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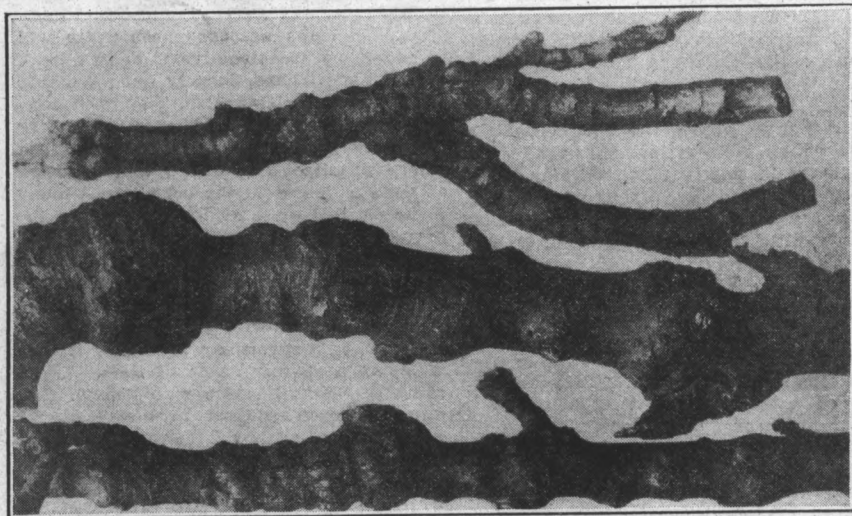
## Crown Gall and Its Control.

**C**ROWN gall is one of the diseases found in orchards, vineyards, and berry patches that is a source of considerable trouble. It is known under many names, such as "galls," "tumors," "root knot," "hairy root," "woolly root," etc. The disease is caused by a parasitic bacteria which seems to be well distributed over the country. Not only are all of the common trees subject to it, but berries, grape vines, and many herbaceous plants and forest trees as well.

The disease appears in many forms, the most common of which is the hard knot. The characteristic appearance of these is shown in the accompanying photograph of the limbs of apple. These galls

In fact, young rapidly growing trees are more subject to attack than older trees. The wounds caused by root grafting and budding, and injuries caused by cultivation and borers offer a favorable place for the entrance of the germs. With grapes it is supposed that cracks due to frost afford opportunity for the entrance of the germs. Berries are usually set so close together that the disease will spread from one to another. While the soil carries the germs from season to season, the great source of infection, especially for apples, is in the nursery.

Upon seedling and root grafted apple trees in the nursery we find the hairy root condition and galls of a soft nature.



Specimens Showing Effect of Crown Gall on Apple Twigs.

at first are small, nearly spherical masses of succulent tissue. They usually appear early in the year and continue to grow throughout the season. Their growth is slow and the galls often live for many years. As they reach maturity they develop a bark-like covering which becomes dark brown, uneven, and warty in appearance. They are easily seen in the tree when the leaves are off as enlargements of the limbs. The soft galls is the form commonly found on the cane fruits and many herbaceous plants. They grow rapidly and form a fleshy outgrowth or enlargement of the stem. This will usually decay and slough off at the end of the season, and then reappear the following spring.

Another form of the disease and one which is very important to the fruit grower is the hairy root. This is found very commonly on peaches in the state and to some extent on apples. In this form there are no enlargements as in the galls, but instead a series of small succulent fleshy rootlets appearing at right angles to the main roots. When dry these rootlets shrink up and become hairy in appearance. They are often so numerous as to completely cover the roots over. It is usually hard to identify trees infested with this form of the disease. They become sickly in appearance and in some cases die, when no apparent cause can be seen unless the trees are dug up.

### A Bacterial Disease.

It is only recently that the real cause of crown gall has been discovered as a small bacterium. This organism enters the cells of the wood and stimulates them to an abnormal growth which results in the enlargement of the branches. Often a number of suckers spring up from the gall, forming a "witches broom." The bacteria will live in the soil as well as in the wood, and hence young trees planted in an old orchard may become infected.

On older trees the hard galls are found, both on aerial branches and on the roots. Tumors are often found around the crown of the trees. The trouble causes a great deal of loss to nurserymen, due to laws forbidding the sale of infected trees. For this reason some dealers will cut out the galls and sell the trees, which galls usually reappear later.

There have been many discussions as to the advisability of setting out trees affected with the disease. Careful investigation by the government workers has shown that it is not so serious as is generally supposed. Some trees die while others will entirely recover. The same is true when only healthy trees are planted out; some will develop the gall and die. In an experiment in which 235 diseased trees were set out, 30 died, 73 entirely recovered, 63 were diseased with the hard form, and 69 developed the hairy root.

It is always advisable to set out healthy trees when possible to obtain them, and the orchardist should see that his nursery stock is not affected before he plants it out. If an old tree which is affected appears healthy and profitable it is not recommended to remove it or even to cut out the galls, as greater injury usually results than is caused by the presence of the galls. If the tree is unprofitable the galls should be cut out and the surface of the wounds painted over and disinfected. If this does not improve the condition cut the entire tree out.

### In the Case of Stone Fruits.

Of stone fruits the peach is the one most seriously affected. The root system of peach trees is often so affected that the trees cannot be established. Never plant out a galled peach tree. Remove the badly affected trees as soon as the trouble is noticed. Cherries and other stone fruits have been known to be attacked but never seriously. Cases of re-

covery are also known with the stone fruits the same as with the apples.

Raspberries and blackberries are often very badly affected. The galls usually appear on the same ground where affected plants have been grown. Most all of the grapes are subject to the disease also. It appears here in two forms, as a root gall, and as a cane gall. The effect of the galls is to stunt the growth of the vines. The leaves are frequently smaller and show poor color. There are no resistant varieties of grapes but a few precautions should be exercised. Secure cuttings where possible from vineyards free from the disease; plant deep so as to escape the frost cracks as much as possible. It is best for the grower to propagate his own stock and thus avoid possibility of introducing crown gall for an infected district.

### General Treatment.

The following general directions are given for the control of crown gall:

1. In order to keep the disease under control trees and small fruits should never be grown on land previously infected.

2. Neither root nor scion used in root grafting should come from stock having galls or hairy root.

3. All nursery stock should be carefully inspected and all trees showing evidence of crown gall and hairy root or the previous cutting off of the galls should be discarded. Growers should never plant a diseased tree.

4. Trees which are found to be affected with crown gall in the orchard should be allowed to remain as long as they are profitable, but if unprofitable should be removed. Recovery sometimes results from the complete removal of the galls, followed by disinfection of the wounds.

5. On account of the great difference in susceptibility of different varieties, resistant varieties should be used where possible to obtain such.

Ingham Co.

A. C. MASON.

## Blossoming of the Fruit Trees

Blossoming time is the time of promise, of hope and of joy. It is mating time for the fruit tree; blossoming is the expression of love in the vegetable kingdom. The harvests are the fruits of love of this kingdom, and the farmer deals with cold cash, as well as with appreciation, in the results of inanimate love.

