turned loose with eight or more extra hours a day on their hands; what shall we do with them?

The children may think that they want endless time for play, and they probably should have it for a few days, but one may eat of even his favorite preserve till a piece of plain bread and butter becomes preferable. And if the old adage, "All work and no play makes Jack a dull boy," is true, the reverse is, also, and possibly in a more perilous sense. It is well, even for children, to be conservative in all things, but if they are left entirely to their own resources there is risk of an over-indulgence in play and the possibility of more mothers looking forward to the opening of school in the fall so that the children will be out of the way.

Obviously, the thing wanted is whatever will be for the best welfare of the boys and girls, not only in a present, but also in a future sense, so that in spending a summer, education, growth and character development are secured, as well as rest and entertainment.

There must be hours of spontaneous, unrestrained play; but these will be enjoyed far more if there are other hours of responsibility and work suitable to the years and individual tastes. Almost always, there is considerable brightness in even what looks to be dull work if interest has opened one's eyes to see it. Those homes in whose welfare, happiness and prosperity the young people feel

a definite responsibility, are the homes not quickly deserted by them.

Boys should study agriculture more broadly under father's guidance than is possible with restricted schoolroom walls and hours. They should have definite work in connection with the crops and stock, learn the whys and wherefores as well as mere routine labor, and have a financial interest in results.

And the girls should have some real domestic science instruction under mother's guidance, remembering that domestic science is not just "cooking," but that it is the science of "Home." Let the girls, too, receive some sort of compensation in dollars and cents, for their work. I do not mean that they should be taught to think that they cannot do anything without receiving pay for it, but for certain regular duties, as little business women, they should receive a share of the money that comes from chickens, fruit, butter, cream, etc., or a weekly cash compensation. It may be small, but it should be regular and sure. It is always regrettable when our young people must go into someone else's home to earn their spending money.

HOW SHOT ARE MADE.

BY W. TRUB.

Before 1782 shot were made by cutting sheets of lead into square strips equal in size to the desired diameter of the shot. These strips were then cut into cubes and thrown into cylinders and revolved rapidly until the friction had worn the cubes roughly into the form of spheres.

The present method of making shot is, according to tradition, the result of a dream. An Englishman, of Bristol, Watts, by name, dreamed one night that he was caught in a shower, the drops of which appeared to be round leaden pellets. This set Mr. Watts to thinking. He knew that all liquid bodies have a tendency to become spherical in falling through the air. He poured some molten metal from the top of St. Mary Redcliffe Church into water. The result of this is seen in the modern specially constructed shot tower.

A shot tower is generally about 180 feet in height and from 30 to 40 feet in diameter. This height is necessary, in order to give the falling globules of lead time to cool before they strike the water at the bottom of the tower. In making large shot a higher tower is required than in making the smaller sizes.

The lead is melted in kettles, set in brick ovens, at the top of the tower. A small amount of arsenic or antimony is mixed with the lead; this makes it cool and harden more rapidly.

The middle of the top of the tower is occupied by metal colanders. The size of the holes in the colanders govern the size of shot. These colanders

are moved back and forth with a quick, jerky motion, by automatic machinery. The melted lead flows from the kettles to the surface of the colander through a pipe, with an automatic cut-off. As the layer of lead touches the colander, it jerks sharply forward or backward, freeing the metal cleanly and before it can display a tendency to string out. The drops or globules of lead, passing through the holes in the colanders cool as they fall, and by the time they reach the water at the bottom of the tower they are changed into bright little balls.

The shot are now drawn from the water and sorted for imperfections and according to size. The processes by which these seemingly difficult tasks are performed are extremely simple, as we shall presently see.

The shot are brought from the water at the bottom of the tower to the top of an inclined plane by means of a bucket elevator, i. e., an endless chain, to which are attached small buckets. Down this plane the shot roll by the force of gravity. The lower end of the plane does not reach quite to the receptacle toward which the shot rolls. A space, the distance of which is determined by experiment is left. As the shot rolls down the plane, the perfect ones gain sufficient speed to leap the space at the bottom and fall into the receptacle. The imperfect ones drop through the open space and are remelted.

Sorting for size is also very easy. The shot is poured into the top of a device somewhat like a bureau, each drawer of which has a bottom like a sieve. These drawers are constantly vibrated by machinery. The shot falls through one drawer after another until one is reached through which they cannot pass. When the drawers are emptied each one will contain shot of a uniform size.

The blackening and polishing processes yet remain. This is done by pouring the shot into revolving cylinders, partly filled with powdered graphite or black lead. The motion both blackens and polishes them.

WHY IT IS DIFFICULT TO SHOOT FISH.

Bang! A pencil of flame leaped from the muzzle of Bobby's new rifle and a .22 bullet zipped into the mud. A big cat-fish, dozing in the warm, shallow water behind a log, was suddenly galvanized into life, and shot away out of sight.

"Missed him again!" exclaimed Bobby, in disgust.

"What could you expect when you didn't even see him?" asked Grandpa.

"Why, Grandpa, I saw that big cat-fish as plain as day. Didn't you?"

"No. Nor did you. What you saw was the reflection of the fish on the surface of the water. Come to the camp and I'll show you what I mean."

Very much puzzled, Bobby followed. Arrived at the camp, Grandpa placed a bread-pan on the floor and told Bobby to stand facing it, about ten feet away. Next, he took a silver dollar and placed it on the bottom of the pan near the edge toward Bobby.

"Do you see the dollar?" asked Grandpa.

"I do," answered Bobby. "Just as plain as I saw that fish."

"All right. Now I will slowly draw the pan away from you; and the instant the dollar is entirely out of sight, tell me."

Grandpa drew the pan along the floor in a straight line from Bobby until the dollar was concealed from his eyes by the side of the pan.

"Now, stand still," said Grandpa, "and see what happens."

He began pouring water into the pan, slowly and carefully. To Bobby's amazement, the dollar gradually came into full sight.

"Gee Whillikens!" exclaimed Bobby. "How did you do that? Didn't you

move the dollar as you poured in the water?"

"Not a bit," replied Grandpa positively. "The dollar is still out of your sight. What you see is the reflection of the dollar on the surface of the water. It was the same with that cat-fish. It was out of sight behind that log; and you shot at its reflection. That is why it is so difficult to shoot a fish. What we see is not really the fish. It is the fish's reflection. It takes much practice to be able to hit your fish every time. There is no set rule to guide you. It depends on the distance the fish is from the surface of the water, the distance you are from the fish, the clearness of the water, etc. You should always remember, however, that the fish is much closer to you than it appears to be."

WHEN CARL FORGOT.

BY MRS. JEFF. DAVIS.

When Carl awoke on the morning of his birthday, he found beside his bed a dear little velocipede. Carl had wanted a velocipede a long time, so he was greatly pleased to get such a birthday present.

"Now, mother," he said, "when I go on errands for you, it won't take me so long. I can go much faster on my velocipede, than I can walk, or even run."

He had a good time playing with it all the morning. When his little sister Daisy wanted to ride with him, he found that by sitting closer to one side there was plenty of room for two. And it was ever so much more fun, when he let someone else enjoy his present with him.

When it was nearly lunch time mother called him. "Carl," she said, "I want you to go to the baker's, at the corner, and get me a loaf of bread. Take this little basket to bring it in, and go right away, for it is getting late."

Carl was glad to do the errand for his mother. He jumped off his velocipede, and went to get the basket, and ran down the street with it hanging on his arm.

The baker put the bread into the basket, and Carl hastened home again. When almost there, he met Daisy going to meet him on his velocipede.

"Why didn't you ride to the baker shop?" she asked. "I thought you were going to use your velocipede when you go on errands for mother."

"Oh, I forgot!" Carl exclaimed ruefully. "But mother will want me to go again, and I'll be sure to remember next time. I'll be more used to riding around after awhile, so won't forget."

Father teased Carl a good deal when he heard about it, but mother said:

"Never mind the teasing, dear. Your forgetting proves that you are a very obliging little son, and more anxious to help mother, than even to enjoy a ride on your new present."

THE AMERICAN BOY.

BY L. M. THORNTON.

He sings like a bird in the twilight heard,

And runs like a wild-wood deer,
He climbs a tree like a chimpanzee,
And swims like a porpoise queer.
He's an eye as keen as a hawk I ween,

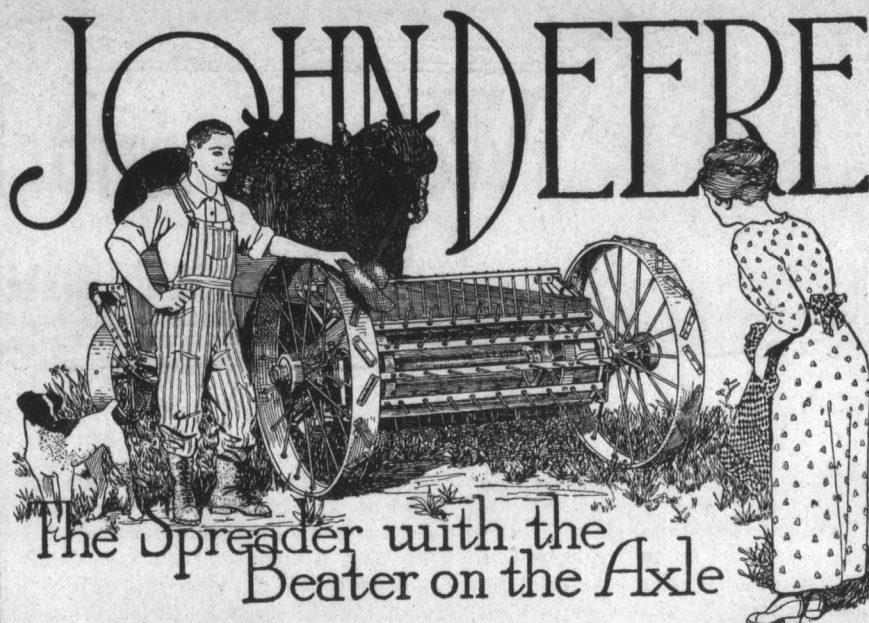
Can jump like a kangaroo,
For that's the way at the present day,
That a real live boy must do.

A bear he'll flout in a wrestling bout,
He's the cunning of mink or quail,
He'll dive like a fish if he so should wish

Or creep to be like a snail.
He's an appetite like a pig or kite
And life is a round of joy
For that "who is who" of the whole world's zoo

The real American boy.

Mystery still shrouds the cause of the explosion which wrecked a building on Lexington avenue, New York city, Saturday morning and killed four persons.



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

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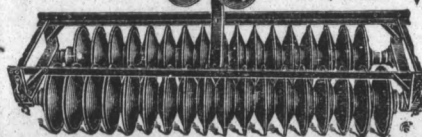
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Woman and Her Needs

At Home and Elsewhere



"Trifles Light As Air."

HOW can I cure my little girl of jealousy?" writes a mother. And then follows the story of how the one child in a family of four is spoiling the home life of all by her constant complaining that she is neglected and unloved, and that father and mother do more for her brothers and sisters than they do for her.

I should like to help this mother if I could, for I can see ahead for the small daughter nothing but years of unhappiness for herself and everyone with whom she must live. But I know no help for jealousy. If I could discover a cure for it my name would go down with those of Pasteur, Mme. Curie and other great benefactors of the human race. For there is no disease by which mankind is cursed which causes so much unhappiness to the victim and her friends as jealousy. Other diseases affect only the one they attack, but jealousy blights everyone who comes in close personal touch with the sufferer. And for every other disease, except cancer, there is a known cure which friends may apply. For jealousy there is no cure save in the will of the victim, and all too often the will to cure does not exist.

Jealousy takes so many forms. Sometimes, as in this case, one child in the family insists on more than his share of attention, and if it is not forthcoming, imagines himself slighted. Punishments do not cure; they only confirm the child in his belief that he is imposed upon and that his brothers and sisters are better loved than himself. There is nothing to do but to try patiently to show the small offender how foolish he is. A thing, I grant you, much easier said than done.

Another person plays, sings, paints or writes. He is jealous of his professional reputation, angry if you praise a fellow artist, hurt if you do not speak first, last and all the time of the excellence of his work. We may excuse this sort of jealousy on the score of artistic temperament. But it does not incline us towards its possessor, nor add to his success. Rather it detracts, for where we are forced often to profess admiration we begin surreptitiously to look for defects, and we always find that for which we look.

Jealousy between husband and wife has caused more misery since the world began, than either drunkenness or infidelity. One husband is jealous of any attention his wife shows to any person, young or old, male or female. He resents her love for her mother, and accuses her of caring more for her family than she does for him. There is a boarder in the home, a man, and he accuses his wife of cooking finer meals now than she did when they were alone, not stopping to think that it is because he never gave her enough money to get good food. He is angry if she speaks to a neighbor's husband, peevish if she seems glad to see her friends when they call, and constantly on the lookout for something to prove that she loves everyone else better than him.

"Sometime I am going to do something awful," says this wife, "and I'll do it just because my husband is always looking for me to. I get so tired

of being constantly spied on and accused of wrong doing that some day I'm just going to start out and do all the awful things he seems to think I'm capable of."

And that is the way jealousy often acts. It takes a strong person to live always under the cloud of suspicion and come through without stain. So that jealousy not only keeps the victim in a constant state of mental unrest, but reacts upon its object until many lives are spoiled.

Jealousy must be a form of insanity. There is no other way to explain it, for it is based so entirely upon lack of judgment and common sense. It is so openly a confession of inferior-

ity. The really superior person has the shoulder straps of beading and no need to insist on his goodness. Everyone concedes it. But the person who is not just sure of himself must clamor for the attention he thinks he deserves. The man who is jealous of his wife, the woman who is jealous of her husband, admit by that jealousy that they are not the equals of other men and women. If they felt their own superiority they would have no fear of holding their mate.

And in the same way the child who is jealous of brothers and sisters shows that he thinks the others are brighter, prettier or better than himself. It is such a senseless, unreasoning, terrible thing, is jealousy. And the particular devil who inspires it is gotten out only by much fasting and prayer.

DEBORAH.

Hot Weather Desserts.

Fortunate the farmer who cut ice while the winds blew last winter. During dog days he can be assured of the most delicious, simplest and cheapest desserts known to cooks.

For where milk, cream and eggs are ready to hand there is no cheaper dessert, nor one easier made if the kitchen manager knows how to go about the process in the easiest way.

The ice should be broken in small pieces, as the more rapidly the ice melts, the quicker the cream will freeze. Salt hastens the melting process, and is added for this reason, the amount depending upon whether you want a fine grained cream, insured by long freezing, or a coarse grained cream. Ice cream proper, that made with milk and eggs, or cream, should be frozen longer than sherbets, made from fruit juices and syrup. For the ice cream use one measure of salt to three of ice, and for the sherbets about one measure of salt to two of ice. When the ice floats, draw off the water and add fresh ice and salt. After the cream is frozen, the paddle should be removed and the cream scraped down and packed in the can; the water drawn off and the freezer repacked with ice and salt, using one measure of salt to four of ice. If there is time to allow the cream to stand for two or three hours before serving, a firmer cream is assured.

Of course, the very best ice cream is made from pure cream, flavored and sweetened. This may be scalded, or not, as you wish, the scalding giving a smoother, more velvety cream. Take cream and sugar in the proportion of one cup of sugar to one quart of cream and scald together. When cool add two teaspoons of any desired flavoring and freeze. It is greatly improved by adding two cups of berries put through the puree strainer, or two cups of peach pulp.

If you do not wish to use all cream a cheaper dessert may be made by using one quart of milk, one cup of sugar and three beaten eggs. Prepare as for custard, and freeze. This is improved by adding one pint of cream but the cream may be omitted.

Parfaits are made without stirring in the freezer, and are a delightful change from regular creams. To make beat one pint of cream stiff, make a boiled frosting, using three egg whites, one cup of sugar and one-third cup of water. Fold the cream

into the frosting, flavor with vanilla, pour in a mold and set for four hours in a pail packed with equal parts of ice and salt.

Changes may be made in various ways. You may beat the yolks of the eggs instead of the whites, pour the sugar over them, and then cook until the sugar mixture coats the spoon. Mix this with the cream and freeze. A third cup of fruit juice may be substituted for the water in the frosting and a half-cup of juice added to the cream before whipping.

Sherbets are so easily made, and so cooling, that it seems strange they are not served more frequently. The foundation of every sherbet is simple syrup, made by boiling one quart of water and two cups of sugar, for ten minutes. Some authorities say 20 minutes, but 10 is long enough. To the syrup add three-fourths of a cup of lemon juice and the juice of one orange for lemon ice, or sherbet. Two cups of any berries put through the puree strainer, for a sherbet named after the berry used. Orange sherbet calls for two cups of juice to the amount of syrup given above and grape sherbet for one pint of grape juice.

The popular Sundaes bought at the soda fountains are easily made at home. Add twice as much sugar to any chosen fruit as you would use at the table, and let stand three or four hours. Then pour over the cream.

For chocolate sundaes make a chocolate sauce by adding to two squares of melted chocolate, a cup of sugar, one and a half cups of boiling water, and two teaspoons of cornstarch dissolved in cold water. Cook, stirring constantly for five minutes, and flavor with vanilla when cold.

SUMMER LINGERIE.

Owing to the extensive use of the diaphanous waists it has become necessary for women having such garments to make the under waists, or corset covers, more elaborate than those used in the past. These are not difficult to make, nor do they require much or expensive material.

A dainty one is made of No. 22 ribbon, which is substantial and dainty in its colorings, and the garment can be made in a short time. A pretty combination is pink ribbon and light cream colored Valenciennes lace with

To make this you would need four and a half yards of No. 22 ribbon; five and a half yards of valenciennes insertion, one inch wide; four and a half yards of lace edging, matching insertion, one and a half inches wide; two and a half yards of beading, and two and a half yards of No. 1 ribbon.

Sewing the insertion to your ribbon in strips of one and a half yards in length. Use three strips of ribbon (No. 22), and then one of lace edging. Make a peplum of either the ribbon, or white or pink lawn. For the shoulder straps use a nine-inch length of beading and sew a row of lace edging along each edge, then tack them near the armhole, after shaping it out one inch deep and three and a half inches long.

To cover the joining in the front sew on a piece of beading and edge it with the lace. This will give a good finish and look well through the thin material.

Another waist is made of the popular shadow lace and crepe de chene, or satin, or the wide ribbon.

If the silk is used it will require one and a half yards of shadow lace four inches wide, preferably with an edge, half a yard of the silk, two yards of beading and three yards of lace edging, corresponding with the wide lace. Sew a four-inch strip of the lace to a two-inch strip of the silk, (or two-inch wide ribbon), with the edge up. It is well to sew this on the machine, as the strain might draw out the stitches if they were put in by hand. To the top add one row of the beading and the narrow lace edging. It is well to leave the edging off until the shoulder straps are tacked on so the edging can be sewed around the shoulder pieces at the same time. Lay this top part on a pattern and add to it the remainder of the silk needed to make the waist the proper length. Sew the lace on by stitching the silk on top and stitching on the right side, giving it the appearance of a small tuck.

Cut and fit a peplum and then attach to the top. The shoulder straps are made the same as those for the other waist, and the edging is not only sewed on the top of the strap, but all around the armhole. This is drawn up with the narrow ribbon (No. 1) run through the beading. It is used as a lining for a sheer waist, especially those made of lace or chiffon.

Under waists may also be made of the light colored chiffons, combined with lace. These are soft and pretty, and especially well adapted for large women.

HOME QUERIES.

Household Editor:—Will you please print in your Household Department, a recipe for dill pickles?—Mrs. L. B. W.

Soak the cucumbers in brine as for ordinary pickles. Then pack in crocks or fruit jars with a generous handful of dill leaves and cover with scalding vinegar.

Household Editor:—Can you give instructions for cleaning a white Panama hat, and changing the shape also? A Reader.

I do not think a Panama hat could be successfully cleaned and blocked at home. Send it to a professional cleaner.

Grange.

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

THE WASHTENAW ROUND-UP.

Washtenaw Pomona planned to make the June meeting a round-up affair in several respects. To begin with, State Master Ketcham was engaged to attend and Stony Creek Grange hall was the location. This place was selected for a specially fine session of Pomona largely in recognition of the splendid new growth which the Stony Creek Grange has made during the past few months. Fraternity and York Granges united with Stony Creek in entertaining, which feature is one of the newer innovations in these later day Pomona meetings, when autos bring distant Patrons from every quarter. It was a happy plan for this occasion, as it is proving to be in other counties, since even a small subordinate Grange can in this way assist in acting as hostess to Pomona, and that without the undue effort and tax that is imposed when such a Grange undertakes it alone.

Another co-operative feature of this day was the fact that Pomona was made one of the stops on the schedule of the alfalfa campaign which the county Grange had assisted the Ann Arbor Civic Association to arrange. Two autos, each bearing an M. A. C. man, were touring the county that week and these met at the Pomona and joined in the program. Professor Shoemith and Mr. Potts gave brief, pointed talks, answered questions which were raised upon them, tested soils and illustrated root systems and growths by samples which patrons had brought in. Another delightful exercise of the day was the exemplification of the first degree by a team from Ypsilanti Grange, led by Ennis R. Twist and Mrs. John Ableson, and some pretty drill work by a ladies' team from the same Grange, led by Mrs. D. V. Harris. The participants in this degree work deserve much credit for bringing forth such beautiful rendering of the ritual under the circumstances of the season and the fact that this Grange has not heretofore attempted to make ritualistic work a strong point.

The program culminated in an able and entertaining address by State Master Ketcham. Mr. Ketcham felt, and finely transmitted to his listeners, the strong currents of Grange history and association that met in the day. Here was a meeting of one of the earliest Pomonas in the state at the hall of one of the subordinates which was organized in 1873—that year of the great early rush into the Grange ranks. Among the 250 people present a large majority were members of Ypsilanti, another old, early subordinate. There were present men who were charter members and who had a part in the struggles and victories of that first section of Grange history. Master Ketcham recognized the contrast between the work which these patrons had had a part in—beginning, in fact, in the year in which he was born—and the work which now demands the best of patrons of today. He brought out forcibly that all the battles were not fought out then, but that conditions still exist which challenge the Grange to continued resistance and constructive effort.

It was a day to remember. It was a day that belongs to the new order of country life. It was a day, please providence, that belongs to a broader, fuller co-operation of country with city, and man with man, whatever be the label of his occupation.

JENNIE BUELL.

MADISON GRANGE ENTERTAINS PROMINENT GRANGER.

Nearly 250 persons, including representatives from 12 Granges in the county, and a large number of Adrian business and professional men, were present at a recent meeting of Madison Grange in honor of Charles M. Gardener, of Massachusetts, high priest of Demeter of the National Grange organization, and editor of the National Grange Monthly, who was guest of the day in Lenawee county. Other distinguished guests of the meeting were the only two living past masters of the Michigan State Grange, George B. Horton, of Fruit Ridge, and N. P. Hull, of Dimondale, both of whom spoke previous to the address of the evening by Mr. Gardener.

The attendance was large, and the meeting was called to order by the lecturer of the Grange, E. R. Illenden, who spoke of the unusual honor accorded to the Grange in entertaining its distinguished guests. Mr. Horton in a brief address, welcomed Mr. Gardener to Michigan and to Lenawee county in particular. Mr. Hull supplemented the welcome, telling of the Grange in New England and of the career of Mr. Gardener in the Order.