Blossoming time is a time of anticipation and anxiety to the fruit grower. He feels hopeful and glad of the promise shown but he does not know whether the results will be fruit or failure. If failure, hopes will be blasted as well as blossoms.

The movement of the mercury in the thermometer tube becomes a thing of especial interest at this time, and the first thing that one is likely to do upon tumbling out of bed in the morning is to look out of the window for signs of frost. A thin crust of ice on the pail of water outside makes the heart sink and spoils the appetite for breakfast.

Foresight is about the only cure for frost we know of. Orchards should be set in places that are frostless at this time of the year. High up, on the cool side of a hill, is the best place. Orchard heating is not generally satisfactory, as yet, in this part of the country, and usually the opportunities for use are not often enough to warrant an investment of forty or more dollars per acre for an outfit.

Blossoming time is a time of birth and millions of fruits are either born or blasted. As with all processes of birth it is a critical time, and as with all critical times pessimism seems to be predomi-

nant. More crops have been ruined by tongue than temperature ever killed. Don't borrow trouble, it is bad for yourself and the fruit-growing business. Even if you have a regular crop failure, smile against your will and soon you will will to smile, and just be regular farmer for a year instead of a fruit-grower.

There are many things which will cause a blossom to blast. Many we do not understand. Frost is probably the most certain agency of destruction. But, even so, investigations show that while in full blossom our fruit trees are able to stand a degree or two of frost without injury. Swelling buds stand as much as a dozen degrees of frost.

Moisture also has much to do with the setting of the blossoms. Continued rains are not good, although experiments show that the blossoms will stand quite a little rain and still pollinize. Last season well illustrated that. We had rainy weather during blossoming time and still there was a heavy setting of fruit. If the air contains considerable moisture there is not near the liability of frosts. The moisture will take the form of dew and will serve as a sort of protection. Spraying trees with water for frost protection showed well the protective value of moisture. Plowing at blossoming time has served as protection on account of evaporation of moisture from the soil.

Moisture will also delay and prolong the blossoming period. So, during rainy periods the blossoming time is long and a few good days in between rains will give opportunity for fertilization. Places near bodies of water are less susceptible



Many Elements are Present at Blossoming Time to Influence for Better or Worse.



to frost than places not having water influence, other things being equal, because of the delay in blossoming and also to the protective feature of moisture. Tests in continued spraying of only parts of trees showed that the blossoms of the unsprayed parts were much more advanced than the other.

So moisture and temperature play the most important part in the matter of weather and the setting of blossoms.

Another thing which must be given consideration with reference to the setting of fruit is the matter of self-fertility. In setting out an orchard this must be given careful attention. Some varieties of fruit, although bi-sexual, have not strongly enough developed anthers, or male organs, to properly fertilize themselves. In other cases, as has been found in the case of some grapes, they are so strongly self-fertile that they are self-fertilized before blossoming. Pistillate varieties will, of course, have to be set with some strongly self-fertile variety before they bear any fruit.

Quite often we find varieties, especially of cherries and plums, and sometimes of pear, which blossom heavily but seldom set to fruit. This is a case of over-production of blossoms and the blossoms are not strong enough for proper fertilization and therefore no fruit. Trimming out quite a few of the fruit spurs in spring will often remedy this trouble by giving the tree fewer, but stronger, blossoms to support.

Blossoming time affords an excellent opportunity for the study and teaching of one of the most important and essential questions of life—that of sex. Few little boys or girls whose rapidly developing minds get their first impression of the sex question from the apple blossom and in such surroundings as the blossoming apple orchard will go wrong. It would do many older minds a lot of good to relearn the sex subject under such conditions.

Van Buren Co. FRANK A. WILKEN.

#### SEEDING RYE TO PERMANENT PASTURE.

##### What Grasses to Use.

I have a field sowed to rye that I wish to seed to permanent pasture and would like to know what variety of seed to sow. Part of this field is light sand and part clay in a run-down condition. What is the difference in feeding value of millet and clover hay?

Calhoun Co.

W. F. R.

In making a permanent pasture one wants to figure on having some grasses that will last for a long time. These are usually grasses that take quite a little while to get established, consequently it pays to mix in clover and timothy with these grasses. Clover and timothy come quickly and furnish pasture. By the time they are useless then the other grasses like orchard grass and meadow fescue, and red-top will be ready to take their place. Hence I would advise that you sow a mixture of red clover, some alfalfa, and timothy together with orchard grass, meadow fescue, tall meadow oat grass and red-top. Now some of these grass seeds are very chaffy or light and it would be almost impossible to get a good seeding in the rye. The ground ought to be specially prepared, the seed sown and harrowed in. Consequently if I wanted to get this rye field to permanent pasture I would harvest the rye and then plow it and fit it and get it in good condition and seed in August when you can harrow the ground and cover this seed. If you sow orchard grass seed, for instance, on top of the rye, much of it never gets to the ground and you will lose a great deal of your seed.

##### Millet Compared with Clover Hay.

Millet is very much like timothy hay so far as the feeding value is concerned, and not at all like clover hay. If millet is cut when it ought to be cut, in blossom, is well cured, it makes a very good hay substitute but it is not as good as clover hay because it is not so rich in protein.

COLON C. LILLIE.

#### ERADICATING BURDOCK.

Burdock is one of the most pestiferous weeds the farmer has to deal with around the dwellings. It also flourishes on vacant village and city lots, highways and unused streets. In fact, burdock grows readily in all soils and it has a strong vitality. No other weed is more certain to get every seed germinated and the plants thrive wherever the seeds fall. No other growth ever crowds them out, for they are equipped by nature to hold their own in any struggle for survival with other plant life.

With proper attention, however, no weed can more easily be stamped out. While the plants are very young every one can be destroyed by carefully digging them up with hoe or spade. But after they attain a good growth it is necessary to cut the roots out below the ground with a sharp shovel or spade. The necessity of this is due to the fact for several inches below the crown the burdock root is covered with eyes or buds which will send forth new stocks if the root is cut off above. This is the reason that oftentimes the efforts to destroy the mature plants with spade fail; they are not cut off low enough.

Care should be taken to let no burdock plants go to seed. Should any go to seed, select some damp day and pull and pile all seed-stalks, then burn them as soon as they are dry enough. When dead ripe the burrs will drop off, and the seeds will fly out and scatter everywhere, hence the plants should be cut or pulled only while the burrs are damp. Burdock seed will lie dormant in the soil for several years, so when waging warfare on a patch of this weed care must be taken each spring that no new plants from the seeds already in the soil are allowed to mature. The work of destroying the young seedlings is comparatively easy if one will but give it due attention in time, and after three or four seasons a patch can be completely eradicated.

Indiana.