Adrian business men were especially strong in praise of Mr. Gardener, saying he was one of the strongest speakers they ever listened to, and expressing the wish that he might be heard here again. Many members of the Commerce Club attended the meeting and the president of the club, Dr. Gibson, endeavored to take the band out to the meeting, but was obliged to give up the plan because he was informed that it would be difficult to provide sufficient light for them to give the proposed outdoor concert.

At the close of the program the women of the Grange served ice cream and strawberries to the crowd.

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—Jas. N. McBride, Burton.
Vice-president—J. F. Rieman, Flint.
Secretary-Treasurer—Mrs. C. P. Johnson, Metamora.
Corresponding Secretary—Mrs. J. S. Brown, Howell.
Directors—Wm. T. Hill, Carson City; Jerry Spaulding, Belding; R. J. Robb, Mason; Joseph Harmon, Battle Creek; C. B. Scully, Almont; C. T. Hamline, Alma.

Associational Motto:

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

Associational Sentiment:

"The Farmer: He garners from the soil the primal wealth of nations."

FARMERS' CLUBS IN MARYLAND.

BY A COUNTRY PARSON.

(Continued from last week.)

Another fixed feature of the program is the invitation extended in open meeting to everybody who has anything for sale to name the article and the price. A member desiring to purchase any article is invited to state his wants. Buyers and sellers are thus brought together and left free to make their own bargains. This local advertising feature has proved itself a great help to the neighborhood. If requested, the Club will stand behind any deal made by a member, whether he is dealing with a fellow member or some reputable business house. This has led to some co-operative buying of seed potatoes and fertilizers by the members, as well as the selling of cabbage which is often planted after early potatoes and must be handled in carload lots.

This Club, with the assistance of two experts from the Department of Agriculture, successfully conducted a soil survey of the Rich Neck neighborhood, together with a series of tests to determine the relative value of liming the soil and of the use of acid phosphate as compared with basic slag. It was found that the best results are to be obtained by using acid phosphates rather than slag, and that the soil was not sufficiently acid to need much lime. Great emphasis

was placed upon the growing of nitrogen-producing cover crops and the plowing down of rye. The use of legumes and careful seed selection advocated by the Club proved to be the key to success.

(Continued next week.)

CLUB DISCUSSIONS.

The Farmer of the Future.—Mr. and Mrs. J. B. Delling entertained the Indianfields Farmers' Club at the June meeting, when President W. L. Eldridge presided. Mrs. Vinnie Eldridge discussed the subject, "Balanced Rations for the Farmer's Table;" Mrs. R. W. Black read a paper, "Denmark, a Land of Schools." M. Anger's subject was "Making Over Old Trees." Evelyn Eldridge gave a recitation. Most of those present took part in a discussion of the subject, "Judging by the Advance of the Past, what Kind of a Man will be the Farmer of the Future?" It was concluded that he would continue to be progressive. Several members of the Caro Business Men's Association were present and took part in the discussion. An interesting feature was the question box, which brought such valuable information as who had hay to be cut on shares, etc. After the program the company of 65 gathered on the beautiful lawn where the usual sumptuous luncheon was served under the capable direction of Mrs. Sadie Anger.—Mrs. Sadie Anger, Cor. Sec.

A Flag Day Program.—The June meeting of the Columbus Farmers' Club was held at Lake View, the pleasant home of Mr. and Mrs. Alphonzo Nash. President Willis Crego called the meeting to order and roll call was responded to by "When I would like to travel and why," most of the responses being in favor of our own country. Mr. Clarence Cook gave a most instructive paper on "Fruit trees and their diseases." Some of the program was devoted to "Flag Day" numbers. In speaking of "The Country Woman's Opportunity for Earning Money," and the raising of chickens for the same, a remedy for gapes was given: Dust the old hen with London purple and lock the chicks in the coop with her at night. The inhaling of the poison kills the parasite found in the throats of the chicks. This has been found very effective. Mr. and Mrs. Hill favored the company by singing "The Flag Shall Wave." After a pleasant social hour the supper was served on the lawn. The Club adjourned to meet in August at the home of Mr. and Mrs. Walter Reading.—Maude Smith, Reporter.

An Automobile Party.—The May meeting of the Somerset Club was held at the home of Mr. F. R. Smith, and coming on Decoration Day the attendance was small. It was decided to take their baskets of provisions and made up an auto party of three autos and started down the Chicago turnpike to enjoy the beautiful afternoon riding and viewing the picturesque scenery around Prospect Hill, which was pronounced grand, and later stopping in a shady schoolyard to enjoy a picnic lunch. Those participating pronounced it a very enjoyable affair.

The Club was entertained at the pleasant home of Miss M. L. Smith, on the afternoon of Saturday, June 27. Meeting was called to order by Mr. L. T. Smith, president pro tem. After the business, the topic, "Alfalfa as a Michigan Crop," was presented by Mr. G. B. Smith, telling of his own experience of raising and caring for and harvesting this most valuable crop, which is being so widely discussed by our farmers, and who are awakening to its great feeding qualities, by increasing the acreage very rapidly. The subject called out from several of the members many valuable suggestions as to their various methods of tillage, of soil preparation, and the handling of the crop, etc. Miss Emma Smith gave a very interesting description of that part of Wisconsin where she has been engaged in teaching during the past year; of the mining, logging, and farming, all so different from this part of our state. After a song by the young Misses Kathleen and Elizabeth Smith, "Where the River Shannon Flows," Rev. M. G. Vanbuskirk gave a short address on "The New Church" as it appeals to a young minister in this twentieth century, which he is working out very successfully in our church in Somerset, through the organization of the Men's Brotherhood Club, the Y. M. C. A., etc. A deep interest was manifest in his remarks. The closing to this pleasant afternoon was a "lullaby" sung by Kathleen and Elizabeth Smith. A potluck supper was then served and Club adjourned to meet with Mr. and Mrs. M. R. Morton, July 25.—Mrs. Z. E. White, Cor. Sec.

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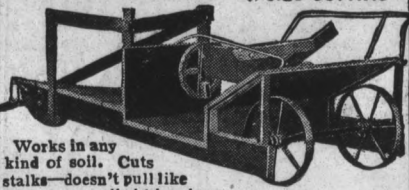
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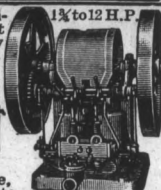
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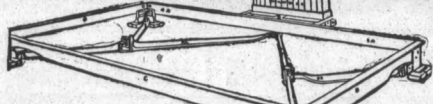
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Farm Commerce.

How Shall We Sell Our Apples?

BEING confronted with the problem of marketing several thousand barrels of apples, we naturally are looking over the whole list of ways that others have used, to find, if possible, the one best suited to our conditions and limitations. The fruit is developing fine, and promises to grade high, as the spraying has been done thoroughly and we shall thin the trees that are carrying more fruit than they can properly mature. Because of this and the past reputation of the fruit from this orchard, buyers have already approached us regarding the purchase of the crop.

Selling in "Bulk."

We have decided in a general way that we would not care to sell the crop in "bulk," i. e., for a stipulated price for the whole harvest, notwithstanding the fact that a friend sold the crop from an eight-acre orchard a year ago for \$4,000 and was entirely satisfied with the bargain. While our familiarity with the trees should enable us to judge closely what the harvest will probably be, and our attention to a variety of reports from the apple producing sections of the country should give us a good idea of the country's crop, we know that buyers, being experts in these matters, are likely to estimate the size of the crop and general conditions more accurately than ourselves and, therefore, able to offer only such a price as will give them a good bargain.

Some Advantages.

On the other hand, the plan of selling in bulk on the trees is convenient, does away with considerable worry and hard work on the part of the producer, and lets one know much earlier just how things are coming out. It has found many advocates in the important apple producing districts, but like the selling of fat stock by the head instead of by the pound, the plan is gradually being abandoned for the more accurate system of selling by the measure.

Of course, if we should be offered what we might consider a "long" price for the whole orchard we would not hesitate to make a contract to sell the apples upon the trees, but for the reasons above given we do not anticipate such an offer being made.

Country Town Trade.

Having come to the conclusion that the fruit must be sold by the barrel, or bushel, the next matter for consideration is, shall we endeavor to sell it in the large cities or in the small towns? The big commercial centers have frequently been over-worked in the matter of marketing, while the little towns over the country are not uncommonly without an adequate supply of some of the most common fruits. Now, experiments and practice have shown that in certain sections it is practical to go into the small town, advertise that on a certain day a load of apples will be delivered and sold direct from the car. The prices realized from sales made in this manner have generally been very satisfactory to the producer, usually netting more than where similar fruit was taken to the cities. But in such an arrangement there is much detail work, and where one has from 75 to 100 cars to sell, he would be confronted with a job that we do not feel like undertaking at the present time. We are confident, however, that when apple growers and dealers make efforts to extend the trade in this fruit, they will find the small country town a profitable field to work and that the above method will

serve as a cheap and satisfactory way of getting the fruit to town folks who desire it.

Distributing in Large Cities.

In the large cities there are several classes of buyers. Nowadays consumers are fast learning the habit of purchasing their products directly from the farmers and where it is convenient and inexpensive to get the apples delivered the returns are larger and the buyer is better satisfied than by the prevailing manner of distribution. Where one can do so we believe that the direct method should be tried.

Direct Marketing and Confidence.

But direct marketing must be built up. One cannot start such a trade and expect it to be successful immediately. The most enviable businesses that farmers have developed along this line are the result of many years of faithful service to patrons. Confidence is the foundation stone of direct dealing and confidence is not established in a moment. We must patiently learn the little things in connection with the growing, harvesting, packing, delivering and dealing before we can expect the maximum of results from the direct marketing system. This being true, and having the rental of our orchard for a period of only five years we are somewhat at a loss to know whether it will be policy for us to endeavor to build up a direct trade or not.

There is another matter that stands in the way of dealing directly, and that is financing the harvesting, packing and selling of the crop. It will require a dollar or more per barrel to perform these operations, and where the yield runs into the thousands of barrels one must have considerable resources at hand if he undertakes to sell direct. However, we are confident that where one has his own farm and can stand the marketing expense, the selling of the apples directly to consumers is an ideal way of handling them.

Selling to the Retailers.

A second class of buyers is the retail dealers. These may be peddlers, hucksters, grocers or fruit dealers. The advantage of selling to these is that they buy in larger quantities than the consumer. Many grocers with a large business can handle a considerable crop alone. With them the fruit usually sells upon its merit so that one need not hesitate to approach them, although he expects to be in the business for but a short time. And they will usually pay for the fruit as fast as it is delivered, thus helping to finance the handling of the crop. But one can hardly expect to receive from a retailer what he would from the consumer; however, since the consignments to the latter are usually smaller, the extra expense of finding more buyers and delivering more orders may overcome a portion of the difference in price.

Unless some buyer shall want the entire crop and is willing to pay well, we expect, not only to sell to retailers on the city markets, but we shall call upon several of the larger stores with the idea of making shipments to them. In the Detroit city markets the general practice of farmers is to market their seconds on the city markets and keep the best grades for fancy grocery trade. No doubt this practice is the result of experience and it would require direct evidence that some other method of dealing with retailers is better, to change the older growers to some other plan. So, if our crop goes to the consumer via the

retailer way we shall probably follow the same plan.

Shall we Dodge the Commission Men?

Then there are the commission men who have already made themselves known to us and desire to handle the crop on a commission basis. These men, as a class, have been accused of much wrongdoing, yet if it were not for the investment of so large a sum of money in picking, packing and delivering, we are of the opinion that we would be glad to allow some responsible commission firm to handle the crop. These men know the best trade and are in a position to get your fruit where it can be sold to the greatest advantage. The disposition of the public to deal around the commission man and the passage of strict laws regulating the commission business, make dealing through these houses less risky than it has been and gets a service that is likely to be satisfactory, providing the market is not glutted.