W. F. PURDUE.

#### DRAINING A MOUND SPRING.

In reading J. B.'s trouble and failure in draining his sticky, yellow hardpan, would say J. B. has the right idea about filling his ditch with surface soil, providing it is porous enough. Now, many people know there are certain kinds of soil that water will not readily penetrate and will remain on top of a perfectly laid tile drain. We had an experience in draining a mound spring 13 years ago after many failures, some by professional ditchers. In our last attempt we found the main head and dug a hole five feet in diameter and set a sewer crock over the flow, sealing the top after piping to the barnyard, some 200 feet. The bottom of the sewer crock was set on coarse gravel and the hole filled with gravel. This spring furnishes one gallon of water every minute and never stops running. But still this ground was not properly drained, growing nothing but wild grass and water rushes.

We then put a tile drain on each side of the mound soil just as J. B. describes, and pulling about a foot of the most porous soil of this ditch on the tile and putting a dam below. Next morning we were surprised to find the water running over the dam. The tile was again taken up and a thin coat of gravel laid on the ditch bottom, the tile again laid true to line and the ditch filled with gravel. This proved a success and no one would ever know there was a spring there. On springy, fine grained, sticky muck we have seen water stand on top of tile drains and by refilling with sand and gravel have seen it prove a success. In draining clay soil the lowest depressions are filled with gravel and sand for a few rods. If J. B. tries this let him speak about it. This will also apply to Mr. J. B.'s neighbor who has the frog pond mentioned.

Lapeer Co.

W. H. HURD.

#### A QUESTION IN PLANT NUTRITION.

We have been repeatedly told that commercial fertilizer will give the plant a quick start without regard to its analysis and we have been told that the different elements in commercial fertilizer, namely, nitrogen, phosphoric acid and potash are beneficial in this way; nitrogen to make a luxuriant growth of rich green; phosphoric acid to help the filling and maturing of the grain, and the potash to stiffen the straw. Now the question is, what part or kind of fertilizer or plant food does the plant use first in starting?

Sanilac Co.

W. D. I.

I confess that I do not know how to answer this question, and I doubt if anybody could give a correct answer to it. As a matter of fact, the plant gets its first food from the seed itself. Nature has stored up in the seed a sufficient amount of plant food to give the embryo plant a start until it begins to send its tiny rootlets into the soil and its stalk above ground. There is enough plant food in the seed to start the plant. Then the roots begin to reach into the soil after further or more plant food. Now the question is, as I understand it, after the roots get into the soil, which one of the three essential elements of plant food,

nitrogen, phosphoric acid, and potash, does the plant use first? I doubt if anybody knows exactly. I think it needs all three of them in a certain proportion, just the same as an animal needs both protein and carbohydrates in a certain proportion to make growth. We know full well that if any one of these is left out of the soil the plant cannot live. Some might argue that nitrogen producing the growth of foliage was the most important, and yet this cannot be said because the plant needs all three of these essential elements and must have them. We are told by those who have experimented most upon this question that phosphoric acid seems to have a wonderful effect in starting the young plant. Just why this is so nobody knows, but soluble phosphoric acid put where the young roots can get hold of it seems to greatly invigorate the young plant, and yet I do not believe that it uses this element first, but it uses all of them and must have them all in a certain definite proportion. A lack of a sufficient amount of any one of them limits the growth of the plant. A sufficient amount of all three produces maximum growth.

COLON C. LILLIE.

#### FARM NOTES.

##### Fertilizing Corn in the Hill.

In the issue of April 26, I noticed an inquiry in regard to fertilizing corn in the hill. Can you advise me about how much of the 2-8-4 fertilizer should be used to the hill, and the proper time to apply it? Soil is in fairly fertile condition and lighter spots have been covered with well rotted manure. Would I get enough better yield to make it profitable? About how many tons would be needed for 10 acres, planted 3 ft. 8 in. each way?

Barry Co.

J. D. S.

The amount of fertilizer which can safely be used in the hill for corn depends not a little upon weather conditions at the time the corn is planted. When the ground is rather dry at corn planting time any considerable amount of fertilizer applied in the hill, especially fertilizer as rich in potash as the one mentioned in this inquiry, is likely to injure the germinating quality of the seed. For some years the writer has practiced using a little fertilizer in the hill, distributing same through the fertilizer attachment of the check-row planter.

The fertilizer feeds ordinarily used apply the fertilizer at the rate of about 125 pounds per acre in checks three feet eight inches each way. Two years ago one of these feeds got broken and a larger one was substituted in one of the fertilizer boxes, thus, of course, applying more fertilizer on one row than on the other. When the corn came up we found that there was a fairly good stand in each alternate two rows planted with the lesser amount of fertilizer applied in the hills, while the stand in the rows where the larger amount was applied was comparatively poor, necessitating liberal replanting to get a good stand. In this case the ground was rather dry, which no doubt contributed to the injury of the germinating quality of the seed. Thus, under average conditions, it is the writer's opinion that it is not profitable to apply more than 100 to 125 pounds per acre in this manner, using the balance of the fertilizer needed by applying same broadcast upon the corn field. There is no doubt that a little fertilizer applied in the hill will give the plants a quicker and more vigorous start, but it is questionable whether the yield will be materially increased over the yield secured where the fertilizer is distributed broadcast. This year we shall use about 500 pounds of fertilizer per acre on corn ground which has received a light application of stable manure. All things considered, we believe as good results will be secured by this method.

##### Sowing Alfalfa with Wheat.

I have about six acres of corn stubble which I have manured and plowed. I intend to top-dress with well rotted manure and work thoroughly until the middle of August, when I shall sow one bushel of wheat, and also about six quarts of alfalfa seed to the acre. When conditions are right I shall cut the superfluous wheat growth and let lay in the hope that it may protect the alfalfa plant from the severe winter weather.

Kent Co.

T. B. P.

While this plan might be a successful one, it does not appear to the writer as being a logical one. If the alfalfa is sown early enough to get a sufficient growth to withstand the winter it would come on and make a good crop the following spring, provided it had no competition in its occupation of the ground. In a favorable season it is probable that alfalfa sown in the middle of August would get

a sufficient growth to withstand the winter fairly well. The writer got a perfect stand of alfalfa sown in corn the middle of July last year, which withstood the winter perfectly and is now making a very vigorous growth and bids fair to make an excellent first crop of hay this year.

If sown in wheat, the wheat would probably live over, even if treated as suggested in this inquiry and make a considerable growth the following spring, thus competing with the alfalfa for plant food and moisture and probably decreasing the yield of hay which would be secured the first season. It seems a better plan to work the ground well until the last of June or the first of July, then to sow alfalfa, in which case it should get sufficient growth to afford it protection over winter. However, the proposed experiment would be an interesting one, and in the event of its trial we should like a report of its success for publication in the Michigan Farmer, to the end that all available knowledge upon this important point may be disseminated among Michigan farmers.

##### Cutworms.

Which is the best method to pursue to avoid trouble with cutworms on heavy timothy and June grass sod intended for corn, to plow as soon as possible and harrow occasionally before planting, or to wait as late as possible and then plow and plant the corn immediately?

Ionia, Co.