A Plan that Looks Good.

Finally, there is the apple buyer. He purchases the crop outright, either on the trees, delivered at the local railway station or siding, or in the city of his place of business. One buyer has already offered to do business on the following basis: If a price is agreed upon, then the buyer will send a man to the orchards at harvesting time who will inspect the fruit as it is packed. The barrels are then headed, drawn to the siding and loaded upon a car. As soon as the bill of lading is made out the buyer's representative writes a check for the full amount of fruit in the car. The buyer having the fruit inspected by his representative cannot make trouble later by saying the fruit did not hold up. The seller, too, has money coming in as the harvest progresses, so that he can take care of his expenses. The business is closed up as deliveries are made, enabling an earlier settlement than under most other systems. In all, it is a method to be desired and appeals to us as an ideal way of handling so large a crop, providing a satisfactory price can be agreed upon.

Crop and Market Notes.

Michigan.

Delta Co., June 28.—During May and the early part of June the weather was hot and dry, and on the 13th, 15th and 19th, we had heavy frosts, killing corn, beans and all tender vegetables and damaging oats, hay and fruits. Hay is short. We are now having plenty of rain. There is a fair acreage of potatoes planted, most of which were put in too late to be hit by the frost. Not much spraying done to fruit trees. Wool sold for 22c per lb; butter 25@30c; eggs 20@25c.

Saginaw Co., June 25.—Increased interest in Saginaw county in the development of pure-bred cattle. Unusually large acreage of corn, cabbage and potatoes. Fine weather for all spring planting, and especially fine for setting out cabbage plants. Wool brings 24@25c; butter-fat 27 1/2c; eggs 18c; dairy butter 20c. Good market for cattle; horses moving slowly. Silos and other improvements being added.

New York.

Genesee Co., June 23.—It has been very dry, up to a few days ago, and crops were much retarded in their growth; but we had a splendid rain and things are growing nicely. The canning factory commenced on peas today. About the usual acreage of spring crops were put in. Wheat is looking good; other crops suffered, it seems, more from dry weather. The prospects for apples and pears are good; very few peaches. Many sprayed after blossoming. Wool, according to grade, 21c; dairy butter 25c; creamery do., 30c; pork 10 1/2c; hogs 8c; fresh eggs 18c; spring chickens 25c lb; fowls 16c; lambs 16c; wheat \$1; oats 45c; potatoes 65c; beans \$1.90@3; loose hay \$11@13.

Niagara Co., June 25.—Hot sultry weather, which is ripening cherries fast. They will be an abundant crop. Everyone sprayed after blossoming, so quality should be good. Corn and potatoes coming up good, each farm having on an average, five acres. The meadows are looking fine; rye about

(Continued on page 34).

Poultry.

REASONS FOR THE TRAP NEST.

The "old fog" notions regarding the poultry business seem to be rapidly going the way of all other "back number" ideas. In these days of progress and new ideas in farming, the hen is coming into her own as a revenue producer and we do not have to look to the fancier and specialist to find the best stock. Some of the finest birds in the country are to be found on the farm and more and more each year, from a utility standpoint, is the farm bird the winner.

Discard "Star Boarders."

There are, of course, still many flocks of mongrel fowl and pure-breds of nondescript value. These could be materially improved by the use of trap nests in selecting the breeders. While the average farmer does not have the time or the inclination to pursue this method with a large flock, yet it is possible for everyone to use the traps enough to determine the winter layers and those which are worth their keep. There are too many "star boarders" in many flocks eating up poultry profits.

A good method of handling the flock to build up a laying strain is to select some of the best hens in the fall, as far as the eye can see, tag them or mark them in some way and give them a roomy pen by themselves. In this way it will be determined which are the winter layers and which ones produce eggs of fertility and vitality. Those individuals which do not show up well in the winter test should be discarded and others substituted and tried out, to keep up the desired number. In this way one may be able to set eggs from the type of fowl desired.

Build up Flock.

The above is an easy way to improve the flocks and well within the line of possibilities for almost any farmer. A more elaborate way, which some with more time and interest may desire to try, is the following out of this method all the year with their breeding stock. By doing this, many of the faults of the flock will be eliminated. While it does not always follow that the 250-egg hen will produce progeny of like productiveness, yet it is reasonable to suppose that her daughters will be better layers than the daughters of a 50-egg biddy. There are far too many of the latter. The trap nest will point out both kinds, and your breeders should be the best layers of the flock. The trap nest will also show which are the winter layers. Hatch the eggs from these birds if possible.

Habitual Producers of Infertile Eggs.

Some of the best pullets should be tried out each year with the traps. By this method it is possible to determine those which lay at the earliest age and those which lay the most before becoming broody. Future breeders should be selected from the ones which show up best in the early tests, provided later records confirm the first opinion. It often happens that a hen habitually produces infertile eggs. The trap nest shows her up so you need not use her eggs for hatching.

Common faults, like egg eating and the laying of uneven-shaped or under-sized eggs, may be detected and the guilty individuals removed from the flock. Undoubtedly the trap nest is an agency for profit if one has the time to attend to it properly. It also makes the hens tame and more contented with their lot. Tame hens are the layers, and the frequent handling which they get in removing them from the nests gets them accustomed to their keeper. It also has a tendency to discourage broodiness.

New Hamp. C. H. CHESLEY.

Saves Its Cost on any farm in one day's operation

THE AMERICAN BUNCHER is an attachment for any mowing machine and will save you enough seed in bunching your red top clover or alfalfa on 10 acres to easily pay its cost. Also bunches timothy, short oats, wheat, flax, and prairie grass. Catalogue free to your address.



POULTRY.

Pine Crest White Orpingtons—Bargain sale of breeding stock. Eggs one-half price after June 1st. MRS. WILLIS HUGH, Pine Crest Farm, Royal Oak, Michigan.

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

S. L. WYANDOTTE EGGS—From great laying strain of Blue Ribbon Birds. Satisfaction guaranteed. F. E. Cowdrey, Ithaca, Mich.

LILLIE FARMSTEAD POULTRY—B. P. Rocks, R. 1, Reda, and S. O. W. Leghorn eggs for sale. 15 for \$1.25 for \$1.50; 50 for \$2.50. COLON C. LILLIE, Coopersville, Mich.

SILVER, White and Golden Wyandottes. Eggs from Whites \$1.50 per 15, \$2.50 per 30. Silvers & Golden at catalog prices. Browning's Wyandotte Farm, Portland, Michigan.

Barred Rocks—All prize winners and breeding stock. Raised cheap for quick sale. Eggs and day old chicks half price. Write how many? Mary Thompson, Redford, Mich.

WHITE ORPINGTON SALE of 200 Eight Weeks old chicks. Raised cheap for quick sale. Eggs and day old chicks half price. Write how many? Mary Thompson, Redford, Mich.

DOGS.

Handsome Spaniel Pups—For sale, males, two months old only \$5. Most affectionate for children. Rougemont Farms, Detroit, Mich.

Hounds for hunting Fox, Coon, Skunk and Rabbits. **Shetland Pony Mares** Send 2c stamp. W. E. LECKY, Holmesville, Ohio.

Fox and Wolf Hounds

of the best English strain in America 40 years experience in breeding these fine hounds for my own sport. Save your pigs sheep and poultry. Send stamp for catalog.

T. B. HUDSPETH, Sibley, Jackson County, Mo.

Registered Percherons, BROOD MARES, FILLIES AND YOUNG STALLIONS at prices that will surprise you. L. C. HUNT & CO., Eaton Rapids, Michigan.

WANTED Ten registered Holstein heifers, under 2 years old. Address, C. E. WINTERS, Cressy, Michigan.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN ANGUS

Bull calves and yearlings ready for service. Sired by Louis of Viewpoint II. Closely related to five Grand Champions—Brother, Sister, Sire, Sire's Brother and Grand sire. Lucy's Prince Grand sire was Grand Champion at the International Stock Show for three years in succession. You are bound to get good calves from these bulls even with strongly dairy type grade cows.

GOE. B. SMITH & CO., ADDISON AND SOMERSET, MICHIGAN.

ABERDEEN-ANGUS

HERD FOUNDED IN 1900. Strains represented consist of Trojan Ericas, Blackbirds and Prides, only. Black Quality No. 1, a bull of rare individuality and merit heads the herd.

WOODCOTE STOCK FARM, Ionia, Mich.

GUERNSEYS Six bull calves from 3 to 18 months old. Advanced registry Dams. Sire Imp. Golden Noble Fifth. Herd tuberculosis tested. Very high class stock rock bottom prices. On farm of President Snyder of the Michigan Agricultural College. Address, E. P. NOBLE, Manager, R. F. D. No. 8, Lansing, Mich.

FOR SALE—2 Reg. Guernsey bulls 2 and 4 years old 2 bull calves best breeding. Pedigree off spring show. Berkshire swine either sex. JOHN EBELS, R. R. 10, Holland Michigan.

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

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

Upsland Herd—Offer bull calves, choice A. R. O. breeding, \$100 and up. COLE BROTHERS COMPANY, Ypsilanti, Michigan.

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

75 Buys large, nicely marked 9 months registered Holstein Bull, sired by \$300 son of John Hennerveld Lad and from A. R. O. Dam. RIVERVIEW FARM, R. No. 8, Vassar, Mich.

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

Holstein Cows I have on hand 100 high grade Heifers, age 6 mo. to 2 1/2 yrs. lots of quality and in good condition. Also a fine selection of full Matured cows. Arthur Birkholz, New Buffalo, Mich.

HOL-TEIN FRIESIAN CATTLE. Bulls for sale, the kind that will satisfy or money refunded. JONES & LUIZ, Oak Grove, Michigan.

Holsteins—11 High Grade Holstein heifers from Heavy Milkers Also Registered Bull. Price for the bunch \$1000 F. O. B. J. C. BARNEY, Coldwater, Mich.

GRADE HOLSTEIN COW Seven-eighths blood, 3 yrs.-old, due to freshen in Sept. W. B. READER, Howell, Michigan.

ESPANORE FARM, LANSING, MICH.

Register'd Holsteins

Bull Calves \$50 to \$200. An absolute guarantee with each purchase. CHASE S. OSBOEN, } Owners, L. M. HATCH. ADAM E. FERGUSON, } Supt.

BIGELOW'S HOLSTEIN FARMS Breedsville, Michigan. Breeder of high class Registered Holsteins.

"Top-Notch" Holsteins.

Choice bull calves from 2 to 8 mo. old, of fashionable breeding and from dams with official milk and butter records for sale at reasonable prices. MOPHERSON FARMS CO., Howell, Michigan.

A. R. O. HOLSTEIN COWS FOR SALE. 6 very fine A. R. O. cows, bred to Johanna Concordia Champion, and Duke Ormsby Pieterie DeKol. Price \$150. Service bulls and bull calves. Kindly write me just what you want. L. E. CONNELL, Fayette, Ohio.

\$50, DELIVERED. HOLSTEIN BULL CALF, Registered, A. R. O. dam. Sire 21 lb. Butter Bull. Half white. Large boned. Rougemont Farms, Detroit

MICHIGAN HOME AND TRAINING SCHOOL LAPEER, MICHIGAN. Breeder of High Grade Holstein Cattle. Lists and prices upon application.

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

JERSEYS—Bull calves nearly ready for service. Sired by Jacobus's Fairy Emmanon Bull. SMITH & PARKER, Howell, Michigan.

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

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

HILL CREST JERSEYS. I would sell two or three young cows. Come and see them. A herd of 20 to choose from. S. B. WATTLES, Troy, Michigan.

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

Jersey Bulls Yearling and two-year-old. Eligible to register. Splendid breeding. Price right. Address LEWIS RILEY, Metamora, Mich.

JERSEYS—Bull calves bred for production. Also cows and heifers. Brookwater Farm, R. F. D. No. 7, Ann Arbor, Mich.