H. W. W.

In the writer's opinion, where an old sod is to be plowed for corn that serious trouble with cutworms will be more successfully avoided by letting the grass get a good start then plowing and fitting and planting as soon as possible, the theory being that the cutworms will continue to feed upon the grass roots until the corn gets something of a start. Whether or not this theory is well grounded in fact is, however, not an easy question to answer. In some seasons these pests will be much more destructive than in others, depending, perhaps, largely upon weather conditions. Perhaps also, one good reason for the holding of the above theory by many good farmers is the fact that where practice of plowing and planting at once is followed, the corn is not likely to be planted quite as early as where the ground is plowed early and is ready to be planted whenever weather conditions are favorable, and that for this reason the corn germinates more quickly and makes a more rapid growth, getting beyond the stage when cutworms will injure it seriously in a shorter space of time. There are also many farmers who believe that an application of salt is beneficial for keeping the cutworms in check. As a general proposition, however, it is better to practice a short rotation of crops which will readily obviate the danger of the destructive ravages of these insects.

##### The Proper Depth to Plow for Corn.

What is the proper depth to plow sod for corn? I have plowed eight inches and raised good corn. Would it be better to plow shallow?

Van Buren Co.

O. C.

This question is one upon which farmers will not agree for the reason that the season has much to do with the success of shallow plowing. As a general proposition, however, it is better to plow comparatively deep on a deep soil which has been previously plowed to a depth of eight inches or more.

#### SECURING TOMATO FOUNDATION STOCK—A CORRECTION.

I have just noticed in The Farmer of February 8, a report of a talk on tomato culture, which I gave last winter, which I can't let go without a correction which seems to me very important. I am reported as advising the sowing separately of the seed of each of the 10 best plants, making a trial planting in parallel rows of about 100 plants from each of these samples, and I am reported as saying "select and save seed from the most promising row and you will have a foundation stock." I am thus made to advise the doing just what I tried to guard against. I would not use any of the seed grown in the trial rows, but rather use the reserved seed of the lot, which the trial rows indicated was the most uniform of the desired character. While tomatoes do not cross as freely as many plants, yet I am satisfied that they often do cross, and the seed from the most satisfactory row in the trial is liable to be contaminated by pollen from the inferior one.

##### Cannot Do Business Without It.

Enclosed please find \$1.00 to renew my subscription to The Farmer. Have tried but cannot do business without it.—Geo. M. Ford.



## LILLIE FARMSTEAD NOTES.

I was hopeful of an early spring, but it didn't come. In fact, we have had very little warm weather yet. On the other hand, since it did fair off and dry up the weather has been so favorable to do spring work and we have got along so nicely at Lillie Farmstead, that I have almost made up my mind never to find any more fault with the weather.

So far, since we began working the land, it has been an ideal spring for doing farm work, and we have been doing some business, too. As I said, we got started late because cold and bad weather continued late, but since the middle of April the land has been in condition to work and one could make his plans and carry them out fairly well. I have put in five acres of peas for the canning factory. The ground was fall plowed last fall and we got the ground fitted and the peas sown April 17 and 18. Some of them are just coming up at this writing, April 28th.

## Fall vs. Spring Plowing for Sugar Beets.

I also had the beet ground fall plowed and that worked up nicely. I never had land work up any nicer. I harrowed it over, let it lay a few days, harrowed it again, rolled it, then sowed the fertilizer broadcast with a grain fertilizer drill, and we have sown the beets, on April 26. This is the earliest that I ever put in sugar beets. Once before we planted them on the first day of May, and that year I had the best crop of sugar beets that I ever raised. I am hopeful of repeating that experience. We have had such bad weather the past two falls for harvesting sugar beets that I was almost discouraged, and I cut the acreage down materially this year. I made up my mind that I would plant only about four acres, but we have had such good luck in getting them in that I have a notion that I will plow a little bit more. I can plow it and get them in then before the middle of May should good weather continue, and I'll have a chance then to see the effects of spring plowing and fall plowing upon this crop. The land will be identically the same in every respect with the exception of fall plowing and spring plowing, and I have an idea that by spring plowing and then thoroughly packing it with a big traction engine that I can get a good seed bed from spring plowing. At least I would like to try it and I have about made up my mind to put in at least a couple of acres more on spring plowing and try the effect of preparing a seed bed by packing it real firmly with a broad wheeled traction engine.

At this writing we have two fields of oats sown, and one more field to prepare to put in, but if it doesn't rain so that we cannot till the ground it is only a short job, because the traction engine will fit the field in a short time. The ground dried off so nicely that the traction engine has worked fine so far. We haven't used it any at plowing, simply disking, but with the big engine disk heavily loaded with stone and a three-section spring-tooth harrow behind we have been able to fit the ground in almost ideal condition. In fact, in some places it dug it up almost too deep for a good seed bed.

Notwithstanding the fact that we have a traction engine to do the greater part of this heavy tillage, yet this spring we have had plenty of work for the horses to do, because I had several small fields that were rough land that I wanted to get into alfalfa for hog pasture, and we have been working the horses on these fields. Then, also, the orchards which we want to put into peas and oats and rape for hog pasture, had to be worked up with the horses, and taking that with some extra work in getting a carload of feed home we have kept the horses very busy during this fine weather. In fact, I regret very much that we had to unload the carload of feed, when the horses ought to have been working on the land.

## Late Seeding of Clover.

Then, again, this spring has made more work for the horses owing to the fact that I did not get my clover seed hulled in time so that I could sow it as early as I usually do before the frost went out of the ground. We usually sow the clover seed in March, but not having the seed hulled, we couldn't sow it, and consequently had to wait until the land dried off so that we could harrow the seed in. This has made extra work for the horses. As a matter of fact we haven't got the seed all sown yet, but it all has to be dragged both ways and it takes some little time to harrow the 40 acres of

wheat that I am seeding both ways. Besides this we have all of our chores to do. The spring has been cold and dry and the pastures have not started. We are not able to get the young stock out to pasture, and the cows have had no grass yet, so we have just as many chores to do as we did in the winter, and with all of the spring work coming on besides it makes a pretty busy time.

## Wheat and Clover Wintered Well.

The wheat crop looks splendid in this vicinity. The winter was mild and I cannot see that any of the wheat was winter-killed. One small piece that we put in late last fall made a very poor growth in the fall. I told the men that we would have the job of re-fitting that in the spring and sowing it to some spring crop, but it is coming on so that I think it will be a fairly decent crop. The balance of the wheat looks fine. That which we sowed first, however, is much the best, but then it is on the best field also. This, I think, bids fair now to be as good a crop of wheat as I ever raised, and one year on this same field my wheat yielded 42 bushels per acre.

The young clover also looks well. I don't think any of that was winter-killed, and it is starting. If we have favorable growing weather now, and I think we must, because it has held off so cool until it is getting time of the year when we must have warm weather, and with little danger of cold spells and frosts afterwards, and I do not think that we will have weather that will injure either clover or wheat from now on because it is nearly the first of May.