JERSEYS—For list of stock for sale and Jersey facts write A. P. EDISON, Sec. M. J. C. O., 326 W. Bridge, Grand Rapids, Mich. If a breeder and a member of M. J. C. O. send list of stock for sale to the above.

Registered Holstein Bull—Past 7 months old, large fellow, soon ready for service. \$95 delivered, safe arrival guaranteed. Hobart W. Fay, Mason, Mich.

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

FOR SALE—14 Polled Durham & Shorthorn Bulls from 4 to 24 months old. C. CARLSON, LeRoy, Mich.

Shorthorn Bulls for Sale—One roan 3-yr-old weighing a ton. Price \$250. Also 3 calves 6 mo. old, from good milking cows. M. A. BRAX, Okemos, Mich.

DAIRY BRED SHORTHORNS of best Bates strains, all sold. J. B. HUMMEL, Mason, Michigan.

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

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

SHORTHORN CATTLE W. W. KNAPP, Howell, Michigan.

SHEEP.

IT PAYS TO BUY PURE BRED SHEEP OF PARSONS "The Shepherds of the East" I sell and ship everywhere and pay express charges. I will start one man in each town. Write for club offer and descriptive price list. Oxford, Shropshire, Ram-boulets and Felled-Delaines. PARSONS, Grand Ledge, Michigan R 1

HOGS.

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

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

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

CHESTER WHITES—The long type, prolific kind. A nice lot of spring pigs. MEADOW VIEW STOCK FARM, Holland, Michigan.

O. I. C's—Spring pigs, get my price before you buy elsewhere. OLOVER LEAF STOCK FARM, R. No. 1, Monroe, Michigan.

Large Type O. I. C's—Gilts bred for Sept. farrow. March and April pigs ready to ship. Will ship c.o.d. They are extra good ones. NEWMAN'S STOCK FARM, R. No. 1, Marlette, Mich.

O. I. C. March, April and May pigs; the big, growthy kind that always makes good. LEMUEL NICHOLS, R. F. D. No. 2, Lawrence, Mich.

O. I. C's—I HAVE A NICE LOT OF LAST FALL GILTS ON HAND. OTTO B. SCHULZE, One-half mile west of Depot, Nashville, Michigan.

O. I. C.—Take orders for spring pigs. One 8 mo. fine type Jersey Bull. Price reasonable. N. H. Weber, OakView Farm, Royal Oak, Michigan.

O. I. C. Choice pigs, two to four mos., the long bodied kind. One choice gilt bred for August. ALVIN V. HATT, Grass Lake, Michigan.

O. I. C.—Sows bred for June farrow. We are also taking orders for spring pigs. JOHN BERNER & SON, Grand Ledge, Michigan.

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

O. I. C.—gilts bred for June and July farrow. Also Spring pigs, Serviceable boars all sold. I pay express. G. F. ANDREWS, Dansville, Mich.

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

O. I. C's—Large boned, shipped on approval. Pairs not akin, registered free. J. W. HOWELL, Elsie, Michigan.

O. I. C's—Spring pigs, pairs and trios, not akin, from state fair winners. AVONDALE STOCK FARM, Wayne, Michigan.

O. I. C.—Boars six months old, spring pigs, gilts. Satisfaction guaranteed. A. R. GRAHAM, Flint, Michigan.

O. I. C. Swine—May I have the pleasure for a pair or trio, not akin, of April and May farrow. They are bred right. Satisfaction guaranteed. A. J. GORDEN, R. No. 2, Dor, Mich.

DUROC JERSEY BOARS

Spring Pigs and Yearling From Prize-Winning Stock

Special Prices for 30 Days.

Sale of Bred Sows August 4.

Write, or better still, come. Brookwater Farm, Ann Arbor, Mich., R. F. D. 7.

DUROC JERSEYS—Fall gilts of the large, heavy boned type, bred for Aug. and Sept. farrow. Also spring pigs, not akin. F. J. Drott, R. 1, Monroe, Mich.

DUROCS—A good growthy fall pig immuned and bred for August farrow will make you money. Give me your order now for May shipment. Also fall boars ready for service. KOPE KON FARM, Kinderhook, Michigan.

Fancy bred Duroc Jerseys—Boars & Gilts of spring & summer farrow. Good individuals at reasonable prices. John McNicoll, Station A, R. 4, Bay City, Mich.

KORN-EL STOCK FARM now offer Duroc Jersey pigs of either sex at reasonable prices. E. R. CORNELL, Howell, Michigan.

DUROC JERSEYS—A few fall pigs of CAREY U. EDMONDS, Hastings, Michigan.

DUROC JERSEYS—Spring pigs either sex at reasonable prices. S. O. STAHLMAN, Cherry Lawn Farm, R. 2, Shepherd, Mich.

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

Poland China Boar; Sows Bred, All of the Big Type. A. A. WOOD & SON, Saline, Michigan.

MY OH MY! What an Opportunity.

Starting May 1st, we are going to give to the farmers and breeders an opportunity to get started right in the breeding industry. We are going to give you a chance to get hold of foundation stock that will give you a nucleus for one of the finest and best herds in your community. We are going to show you as we have others, that you will have greater success with our big type

POLAND CHINAS

than with any other breed. We want to place at least one pig, or a pair in every community, to advertise our herd. We will give agency, if not already taken. If interested, write for our plan and prices. HILLCREST FARM, KALAMAZOO, MICH.

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

POLAND CHINA PIGS—From large Prolific stock. Shorthorn Bull Calves. Eggs \$1 per 15 from choice Barred Rocks. ROBERT NEVE, Elsen, Michigan.

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

BUTLER'S Big Boned Prolific Poland Chinas. Grow big, keep easy, mature early, ready for market at 6 months. Why? Because we've bred them that way for more than 20 years. We have 25 big boned sows for fall farrow. Buy one and make more money on your hogs. You can't get any better at any price. P. C. History Free. J. C. BUTLER, Portland, Mich.

30 Poland China Fall Pigs—Good ones from immune sows \$10 and \$15 each, while they last. Bred sow sale Feb. 27th, send your name for catalog if you want to buy Big Types with Quality. Wm. Waffle, Coldwater, Mich.

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

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

Yorkshire Swine We have a nice bunch of May pigs now ready to wean. Write us for description and prices. Ostrander Bros., Morley, Mich.

YORKSHIRES Choice boars, gilts and weanlings. Rightly priced. GUY J. DOTY, R. 2, Monroe, Michigan.

YORKSHIRES

The large, long-bodied, prolific kind. Gilts bred for July, August and September farrow. A choice lot of spring pigs, pairs and trios, not akin. Prices reasonable. W. C. COOK, R. 42, Ada, Michigan.

Lillie Farmstead Yorkshires

Open gilts and gilts bred for September farrow. Spring pigs either sex, pairs and trios not akin. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Michigan.

Markets.

GRAINS AND SEEDS.

July 7, 1914.

Wheat.—The present bullish tendency of the wheat market came as a surprise to the general public, as quotations are now above the lowest point reached a week ago, with future sales showing greater strength than nearby deliveries. There are two general reasons for the advance; the first is the discovery of black rust in the Dakotas and Minnesota. A few days of weather favorable to the development of this disease would do great damage to the spring wheat crop in those states. The second reason is the strong demand for wheat from Europe. Russia was the only European country that promised a better than normal crop, but of late the weather has been against the growers there, thus reducing the prospect of supplies from that quarter. Because of this, and the disturbed political situation in Austria and England, the foreign demand has been of unusual volume. The tendency of the market here will depend, of course, very largely upon the development of the black rust in the spring wheat section. One year ago the price of No. 2 red wheat was 98¢ per bushel. Quotations for the past week are:

	No. 2 Red.	No. 1 White.	Sept.
Wednesday	86½	86	80
Thursday	87	86½	80½
Friday	87½	87	81
Saturday	87½	87	81½
Monday	87½	87	81½
Tuesday	87½	87	81½

Chicago, (July 7).—No. 2 red, 81c; July 79½c; Sept., 79½c per bu.

Corn.—Crop reports are generally favorable to the growth of the corn plant throughout the central states, and prices have eased off as a consequence. There is also a poor cash demand, particularly in the southwest where recent rains have saved the crop from drouth damage. On the other hand, there is a liberal decrease in the visible supply. One year ago No. 3 corn was quoted at 61c per bu. Quotations for the week are:

	No. 2 Mixed.	No. 2 Yellow.
Wednesday	70½	72
Thursday	70½	72
Friday	70½	72
Saturday	70	71½
Monday	70	71½
Tuesday	70	71½

Chicago, (July 7).—No. 2 yellow 67½c; No. 2 white 66½c; Sept., 64c.

Oats.—In most sections this cereal is developing under favorable conditions, and promises to be a fair crop. In a few places, however, damage has been done by a lack of moisture so that ideal weather will not repair the loss. Prices are a fraction lower. One year ago standard oats were quoted at 44c per bushel. Quotations for the week are:

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

Chicago, (July 7).—No. 3 white oats 36c; No. 3 white 35½c; Sept., 35½c.

Rye.—This cereal is lower. No. 2 is quoted at 63c per bushel; July 56c.

Cloverseed.—Prime spot \$8.25; October and December \$8.70; prime alkali \$10.

Beans.—Demand shows improvement and prices are 5c higher. Quotations: Immediate and prompt shipment at \$1.90; July \$1.95 per bu. Chicago reports quiet trade. Pea beans hand-picked, choice are lower at \$2.10 @ 2.15; common \$1.95 @ 2; red kidneys, choice \$3.20 @ 3.25.

Alfalfa Seed.—Prime spot \$8.35 per bushel.

Timothy Seed.—Prime spot \$2.65 per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs. as follows. Best patent \$5.30; second \$4.90; straight \$4.50; spring patent \$5.10; rye flour \$4.40 per bbl.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$23; standard middlings \$28; fine middlings \$30; coarse middlings \$31; cracked corn \$32; corn and oat chop \$28.50 per ton.

Hay.—Prices off 50c more. Carlots on track at Detroit are: No. 1 timothy \$16 @ 16.50; standard \$15 @ 15.50; No. 2, \$13 @ 14; light mixed \$15 @ 15.50; No. 1 mixed, \$13 @ 13.50; No. 1 clover \$12.50 @ 13 per ton.

New York.—Market easy. No. 1

timothy \$21; No. 3 to No. 2, \$16 @ 20. Chicago.—Best grades are firm. Choice timothy quoted at \$17.50 @ 18.50 per ton; No. 1, \$15 @ 16; No. 2, \$12.50 @ 13.

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

DAIRY AND POULTRY PRODUCTS.

Butter.—Market steady, with prices ½c lower. Extra creamery 26c per lb; firsts 25c; dairy 18c; packing stock 16c.

Chicago.—Market is firm, with last week's prices well maintained. Extra creamery 26½c; extra firsts 25 @ 25½c; firsts 22½ @ 24c; seconds 20 @ 21½c; packing stock 17½ @ 18c.

Elgin.—Market is firm at 26c per lb, which is ½c lower than last week.

New York.—The market is steady. Prices are slightly lower. Creamery extras 26½ @ 27c; firsts 24½ @ 26c; seconds 22 @ 24c; packing stock 18½c.

Eggs.—Market is active, with fresh stock selling at 20c per dozen.

Chicago.—Market is steady for fine stock but for poor it is irregular. Much is received in heated condition. Miscellaneous lots, cases included 15 @ 18c per dozen; ordinary firsts 17½ @ 17¾c; firsts 18½ @ 18¾c.

New York.—Market steady. Prices unchanged. Fresh gathered extras 23 @ 25c; firsts 22 @ 22½c per dozen.

Poultry.—Market is firm and quiet with little change in prices. Broilers are slightly lower. Live—Broilers 22 @ 24c per lb; hens 14 @ 16½c.