## Harrowing Alfalfa.

The alfalfa, too, has started nicely this spring. I tried a little experiment in using a spring-tooth harrow to kill out some June grass. In many places, however, the June grass had got such a start it was almost impossible to get the harrow in, but where the harrow would go in sufficiently it would dodge around the alfalfa roots and dig out the June grass in splendid shape and I am sure that that is the way to eradicate June grass in an alfalfa field. I don't think you ought to put in the spring-tooth harrow the first season, neither do I think the June grass will get so well established that it will be necessary to harrow it, but the second season if the June grass is coming in, just as soon as the alfalfa is cut put on the spring-tooth harrow and harrow it both ways and you can pull the June grass out, and my observation and experience would lead me to recommend that one use a spring-tooth harrow rather than a disk harrow on an alfalfa field. You can't make me believe that it does the alfalfa any good to mutilate the crowns and cut them up with a disk harrow, but a spring-tooth harrow will dodge around the tough alfalfa roots and dig out the June grass with apparently little injury to the alfalfa. COLON C. LILLIE.

## TILE DRAINING IN HARD PAN.

In the Michigan Farmer of April 12, 1913, the above named topic is discussed by J. B. of Oceana county, and Colon C. Lillie. I have not as much practical experience with tile draining as some of the readers of the Michigan Farmer, but I was the owner for four years of a 40-acre farm in another county which was practically the same kind of soil as J. B. describes. My experience and observation was very much like his own and by permission I will give my views.

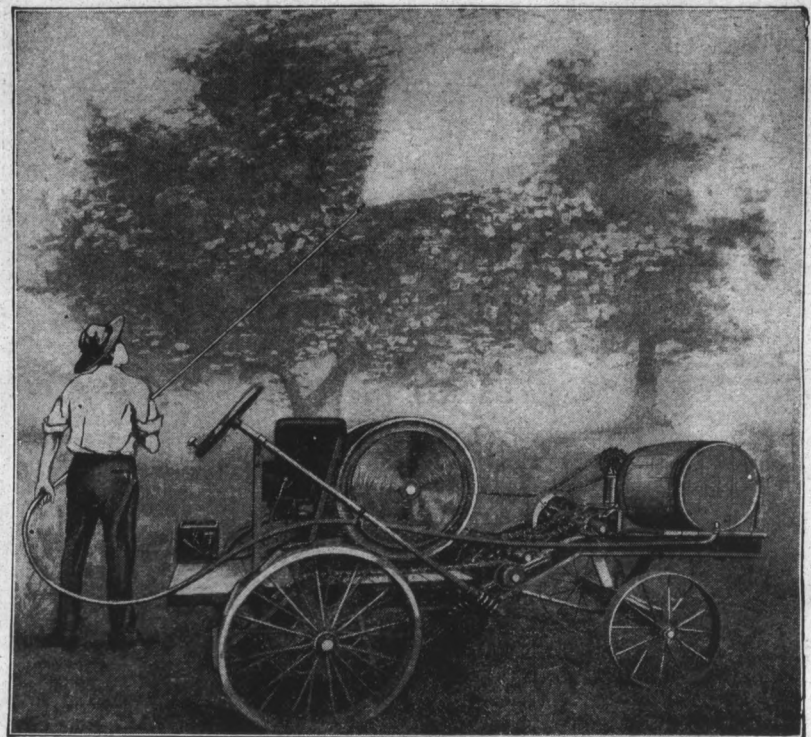
On a few square rods on my farm this hardpan appeared on the surface. After a shower the water would form a little pond there, and the only way it could disappear was by evaporation. The only other way I could get rid of it was by open furrows and ditches and that which did not flow into the ditch over the surface had to evaporate; it would not seep down if only one foot from the ditch. My neighbor laid a drain from his cellar to the creek, he had good fall and the drain drained his cellar but outside where the hardpan was the water would in places stand right over the drain until it evaporated. It seems impossible for water to seep through this kind of soil. Even dynamite would not raise my expectations very high. I would have to see it tried first before I would risk much expense on it.

Such soil needs draining if any does, but how to do it is the great problem. I came to the following conclusion:

1. Lay the tile as shallow as feasible above the hardpan, where that is possible, and lay the drains closer, say about two to three rods apart and run them into deeper main drains.

2. Proceed as J. B. suggests, by filling

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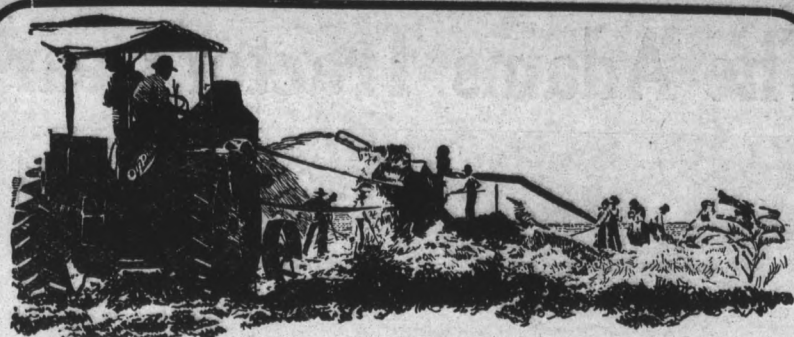
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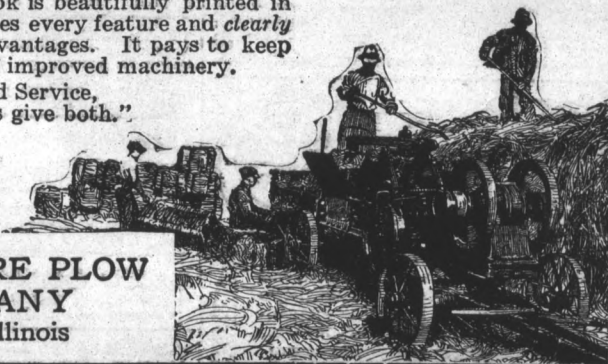
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the ditch with surface soil over the tile.  
3. Fill the ditch over the tile with crushed stone to the height of the hardpan. Or of that is too expensive fill in a little space every 10 to 12 feet with crushed stone and finishing with surface soil.

In any case the drains would have to be laid closer than in ordinary soil. The above is what I had studied out that I would have to do with my farm, but I never got around to do it, for I got a chance to trade it off, which I preferred. I never desire any more such hardpan.  
Gladwin Co. L. V. SOLDAN.

### THE EMPLOYER AND THE EMPLOYEE.

Two hired men have taken exception to my recent article in the Michigan Farmer on the average hired man. Both of these men, however, must be above the average, for they read the Michigan Farmer and are able to express themselves clearly and intelligently on paper, and the average hired man does neither of these. But they both evidently think to meet my statements with the contention that very many farmers have various and grievous shortcomings. While this is undoubtedly only too true, yet it by no means affords every hired man a license to be either heedless or thoughtless or obstinate about his work or to take any undue liberties with his employer's property, as I instanced in my former article. I should not therefore think it worth while to take the matter up in reply, only that the effort of Mr. A. F. Root in the Michigan Farmer of May 3 shows a spirit so characteristic of quite a large class of hired men that I desire to notice it, not with any purpose of entering into any controversy with Mr. Root regarding the matter, but because it represents the very essence of much of the difficulties between the farmers and their hired help.