Chicago.—The market is firm and the trading good. Fowls are ½c lower; springs also lower. Quotations on live are: Fowls 15c; spring chickens, 1½ @ 2 lbs. weight, 20c; spring ducks, fair to good size, 16c; guinea hens, per dozen, \$3.50.

FRUITS AND VEGETABLES.

Fruits.—Gooseberries \$1 @ 1.10 per case; cherries, sour \$1.25 per case; sweet \$1.50 per case; blackberries \$1.75 @ 2 per case; raspberries, black \$1.75 @ 2 per case; red \$6.50 @ 7 per bushel.

Chicago.—Gooseberries \$1 @ 1.10 per case; cherries, sour \$1.25 @ 1.50 per case; sweet \$1 @ 1.50 per case; currants \$1.15 @ 1.25 per case; raspberries, red \$1.50 @ 1.75 per 24-pt. case; black \$1.25 @ 2 per 16-qt. case.

Vegetables.—Home-grown cabbage, \$1.75 @ 2 per bbl; new beets 25c doz.

GRAND RAPIDS.

Raspberries and cherries are leaders on the fruit side of the city market this week. Sour cherries brought \$1 per half bushel Monday but will probably go somewhat lower before the end of the week. In raspberries the blacks have a range of \$1.50 @ 2, with reds 25 @ 50c per crate higher. The crop of berries is large and prices may go lower. On the vegetable side the new potatoes are bringing \$2 per bushel with offerings rather light as yet. The egg market is half a cent higher. Quotations being 18½ @ 19c. Dairy butter is steady. In grains the bean market is lifeless, with quotations for white pea at \$1.65 to farmers. The bean acreage in Michigan is large and the crop is promising. New hay is bringing \$10 @ 14 on the market.

DETROIT EASTERN MARKET.

Trade is rapidly on the increase at this market, and prices are generally being well maintained. Black raspberries are now coming in and are selling around \$6 per bushel. The average price for cherries on Tuesday morning was \$2.75 per bushel. A few tomatoes are coming forward and growers are receiving up to \$8 per bushel. Beets are plentiful at three bunches for 10c; radishes nine bunches for 25c; onions 10c per bunch; celery 40c per bunch; cabbage firm at \$1 per bushel; carrots three bunches for 10c. Loose hay is moving slowly at \$16 @ 18 per ton.

THE LIVE STOCK MARKETS.

Buffalo.

July 7, 1914.

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

Cattle.—Receipts 1500; best dry-fed grades 10 @ 15c higher; others steady. Choice to prime shipping steers \$9.20 @ 9.60; fair to good \$8.75 @ 9; plain and coarse \$8.35 @ 8.50; choice to prime handy steers \$8.50 @ 8.75; fair to good \$8.15 @ 8.25; light common \$7.50 @ 7.75; yearlings \$8.25 @ 9; prime fat heifers \$8 @ 8.20; good butcher heifers \$7.75 @ 9; light butcher heifers \$7 @ 7.75; best fat cows \$7 @ 7.25; good butcher cows \$6 @ 6.75; canners and cutters \$3.90 @ 5; best feeders \$7.25 @ 7.50; good feeders \$6.75 @ 7; best stockers \$6.25 @ 6.75; common to good \$5.50 @ 6; best bulls \$6.75 @ 7.50; good killing bulls \$6.25 @ 6.75; stock and

medium bulls \$5 @ 6; milkers and springers \$35 @ 90.

Hogs.—Receipts 15,000; market 10 @ 15c higher; heavy and yorkers \$8.90; pigs \$8.75 @ 8.85.

Sheep and Lambs.—Receipts 3,000; market steady; top lambs \$9 @ 9.25; yearlings \$7 @ 8; wethers \$6.25 @ 6.75; ewes \$4.25 @ 5.50.

Calves.—Receipts 600; strong; tops \$11.50; fair to good \$8.50 @ 9.50; grassers \$5 @ 7.

Chicago.

July 6, 1914.

Cattle. Hogs. Sheep. Received today... 11,000 19,000 9,000 Same day 1913... 10,433 34,761 17,969 Last week... 39,686 116,404 86,647 Same wk 1913... 31,514 90,162 60,985

As last Saturday was the Fourth of July and a national holiday, little stock of any kind was loaded for the market, so that today's offerings were extraordinarily small for Monday, and everything sold higher, cattle moving up largely 10 @ 15c, while hogs advanced about a dime, going at \$8.05 @ 8.65, the highest prices seen for many weeks. Hogs received last week averaged 241 lbs. Sheep and lambs averaged 15 @ 25c higher, lambs advancing most, with prime spring lambs taken at \$9.25.

Cattle were in much improved general demand last week, so far as desirable kinds were concerned, and these sold at further small advances, but grassy descriptions were extremely bad sellers, this being especially true of cows and heifers. The bulk of the beef steers went at \$8.25 @ 9.15, the choicer class of heavy beefs going at \$9.15 @ 9.45 and common to fair light steers at \$7.50 @ 8.35, with early sales of inferior lots as low as \$7.25. A medium class of steers brought \$8.40 @ 8.75, and lots that classed as good brought \$8.80 @ 9.10. Butchering cows and heifers met with an outlet at \$4.80 @ 9 for ordinary to fancy lots, a sale being made of 59 yearling heifers that averaged 757 lbs. at \$9, but very few sales were made as high as \$8.25. While the best lots sold extremely well, other females were off 40 @ 50c, and sales took place \$1 below the high point this season. Canners sold at \$3.25 @ 4.10, cutters at \$4.15 @ 4.75 and bulls at \$5 @ 7.75. Yearlings were good sellers only when fat, a good to prime class going at \$8.75 @ 9.45, with sales all the way down to \$8 @ 8.25 for the commoner lots. The market was fairly animated at times for stockers and feeders at a generally lower scale of prices, while on other days trade was slow. Sales ranged all the way from \$5.50 @ 7.75, with a few selling up to \$8. Most sales were of light and medium weights. Stock cows and heifers had a limited sale at \$5 @ 6.75, while stock steer calves brought \$7 @ 7.75. Calves sold at an extreme range of \$5 @ 9.75, with a good call for good to prime light vealers. Milkers and springers sold in a small way on the basis of \$60 @ 95 for fair to prime cows, other cows going to killers. Prospects for good beef cattle are good, providing supplies are not forced too liberally on the market.

Hogs have been in much stronger position for a week past than they were several weeks ago, closing sales last Friday being at \$7.95 @ 8.55, comparing with \$8 @ 8.45 a week earlier. Prime heavy shipping lots that averaged around 260 to 305 lbs. sold around the highest figures, with prime light lots selling 7½ @ 10c below the top, while pigs closed at \$7.50 @ 8.25. Recent receipts of hogs have averaged 238 lbs., comparing with 242 lbs. a year ago. The official statement of stocks of provisions in Chicago warehouses makes the total foot up 108,420,613 lbs., comparing with 107,007,267 lbs. a month ago and 119,414,084 lbs. a year ago. Fresh meat requirements are very large, and there is no apparent danger of too many hogs being marketed this season.

Spring lambs arrived in much increased volume last week. Naturally, the market weakened, despite a fairly large general demand. Spring lambs sold down to \$6.50 @ 9 for poor to prime, and it will be remembered that only a short time ago the best lots went at \$9.75 @ 10. Ewes brought \$2.75 @ 5; wethers \$4 @ 6; bucks \$3 @ 3.75 and yearlings \$5.40 @ 7.40. Yearlings were called lambs prior to July 1. Breeding ewes brought \$4.75 @ 5.50.

CROP AND MARKET NOTES.

(Continued from page 32). ready to cut; hay looks good; berries look like a heavy crop. Butter 21c; eggs.

Ohio.

Clermont Co., June 30.—We are having very cold weather the last of June. Wheat is being harvested, and promises a good yield. Oats not so good, but corn is making a good showing, especially in the river bottoms. Potatoes will yield about a half crop. Hay is harvesting a good crop. Peas, beans and onions hurt by dry weather.

er; small amounts are raised in this county. Tomatoes and cabbage—the principal vegetable crops—are badly in need of rain. Early apples are looking well; late apples promise a good crop. Other fruits are a small crop. Young chickens selling at 26 @ 32c per lb; butter 19c; eggs 18c; calves 10c.

Ashtabula Co., June 30.—It has been very dry and hot until this week. A cold wave is now on. Apples will be a fair crop, but there are no peaches or raspberries. More than the usual acreage of potatoes planted. Corn is looking fairly well. No buckwheat sown yet; hay is looking fine but about two weeks later than usual. Wool sold at 20 @ 25c; old potatoes \$1; eggs 20c; butter 18c; hay dealers all cleaned up and not buying; hogs 7½ @ 8c; choice cattle 8½ @ 9c; good to choice wethers \$6 @ 6.10; veals 5½ @ 9c; springers \$60 @ 75.

Indiana.

Laporte Co., June 22.—Very hot and dry. Corn is growing fast and the fields are generally clean. Late varieties of potatoes were planted last week. Alfalfa cut two tons for the first crop. Wheat good average yield; oats an average crop to date; grass and pasture are good. Cowpeas are coming up; they were planted late. Cows are doing well.

Elkhart Co., June 22.—We have been having two weeks of dry weather, causing the hay to remain short. Wheat will soon be ready to cut. The usual amount of corn and potatoes being planted. Farmers are sowing a large amount of cowpeas; fruit trees are badly affected with the scale; not much spraying being done. Wool 22c; eggs 18c; butter 20 @ 30c; corn 70c; wheat 90c; hogs 7½c; oats 48c; potatoes \$1.

Wayne Co., June 23.—Have had extremely dry weather all summer; no rain since June 4, until yesterday, the 22nd. The spring seeding of clover has suffered much and some has been killed already. The clover hay crop is about all harvested and was only half a crop as a result of the drouth. Wheat is ripening fast, will be ready to cut in a very few days. The prospect is good for a big yield. Oats are heading, but it is very short; looks like the crop would be almost a failure. A large acreage of corn was planted and most of it is doing well and is large enough for the time of year, and is free from weeds.

Nebraska.

Cass Co., June 19.—Have had heavy rains, and the ground is wet and the roads bad. Most of the first cutting of alfalfa damaged. Farmers rushed with their work. Wheat commencing to ripen and oats are headed; corn making a rapid growth. Wheat 78c; oats 38c; corn 65c; hogs \$7.60; hay \$7; old potatoes \$1.40 per bu; eggs 15c; butter 20c.

Wisconsin.

Wausahara Co., June 22.—Excessive rains have drowned out crops on low land, but just the thing for pastures and meadows. Last year's seeding of clover and timothy will be a bumper crop. The milk flow was never better; cheese factories booming, as they net farmers from 25 @ 35c more per 100 lbs. of milk than creameries. About the usual acreage of corn and potatoes, with perhaps a slight increase of the latter. Potato market closed last week at 50c; eggs 16c; apple trees not as well loaded with fruit as last year.

Pennsylvania.

Bucks Co., June 22.—We are having a dry spell; did not have much rain since early in June; most of the corn was planted the latter part of June. It was very warm, with no rain, and it got so dry that plowing stopped, but the average corn and potatoes and garden truck was planted; hay short and about half a crop; oats very short and heading; most of the meadow hay is made; grain fields look good, except some wheat fields, which look thin and short on account of the dry weather and the Hessian fly. It is very cold at present; some corn looks as if it had a light frost; the markets are about the same, except eggs are going up, being 24c; butter 30c; corn 84c; oats 54c.

In the Chicago cattle market buyers have been discriminating strongly against grassy offerings, and this applies especially to cows. For several weeks prime heavy beefs have been undergoing slow advances because of their increasing scarcity, and cattle that promise to dress well sell much more readily than others.

A firm of Montana ranchmen, a short time ago, purchased a tract of 1,400 acres of land in Wisconsin, with the object of using it for grazing and

EGGS WANTED.