One of the chief difficulties farmers find with help is that the help are too "bossy." My brother once on being asked why he had discharged a man, replied that he couldn't work to suit the man. Mr. Root presumes to lay down "rules" for his employers. It is generally supposed to be the employer's prerogative to give the directions, and he pays his money for having his directions and wishes carried out. If the hired man finds those requirements unreasonable he enjoys all of the privileges of a free country. As a matter of good policy, I like to encourage the men to suggest ways of doing the work. Other men may have methods that are an improvement over mine, and men who are working around are likely to learn other ways of doing work than those I have. By encouraging them to express their ideas I get onto the different ways of doing work. Occasionally substantial improvements in methods are picked up in this way. Then, too, the help improves by working on their own initiative. They cultivate executive capacity and become really more efficient workers and more capable members of the community by such exercise of their faculties, and it is only an humanitarian act to help these men in self-training in such ways. If I think my methods are better than theirs I suggest a different way of doing the work, and usually the men see the advantage of my ways and fall in with them. But if I think their ways more advantageous, I have learned something and I allow them to follow out their own ideas. And they will usually work more contentedly in this way. But as a matter of privilege the hired man has not the right to offer any other suggestions than to follow the directions of his employer.

And the spirit so characteristic of a large class of hired men appears more in detail in Mr. Root's second "rule." It is this: "Have all tools used every day stored away. It gives the man exercise to get them and put them back." Mr. Root has evidently worked for men who realize, as evidently he does not, that tools are expensive and are worth caring for. It is understood that tools depreciate as much by weathering as by wear, and where they are left out to be wet with the dew or a possible rain, it injures them more than the Roots may suspect. A man who takes pride in his tools guards against this. A rain may come up during the night and so wet the ground that the tool may not be used again for days, and as a matter of fact, unless the tools are put under cover every night they usually remain out during the entire season. It requires little time, as a man is leaving the field, to take the tool he may chance to be using along with him and put it under cover, and again take it out in the morning as

he goes to work, and probably the employer would not expect him to work overtime in doing this. Then, why should Mr. Root object to this as long as his employer pays him for his time? But as Mr. Root does not have to buy the tools he fails utterly to appreciate the importance of this, and I can easily imagine him coming up at night and leaving the tool in the field. And if the employer asks why it was left, possibly Mr. Root may say he "forgot," while the fact is he was simply obstinate. Mr. Root, of course, may not do this, but it is characteristic of a large class.

Now, the employer who uses much help can easily cite a dozen different instances of just this kind of heedlessness or obstinacy. For instance, I like to have the horses have fresh water, especially during warm weather, and not infrequently have occasion to suggest this to the men. But it is nothing unusual to find the watering tub full of water, and when the teams come from the field they are expected to drink this water that has stood for hours and become warm and stale. And what am I to do? Must I have a scrap with the men, (I never "cuss" them), or must I allow the horses to drink stale water all summer because of some "rules" that the obstinacy of some Root may frame? The difference between a scientist and a person who is not may be found in the fact that the one understands and weighs the importance of a whole lot of little things as the other does not. And a very large proportion of the differences and difficulties between employers and their help grow out of the little things which the one wishes and the other thinks unreasonable.

If I have said anything in my former article that should widen any possible differences between the employer and his help it has failed of its purpose. But these differences are best cleared up by having a full and clear understanding of the relations and obligations of one to the other. Some employers are without doubt unreasonable and overbearing and perhaps tyrannical, but those who employ help have reached a position of responsibility and acquired property by observing certain methods which those who are less successful fail to grasp or understand. They have no doubt learned some things of value as well as some valuable things by experience—among other things that tools and stock as well as crops, cost money and are worth caring for, and if those with less experience could understand that there are perhaps a good many little matters that seem to them unimportant which have really a significance that they little appreciate, they would avoid many of the differences which arise between them and their employers, and would at the same time be on the road to more successful careers of their own. If those who read this will accept it as written, in no spirit of unkindness, but as a plain statement of facts, I think they will admit its truthfulness.

Allegan Co. EDWARD HUTCHINS.

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## Dairy.

CONDUCTED BY COLON C. LILLIE.

### SILAGE PUT IN TOO DRY. WILL WATER ADDED NOW BE BENEFICIAL?

I have a silo 18 ft. in diameter, 40 ft. high, 30 ft. of staves and 10 ft. of cement and I want to keep about 10 ft. of it over until next winter. But it was put in too dry and it has molded quite a lot. It is warm now. I think if there is a lot of water put in it would stop the molding.

Jackson Co. H. T. S.  
If your silage is still warm it certainly shows that actual fermentation is taking place at the present time, and this is due to the fact that the silage is getting air, your silo isn't air-tight or the silage was so loosely packed that there is enough air left in with the silage, or with this dry corn, so that it still ferments. Now the trouble in applying water at the present time is that you can't get it down into the silo. Water ought to have been applied at the time you filled the silo so that all parts of the corn fodder or dry silage would have been moistened. I think water will help some now, especially around the outer edges. It is barely possible that the cement part of your silo, the lower ten feet, is not plastered with good rich cement mortar and that it is not fine grained enough to be sufficiently tight to keep silage properly. Water poured around the outside would certainly help this and what would soak into the silage would also be beneficial. Undoubtedly, wetting it now would be a benefit to preserving it, but the question is whether you can wet it sufficiently and get this moisture evenly enough distributed through the silage to prevent further loss. If you cannot, in all probability by next winter, the time you say you would like to save it, much of it will be spoiled. If that is the case, then it would be better to feed it out now, rather than to try to hold it over. You can apply water and can tell probably in a short time from appearances whether it has had the desired effect or not.

### WHAT ROOT CROPS TO GROW AS A SUBSTITUTE FOR SILAGE.

Since I am not in a position to build a silo for a few years yet, what root crops are best to grow to take the place of silage to furnish succulent food for my cows through the winter. My land is half sand and about a quarter mucky loam and the balance is muck but has not been opened up as plow land yet.

Kent Co. D. E. W.  
The best root crop, that is, the one producing the largest number of tons of roots per acre, is the mangel wurzel beet. There is no other root crop that even approximates it in yield. These beets can be grown in rows 28 inches apart, thinned to one foot in the row, and on good rich land as many as 20 to 25 tons per acre can be grown. Many times the mangel wurzels grow two or three feet above the ground. It is not uncommon to have them project above the ground one foot, and they grow exceedingly large so that one can raise immense crops of them on an acre. Sugar beets, turnips, carrots, rutabagas are all good root crops to use, adding succulency to the ration, but with no other crop can you get anywhere near as many tons to the acre as you can with mangel wurzels. Growing above the ground so much makes them easily harvested. It is no trouble at all to plow them out or pull them. Next to corn silage you can get succulency for the dairy cows cheaper with mangel wurzels than anything else I know of.

### A SILO PIT.

I would like to ask a few questions in regard to making a silo pit. I would like to dig down in the ground eight feet. Some tell me the ensilage will not keep as the cement draws all of the moisture from it. What do you think regarding this?

Kent Co. SUBSCRIBER.  
You can dig down into the ground eight feet to get the capacity of your silo if you choose to do so. It is not a good plan, however, to do it. But you can dig down and by properly cementing the sides you can make a pit that will hold ensilage. We know this because many people have done the same thing. I have seen silos that were 30 feet deep and they kept silage perfectly, but it costs so much to get the silage out. You might better build the silo above ground, build

it up into the air. You can easily fill it with a modern blower ensilage cutter, and you can get the silage out much easier than you can take the silage out of the ground where you dig a pit.

If you have a dry, porous sub-soil there will be no trouble at all about making a silo that will preserve the silage. You have got to put on a good coat of mortar. In the first place it ought to be stoned up, and then plaster on the inside of the stone with a good coat of cement mortar made in the proportion of two parts of good sharp fine sand to one part cement. If you have a wet sub-soil you will be bothered some by moisture seeping through the cement into your silo, especially when it is empty. Some of it will seep through a little even when it is not, although there will not be very much because the pressure on each side of the cement then will be practically equal, but when your ensilage is out of the silo there will be no pressure on the inside and the water will gradually seep through. But the chief objection is that it is a hard job to hoist the ensilage out of a pit in the ground.

### ADDITION TO BARN.

Our stable is a half basement 24x44 ft. on one side of the barn floor. There is an alley between a row of horses and a row of cattle. They head toward each other. Behind the row of cattle there is room for some small cows. Our idea was to put up a bent about 20 ft. to the end of the barn on an 8-ft. wall. It would be for dairy cattle. They would head towards the old barn the way the door is arranged in the cow stables the cattle kept in the old part would have to pass through the new part. In the old part of the stable we thought of keeping the cows that were coming in, also young calves. I would like to keep from 12 to 15 cows. I would like to have it as convenient and as sanitary as possible without too great cost.

Huron Co. F. L. C.  
One trouble with the proposed plan is that it would make a stable that is difficult to ventilate, and another difficulty is to get a sufficient amount of light where you build on the end of the barn that way. Your horse stable is then entirely on the inside and it would be quite impossible to get enough light. And, also, unless you take away the end of the barn between the two stables it will be almost impossible to have a circulation of air that would properly ventilate the whole stable. It possibly might be done but it would be quite expensive. Of course, the part of the barn where the cows now stand would be suitable for box stalls for cows when they freshen and also for young calves. This would be a good place. And if you build the end on the barn 20 feet wide you can have a four-foot feeding alley in front of the cows and then have sufficient room behind them so that you could drive through with a wagon and load on the manure, which I think is very important in a cow stable.

Personally, however, I would prefer to have an entirely different plan. I would build the cow stable and horse stable and the space for young calves or box stalls, in a building which would end up against the side of the big barn, just in front of the barn driveway and I would have my stable under that. Then, when I threshed I could throw the straw into this new part of the barn over the stable. I would have this stable at least 36 feet wide and as long as I wanted it to get sufficient room. You can have two rows of animals facing the outside with an alley between them so that you can drive through. If the arrangement would not permit driving through the main part of the barn from the stable a door could be placed on the side of the new part where it joins the old barn, then by turning one can go out with a load of manure there. You wouldn't have to build the building much larger than your 20 foot addition or 20 foot bent on the end of the barn, and you could arrange your stable much more conveniently, besides it would provide a place where you could put your straw when you threshed and have it all inside so that it would make nice dry bedding.

There is no objection to keeping the horses in the same barn with the cows. You could have the cows all on one side of the barn, and the horses on the other side in one end and then the balance of the space on that side could be used for box stalls and pens for calves. Then, to clean out the barn you would drive right in with the wagon, load the manure directly without being compelled to use a wheelbarrow, and draw to the field. In this way the barn can be easily ventilated by the King system with one erect ventilating shaft, and it can be properly lighted because you can put windows in on all sides.

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## The Importance of Palatability in Food for Live Stock.

WE have had a splendid opportunity this past winter at Lillie Farmstead to note the effect of palatability upon dairy cows and, in fact, upon all kinds of live stock. Our clover hay, as stated last season, was out in a heavy rain. It was injured by this rain. The fine aroma and flavor was gone, was washed out, but, of course, we had the hay, and we had to get out of it all that we could. It was practically unsalable and besides that I don't believe in selling clover hay. It is worth too much for manure purposes and for feeding purposes. Our cows have had an abundance of clover hay this winter but it was of poor quality. As I stated before, we had between 10 and 12 inches of rainfall in the month of July last year and no one need tell anything about the condition of hay besides that. Every practical farmer realizes what one is up against with that amount of rainfall during the haying season.

Then, again, there was so much wet weather and so little sunshine that the corn for silage did not mature as well as it ought to. It was glazed when it was cut, so far as that was concerned, but it didn't seem to have the fine quality that it does when it grows in a normal season, and it didn't make as good silage. Therefore, our cows have had rather unpalatable hay and not choice silage, and the consequence is they have not done as well as they ought to. Again, they did fairly well as long as we had our own peas and oats to feed, which were of good quality. These were relished and they overcame, in a large measure, the unpalatability of the clover hay and the corn silage. When our own peas and oats run short I was induced to buy a carload of salvage barley to feed the cows. I did this, of course, because it was cheap and I wanted to cheapen the ration, and I wanted to find out what I could do. One never knows anything until he tries it. One is rarely satisfied with the opinion of others, he wants to know for himself, so I purchased a carload of salvage barley. The cows ate it all right but they didn't seem to eat it with a relish. We mixed some corn with this also and part of the time we mixed oats. Then I fed some gluten feed in connection with it. The cows look fairly well so far as flesh is concerned, but it must be remembered that a cow will first take care of herself, if there is anything left then it goes into the milk pail, and our cows haven't held out on their milk as well as they ought to, not as well as I am sure they would had all of their feed been palatable, had they relished it. They have eaten enough to keep in good condition and to give, of course, ordinary messes of milk; but they haven't done as well as I wanted them to do, and I am of the opinion that it is almost entirely due to the lack of palatability in the food which they have been fed. They simply ate the food because they had to eat it, not because they really liked it.

We had another little experience also, and that was with a few steers which we have been trying to fatten. They didn't fatten well on this hay and silage and salvage barley and corn meal. They were not going to get ready to sell, and the consequence was that I had to quit feeding them the salvage barley and give them corn and oats. Now they eat the corn and oats with a relish and it shows. They have been doing well ever since we changed the grain from salvage barley to corn and oats. I am confident that it is simply because this food is more palatable and they like it and will eat more of it. Eating more of this palatable grain they will also eat more of the poor hay and of their only fair quality silage.