Persons having strictly fresh eggs they desire to sell to consumers direct should send their names and addresses to the Farm Commerce Dept., Michigan Farmer, Detroit, Mich.

THIS IS THE LAST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

July 9, 1914.

Cattle.

Receipts 1052. Cow stuff and bulls steady; all other grades active and 15 @25c higher than last week.

We quote: Best dry-fed steers \$8.75 @9; best handy weight butcher steers \$8.25@8.50; mixed steers and heifers \$7.75@8.25; handy light butchers \$6.75 @7.75; light butchers \$6.50@7; best cows \$6@6.50; butcher cows \$5.25@5.75; common cows \$4.50@5.50; canners \$3.50@4.25; best heavy bulls \$7; bologna bulls \$6@6.50; stock bulls \$5 @5.75; feeders \$7@8; stockers \$6.25 @7; milkers and springers \$40@80.

Bishop, B. & H. sold Mich. B. Co. 13 butchers av 871 at \$7, 1 bull wgh 1110 at \$6; to Bresnahan 3 cows av 960 at \$4.75, 4 do av 820 at \$4.75, 21 stockers av 570 at \$6.30; to Hammond, S. & Co. 2 bulls av 1325 at \$6.50, 25 steers av 1056 at \$8.75; to Sullivan P. Co. 12 cows av 920 at \$6; to Thompson Bros. 1 steer wgh 1200 at \$7.50, 4 cows av 1100 at \$6.25, 1 do wgh 940 at \$6, 14 steers av 900 at \$7.65, 9 butchers av 950 at \$5.75; to Sullivan P. Co. 18 cows av 959 at \$6, 11 steers av 865 at \$7.50, 1 cow wgh 1030 at \$6, 2 do av 825 at \$6, 2 steers av 910 at \$7, 1 bull wgh 1220 at \$7; to Mason B. Co. 2 cows av 685 at \$5.50; to Parker, W. & Co. 22 steers av 990 at \$8; to Kull 2 heifers av 765 at \$5.60; to Mich. B. Co. 15 butchers av 717 at \$7, 2 cows av 825 at \$6.25, 6 steers av 783 at \$7.75, 2 cows av 875 at \$6, 3 heifers av 723 at \$6.75, 1 cow wgh 1140 at \$6.50, 1 steer wgh 1170 at \$8.25, 2 cows av 950 at \$5.25, 1 steer wgh 830 at \$7.25; to Dennis 13 stockers av 469 at \$6.25; to Sullivan P. Co. 3 steers av 1010 at \$8.25, 2 cows av 1015 at \$6, 2 steers av 1050 at \$7.60; to Snow 25 stockers av 675 at \$7.

Roe Com. Co. sold Mich. B. Co. 20 steers av 1050 at \$8.25; to Sullivan P. Co. 21 do av 984 at \$8.10; to Parker, W. & Co. 1 cow wgh 960 at \$4; to Kamman B. Co. 7 steers av 897 at \$6.75, 3 bulls av 807 at \$6.75; to Newton B. Co. 17 cows av 987 at \$6.75, 1 steer wgh 910 at \$8, 1 canner wgh 960 at \$4.25; to Spicer 1 stocker wgh 650 at \$4.25.

Haley & M. sold Sullivan P. Co. 6 cows av 1056 at \$6, 4 do av 985 at \$6; to Thompson Bros. 12 steers av 872 at \$7.50, 1 cow wgh 1060 at \$5.75, 1 do wgh 1010 at \$4.15, 1 steer wgh 570 at \$7, 9 do av 916 at \$7.40; to Breitenbeck 1 cow wgh 1100 at \$6; to Mich. B. Co. 4 do av 930 at \$5.10, 1 steer wgh 780 at \$7.85, 2 do av 620 at \$6.75, 3 bulls av 1117 at \$6.40; to Sullivan P. Co. 8 butchers av 824 at \$7.35, 3 cows av 1090 at \$6.25; to Schlischer 12 steers av 1020 at \$8; to Davenport 9 stockers av 550 at \$6.50.

Spicer & R. sold Kull 15 butchers av 813 at \$7; to Breitenbeck 15 do av 754 at \$6.50; to Sullivan P. Co. 18 steers av 975 at \$8.20, 4 cows av 1052 at \$6, 6 steers av 888 at \$7.75, 1 cow wgh 770 at \$5, 2 do av 980 at \$6.25; 1 do wgh 950 at \$5.75, 2 steers av 935 at \$8; to Bresnahan 7 heifers av 724 at \$6.65; to Mich. B. Co. 2 cows av 985 at \$6.25, 2 do av 750 at \$6; to Sullivan P. Co. 23 steers av 810 at \$7.40, 3 do av 817 at \$7.60.

Veal Cales.

Receipts 484. Market 25@50c higher. Best \$11@11.50; others \$8@10.

Bishop, B. & H. sold Mich. B. Co. 3 av 150 at \$10.50, 1 wgh 260 at \$7.50, 9 av 160 at \$10.50; to Hammond, S. & Co. 4 av 190 at \$7.50, 5 av 165 at \$11, 5 av 150 at \$10.75, 6 av 155 at \$10.75, 2 av 105 at \$9.50, 2 av 160 at \$10.50, 2 av 195 at \$8, 4 av 155 at \$10.50, 1 wgh 140 at \$9, 9 av 145 at \$10.50, 3 av 170 at \$11, 9 av 170 at \$11, 1 wgh 250 at \$6.50, 4 av 155 at \$10.75; to Parker, W. & Co. 4 av 150 at \$11; to Nagle P. Co. 18 av 180 at \$11, 23 av 160 at \$11; to Parker, W. & Co. 6 av 150 at \$11; to Nagle P. Co. 8 av 160 at \$11; to Parker, W. & Co. 10 av 166 at \$11.25; to Rattkowsky 2 av 190 at \$11.50; to Kull 3 av 190 at \$11.25, 1 wgh 280 at \$11.

Sheep and Lambs.

Receipts 1477. Market active and steady. Best lambs \$9@9.25; fair do \$8.50@9; light to common do, \$7@8; yearlings \$7@7.50; fair to good sheep \$5@5.50; culls and common \$3@3.50.

Roe Com. Co. sold Sullivan P. Co. 28 lambs av 80 at \$9, 40 sheep av 110 at \$4.25, 27 do av 90 at \$4.50.

Haley & M. sold Parker, W. & Co. 34 lambs av 65 at \$9, 7 do av 75 at \$9.25, 8 do av 65 at \$9, 4 sheep av 130 at \$4; to Mich. B. Co. 15 sheep av 105 at \$4.75.

Spicer & R. sold Young 22 lambs av 60 at \$9, 25 yearlings av 70 at \$7.50; to Mich. B. Co. 7 sheep av 85 at \$5; to Parker, W. & Co. 5 do av 108 at \$4.50, 27 lambs av 80 at \$9.

Hogs.

Receipts 2507. None sold up to noon. Prospects 5@10c higher, or \$8.75@8.80.

Bishop, B. & H. sold Parker, W. & Co. 1010 av 200 at \$8.80, 315 av 190 at \$8.75.

Spicer & R. sold Hammond, S. & Co. 150 av 200 at \$8.80.

Haley & M. sold same 310 av 200 at \$8.80.

Roe Com. Co. sold Sullivan P. Co. 167 av 200 at \$8.80.

Friday's Market.

July 3, 1914.

Cattle.

Receipts this week 1434; last week 973; market steady. Best heavy steers \$8.50@9; best handy weight butcher steers \$8@8.50; mixed steers and heifers \$7.50@8; handy light butchers \$6.75@7.50; light butchers \$6.50@6.75; best cows \$6@6.50; butcher cows \$5.25@5.75; common cows \$4.50 @5; canners \$3@4.25; best heavy bulls \$6.75@7; bologna bulls \$6@6.25; stock bulls \$5@5.50; feeders \$6.75@7.75; stockers \$6.25@7; milkers and springers \$40@75.

Sheep and Lambs.

Receipts this week 1678; last week 1758; market steady. Best lambs \$9.25; fair do \$7.50@8; light to common do \$6@7; yearlings \$7.50; fair to good sheep \$4.75@5.50; culls and common \$3@3.50.

Hogs.

Receipts this week 5739; last week 7542; market steady. Pigs \$8.35; others \$8.50.

Veterinary.

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

Chronic Looseness of Bowels.—I have a five-year-old mare whose bowels are always in a chronic state of looseness, even when fed binding food. She is a hard keeper. R. G., Gagetown, Mich.—Careful feeding and watering will do more towards controlling her excessive bowel action than drugs. Her teeth may need floating. Avoid giving her much water too soon after feeding her grain. Drive slow. Give her ½ oz. of ground ginger, 2 drs. powdered catechu and a dessertspoonful of prepared chalk at a dose in feed two or three times a day.

Enlarged Throat Glands.—Cough.—I have a valuable 11-year-old cow which has a hard dry cough of 12 months' standing, and the glands of throat are considerably swollen. She breathes with some difficulty and I forgot to mention that she had an abscess form on knee. J. H., East Jordan, Mich.—Give her 1 dr. potassium iodide, 1 dr. fluid extract nux vomica and 1 dr. powdered opium at a dose in feed three times a day. Apply one part turpentine, one part aqua ammonia and three parts olive oil to throat every day or two.

Wolf Teeth.—Obstructed Breathing.—I have a three-year-old colt that has wolf teeth; should I have them pulled? I also have a four-year-old cow that had a sick spell last fall and I gave her a cough mixture prepared from formula taken from Michigan Farmer and it helped her. She has not given much milk lately and when breathing snores some, but is in good flesh. F. R. M., Fennville, Mich.—When wolf teeth are left in they seldom do any harm; however, they serve no well known purpose; therefore, in my practice I always extract them or pry them out with a guarded chisel. Give her 1 oz. hypo-sulphite soda at a dose in feed three times a day. Perhaps she has a nasal polypus or some mechanical obstruction in head, causing her to snore.

Umbilical Hernia.—Colt two and a half months old has puffy swelling at navel which our Vet. prescribed a blister for, stating that he thought it would finally drive it away, but it is no better. C. M., Sears, Mich.—If the swelling is puffy and soft and an opening can be felt in abdomen, then it is a case of navel hernia, but if the bunch is hard, it is a tumor and should be cut out, either now or next autumn. If it is hernia and colt is in no pain, leave it alone until cool weather, then employ a competent Vet. to operate.

Chronic Udder Trouble.—For the past two years one of my cows has had udder trouble before calving. This summer her milk is not right, because it leaves a slimy deposit in separator bowl. She runs in pasture but is stabled to be milked. Mrs. W. A. C., Almont, Mich.—Give your cow 1 oz. doses of hypo-sulphite soda and 2 drs. salicylic acid at a dose in feed twice a day and she will perhaps get all right.

Bacillary White Diarrhea.—A week ago last Friday I cooped 175 chicks, 100 of them are now dead, dying of

bowel trouble. At the first their droppings are white, then change to yellow. For the past 12 years I have had similar poultry troubles and last summer I lost over 300. They are sick but a short time. Mrs. I. N. O., Ithaca, Mich.—This infection can frequently be traced to the hen that laid the egg; her ovaries being diseased and consequently the yokes of eggs; however, bacteria which causes this trouble doubtless lurks about your premises, hence the necessity of thorough disinfection and the use of antiseptics. The free use of carbolic acid lotion, a two, three, four or five per cent should be used for spraying and sprinkling. Besides, fresh whitewash should be applied to inside of coop, by dissolving some powdered sulphate of iron in their drinking water might help the young chicks, but it is very doubtful.

Loss of Appetite.—Shrinkage in the Milk Flow.—Cow lost appetite soon after dropping calf May 23; treated her for constipation and she recovered. Since then her appetite has again failed and milk flow shrunk to almost nothing. B. N., Cedarville, Mich.—Mix together equal parts ground ginger, gentian, bicarbonate soda and salt and give her two tablespoonfuls at a dose three times a day. It is doubtful if she will prove profitable for dairy purposes.

Sore feet.—I have a cow whose hoofs are about one-half shed off and her feet are tender. Can anything be done that will hasten growth of horn? L. R., Grass Lake, Mich.—Apply one part coal tar disinfectant and 19 parts lanolin to hoofs twice a day. If the feet are in a suppurative condition, arrange a tub or bucket and saturate them in a ten per cent solution of coal tar disinfectant twice a day.

Sprained Leg.—Some time ago I wrote and asked what to do for a four-year-old mare which fell in pasture and sprained her ankle; you prescribed a blister and rest; we followed your directions and she got well, but as soon as turned out she went lame, but is now getting over it. What do you advise us to do? J. S. P., Attica, Mich.—If not lame, light work and generous feed is perhaps what should be done with her. Apply

Dropsy.—I have pigs three months old that eat well up to a short time before death; some of them cough, and when opened they are full of water. These pigs are fed all the warm skim-milk and wheat middlings, also some corn, that they care for. Every one of them that have died showed the same symptoms. G. B., Coopersville, Mich.—Change their feed and give each pig 5 grs. powdered nitrate of potash at a dose twice a day; this medicine will act on their kidneys and carry fluid out of body. It is needless for me to say that they should be kept in a clean place, their feed troughs thoroughly cleaned and they should have exercise and plenty of green food.

Partial Loss of Power.—I have a large sow just weaning her pigs, which one week ago began to lose use of hind quarters. This ailment came on just two days after I turned her into rape pasture; she eats and drinks as well as ever. If she was fatted and killed, would her lard be fit for use? O. S. S., Ypsilanti, Mich.—Your sow has been over-fed on fat producing food. A limited supply of oats, some grass or skim-milk is all she needs. If her bowels are costive, give her castor oil or epsom salts. If fatted I do not believe lard made from her fat would be unfit for use. Give her 15 grs. ground nux vomica and 20 grs. powdered nitrate of potash at a dose in feed two or three times a day. Keep her in a cool place.

Don't You Believe It! It's a Lie!

Let me tell you the tremendous value of the Gasoline Engine and all its accessories. A joke. On account of the fact that we are making this country on Engines, Manure Spreaders, Cream Separators, etc., kinds of reports about Galloway in there vain effort and attempt to head off the trouble are getting.

It certainly is laughable and amusing to say the least, the stories which many of our good customers and friends both write us and tell us about when they come to see us. I have nothing against any middleman, dealer, agent or jobber, nor can I help it because I don't believe in their system of distribution, but I do think some of them show very little judgment and cast a reflection on the intelligence of some of my former customers when they try to get away with some of the yarns they are spreading and have been spreading for the last seven or eight years.

When they tell you

Galloway don't have any factory—don't you believe it! It's a lie! When they tell you Galloway has gone out of business—don't you believe it! It's a lie! When they tell you Galloway don't make his own Gasoline Engines, Manure Spreaders, Cream Separators and other implements—don't you believe it! It's a lie! When they tell you there is no such man as Galloway—don't you believe it! It's a lie! Come to Waterloo and I'll show you around. When they tell you their goods are better than ours—that Galloway goods are cheap and not worth the money—don't you believe it! It's a lie! And I'll give

\$10,000 REWARD

to anyone who can prove their statements. All I ask you to do with my goods is try them before you pay for them, and if I can't give you the biggest value and the best Gasoline Engine, Manure Spreader or Cream Separator for the money that you ever saw, regardless of make or kind, then it's time enough to try the other fellow's goods. But remember I am with you. I am a farmer myself—was raised on a farm—went into business, learned the true trade conditions, and then came out and resolved to sell goods direct. The result is, I am saving the farmers of this country millions upon millions of dollars, and I repeat what I have often said in conversation with many of my farmer friends all over the country. It is simply this: If every farmer in the United States realized the truth and realized the tremendous values we are giving in the lines we are offering we could not build goods fast enough if our factories were ten times as large.

What is it you need?



A Gasoline Engine? A Manure Spreader? A Cream Separator? If you need any of these articles or other implements which I sell, let me quote you a price and send you my descriptive catalog and give you my 5 new selling plans, cash or credit, and let you try the goods at my expense. W. M. GALLOWAY, Pres. The W. M. GALLOWAY COMPANY 187 Galloway Station - Waterloo, Iowa

LIVE POULTRY, BROILERS, FRUITS, POTATOES, ONIONS, ETC.

Let us handle your poultry, fruits, farm products. Our 25 years in the same store assures your satisfactory results. CHAS. W. RUDD & SON, Detroit, Michigan.

HAY Ship your Hay to Pittsburgh and to Daniel McCaffrey Sons Company Pittsburgh, Pa.

Ref.—any bank or Mercantile Agency.

Griggs, Fuller & Co., Wholesale Commission House, Detroit. Want your apples, potatoes, poultry and rabbits. Quick returns.

FARMERS—We are paying good premium above the Official Detroit Market for new-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.

HOME MADE ACETYLENE Safest Light and Cooking Fuel Insurance records prove it

Insurance records show this—the misuse and abuse of city gas, kerosene and gasoline caused over 100,000 fires in six months. While the misuse and abuse of acetylene caused but four fires during the same period. And there are over a quarter of a million COUNTRY-HOME-ACETYLENE-PLANTS in use. A mighty fine showing for acetylene.

A hundred feet of acetylene makes more light than a thousand feet of city gas. For this reason acetylene light burners have small openings—so small that not enough gas could escape from an open burner—in a whole day—to do any harm whatever.

Also, acetylene gas is not poisonous to breathe—you would suffer no harm in sleeping under an open unlighted burner. Also, acetylene burns with no odor whatever—but acetylene from an unlighted burner has a strong pungent odor which immediately attracts attention.

Also, acetylene lights are permanently fastened to walls and ceilings—they cannot be tipped over.

Also, the acetylene producing stone, UNION CARBIDE, won't burn and can't explode.

For these reasons insurance authorities have pronounced acetylene safer than illuminants it is displacing.

Our advertising literature tells all about the best way to make acetylene for country home use, and how it is used extensively for cooking as well as lighting. Just address—

Union Carbide Sales Company, Dept. 13

42nd St. Building, NEW YORK, or Peoples Gas Bldg., CHICAGO, ILL.

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M. H. HUNT & SON, Box 525 LANSING, MICH.

Practical Science.

LABORATORY REPORT.

How to Prevent the Manure from Heating.

How can I keep horse manure from heating and wasting? I know that the most economical way is to haul it to the field and plow it under, but we can't do it.

Charlevoix Co. C. S.

In order to keep animal manures from heating, and in this way becoming wasted and dissipated, they should be scattered or spread over a considerable space. It is a good idea to reserve in the barnyard quite a large space for this purpose, then when the stable work is done in the morning the manure is either wheeled out or carried out with a carrier, taking pains to scatter it over quite a space. In this way the heating of the manure will be avoided. The old method, which may be called, perhaps, the easiest way, and also the most shiftless way, was to throw the manure outside of the barn on a heap where, in consequence it would naturally get much heated and fire-killed. In this way practically the total value of the manure is destroyed.

Using the Babcock Tester.

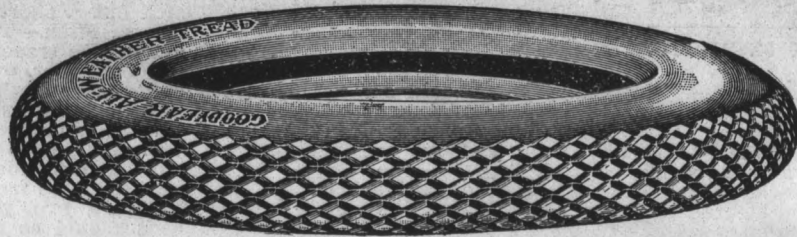
We have a Babcock milk and cream tester, but no directions for using same. Can you give me directions for testing milk and cream, or tell me where I can procure them?

Midland Co. A. N. R.

In using the Babcock milk tester it is a pretty good idea for the beginner to stick quite closely to the directions, these may be briefly outlined as follows:

Thoroughly mix the sample of milk to be tested, preferably by pouring from one dish into another several times. If the milk is fresh, mixing will be easy, but if it has stood for some time one should pour it back and forth a number of times to be sure that the milk is thoroughly mixed. By use of the pipette, (the glass tube with a bulb in the center), deliver into the Babcock test bottle exactly 17.6 cubic centimeters of milk. This is done by filling the pipette by suction, with milk a little above the top mark, and then by putting the finger over the top and allowing the milk to drop out of the bottom until the mark is reached. A little pressure on the top of the glass tube or pipette will interrupt the flow until the tube can be introduced into the neck of the test bottle. Now measure into the same test bottle approximately the same amount of sulphuric acid (oil of vitriol, this may be purchased at any drug store). As oil of vitriol is very dangerous to handle it would be well to get a small beaker or glass dish from which it can be poured, and then by using the pipette, determine the amount of acid by filling the pipette with water and emptying it into the glass dish, then make a mark on the dish to indicate what amount of acid will be needed. When the acid is mixed with the milk in the test bottle, it will become very hot. The bottle is then shaken by the neck in a cautious manner until the milk and the acid are thoroughly combined and the milk completely dissolved. The color should be a rich brown. Put the bottle in the Babcock tester and rotate it for about four minutes. Then add hot water up to the neck of the bottle. Shake the contents of the bottle again and rotate for a couple of minutes more in the tester. Now add more water until it rises up in the neck of the test bottle. Rotate once more in the tester and the fat will have risen in a compact mass in the neck of the test bottle where it may be read with ease.

A Missouri stockman marketed in Chicago recently 42 head of horned corn-fed steers that averaged 946 lbs. at \$8 per 100 lbs. They were imported last winter from Mexico.



These Costly Tires Now Undersell Nearly Every Make

The tables are turned. Goodyear No-Rim-Cut tires—once the costly tires—now sell below most others. There are 16 makes sold at higher prices—up to one-half higher.

Now these tires which rule Tiredom—the leading tires of the world—save you on first cost as well as on last cost. It is more important than ever to get them.

Reasons for Cost

No-Rim-Cut tires for a long time cost one-fifth more than other standard tires. That was due to four great features—costly features—found in no other tire.

They ended rim-cutting by a method we control. It has saved tire users millions.

They saved blow-outs—all the blow-outs due to wrinkled fabric. They did this through our "On-Air" cure—an extra process which costs us \$1,500 per day.

They reduced loose tread danger by 60 per cent through a patent method.

Our All-Weather tread gave to users a tough, double-thick anti-skid. A flat tread, as smooth as a plain tread, but grasping wet roads with deep, sharp, resistless grips.

No other tire at any price has ever offered these four features.

GOOD YEAR
AKRON, OHIO
No-Rim-Cut Tires
With All-Weather Treads or Smooth

Reasons for Price

The reasons for present Goodyear prices are just these:

New factories, new equipment, new machinery, new efficiency. A multiplied output, now the largest in the world. It has cut overhead cost 24 per cent and labor cost 25 per cent.

A modest profit. Last year our profit averaged only 6½ per cent.

No-Rim-Cut tires at present prices are even better than they were at high prices. They excel other tires just as far, and in just as many ways.

Up to now men bought these tires because of their hidden economies. They bought millions of them because of their known mileage records.

Now you have in addition this visible economy—this saving which comes at the start. You have a price from \$5 to \$15 lower than many other tires.

Any dealer will supply you Goodyear tires at Goodyear prices. If he is out, he will get them from our nearest branch.

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Makes big capacity possible with your regular farm engine of 6 to 12 h. p. No silos too high. Self-feed table. Absolutely safe. Simple, strong, durable. Cuts evenly. Lasts for many years. Write for Blizzard catalog and get all the facts.

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