Palatability is a great factor in the feeding of animals. It is just as much of a factor as it is in feeding human beings. If our food is not cooked in a manner which makes it palatable we do not eat as much of it and do not do as well upon it. Of course, we can live and probably get along all right. It may be that our foods are made too palatable. That is one reason why we eat too much, eat more than we need, more than is good for our health. But when we come to want to fatten animals we have got to look at this from a different standpoint. If we simply kept store animals, wanted to get them through and finish them on grass or something of that sort, then some of these damaged feeds might be cheap, but where we are trying to make good gains, where we are trying to

make these animals do their best, either at the pail or by adding growth to their carcass, even with hogs I do not believe, in the long run, it pays to feed food that has been in any way damaged. Of course, a farmer is up against a proposition sometimes, his feed is damaged and he cannot help it, he has got it on his hands and it is practically unsalable. The only way for him to get anything out of it is to feed it to his animals and get as good results as he can, but when it comes to purchasing the best quality is the cheapest in the long run.

COLON C. LILLIE.

### GREEN FORAGE FOR THE LAMBS.

Along with feeding the ewes liberally to promote a strong uniform milk flow, additional attention should be given to growing some tender palatable green forage for the lambs to graze while they are still obtaining a portion of their daily sustenance from their mothers. As the spring and summer seasons wane the pasture gradually becomes less palatable to the dainty appetites of the lambs and if compelled to rely upon the dry, sun-parched pasture on which the ewes graze, the lambs will fail to make the best bone and flesh growth. It not infrequently happens that too much live stock is run on the pasture and the supply becomes insufficient, consequently the young lambs suffer more than the older sheep because of their more dainty appetite. If a little attention is directed early in the season to have growing a small area of green forage nearby the regular pasture easily accessible for the lambs it will materially assist in maintaining a steady and uniform development.

There is no period in the age of the lamb crop when so rapid and profitable gain can be made as when nursing their dams and encouraged with supplemental feeding on sweet, tender forage. Nursing lambs early in life acquire the habit of searching about in quest of something to satisfy their appetites. If the proper kind of feed is near at hand the lambs soon learn to become self-supporting and not only reduce the strain upon the ewes, but also induce physical growth. The leguminous crops are always desirable for supplementary forage because of their protein content and their beneficial effect on the soil. If attention is paid to selecting crops adapted to the soil and climate large yields of highly palatable and nutritious forage can be grown on a very small area.

### Clover Best for Young Lambs.

Clover is a very excellent forage crop for young lambs if so managed that regular pasturing keeps the crop from making too rapid growth. I have followed the practice each spring of fencing off a small area, about what I thought 50 or 60 lambs would care for, and turn it over to the lambs to graze upon. I always endeavor to have this forage adjoining the field the flock is pasturing in or along the lane where the lambs can easily get to it. I then make a small opening in the fence just large enough for the lambs to get through so that they can have access to the pasture whenever they wish. Very frequently I notice during the summer the entire lamb crop pasturing on this supplemental forage when the ewes are a half a mile away on the regular pasture. Clover is particularly an early lamb forage crop as it comes on very early and if not over pastured will supply an abundance of palatable forage for several months during spring and summer and sometimes into the fall.

### Peas and Oats a Substitute for Clover.

Canadian field peas and oats make a splendid early forage for young lambs and may be sown from early spring to the middle of May. Young lambs are very fond of this kind of forage and when pastured judiciously it yields well and will continue to grow through June and July. I have grown this combination forage crop with very satisfactory results and when impossible to secure clover I considered it an excellent substitute. The common rate of sowing is one and a half bushels of each per acre. The peas are usually scattered broadcast on disked or harrowed ground and then turned under about three or four inches. I have secured very good results, however, from sowing with the grain drill, setting the teeth so as to put the seed into the soil about three inches. The crop can be pastured without danger and makes an excellent forage pasture for growing lambs.

### Rape an Excellent Summer Forage.

Rape perhaps is the most commonly grown forage crop for sheep pasture we have had and, being well adapted to almost any kind of soil rich in available plant food, it is a very valuable plant for flock owners. It is a non-leguminous crop, however, although on account of its large root system it has a tendency to loosen the soil and improve its physical condition. No flock owner can afford to go through the summer without growing a large acreage of rape for both the ewes and lambs. It is not advisable to attempt to make one pasture do for both as the forage the ewes are pasturing upon is very likely to become too woody and coarse for the lambs. I find that the same practice I follow with the clover works splendidly with the rape forage for lambs. By starting the lambs on the rape while quite small and tender it does not grow tough and woody and makes excellent supplemental feed during the entire growing season. I do not like to pasture the rape when wet or the dew is on as I find it causes digestive trouble among the lambs.

There are numerous ways and means of supplying the green forage for the young lambs during the summer months and no flock owner should neglect the opportunity to promote growth by such economic source. It is impossible to foretell the season, but it is a safe policy to prepare for a dry season. An over-abundance of pasture is a great deal better than to run short and always more profitable. When pasture is short a large amount of grain must be fed, thereby materially increasing the cost of production and cutting down profits.

Shiawassee Co. LEO C. REYNOLDS.

### FEEDERS' PROBLEMS.

#### Summer Forage Crops for Hogs.

I raise O. I. C. hogs. I pastured them on rape last year and it did not seem to agree with them. Could you tell me of some other early crop to take the place of rape that would make me a good pasture?

Barry Co.

P. L. G.

We know of no crop which could be sown in the spring and give as great an abundance of nutritious forage for hogs as will rape. The ideal pasture for hogs is alfalfa. Clover is good but does not furnish fresh, nutritious food throughout the season as does alfalfa. Where rape gets a rank growth and the small pigs are permitted to run through it it is sometimes irritating to their skin to a degree which interferes with their thrifty growth. This is probably due more to the fact that the moisture on the rape plants keeps their skin wet; although there may be some irritating property to the plant itself. However, if very young pigs are not pastured on the rape or are kept out of it when the plants are wet, we have never known injurious results to attend its use as a green forage for hogs, and experience has proven it to yield a larger amount of green feed than any other summer-sown crop. Of course, peas and oats can be sown and will make considerable late pasture and under favorable conditions will afford some grain as well, but will not make the quick growth and abundant pasture which is afforded by rape.

At the North Dakota Station, where considerable attention has been given to this matter of summer forage crops for hogs, the following mixture was used with good success: One bushel of oats, one bushel of Canadian field peas; four pounds of rape and two pounds of millet. At this station it was found that this mixture would pasture about 16 pigs per acre, but as the conditions were especially favorable it is the opinion of experimenters that 10 or 12 pigs per acre would be about all this mixture would carry on ordinary soil. The pigs were turned into this forage crop about the middle of June. A good supplementary grain ration is, of course, fed in connection with this summer forage.

Provisions in the Chicago market are meeting with very good cash sales, despite the fact that they command unusually high prices, being much higher than a year ago, with a big shortage in holdings in Chicago and other western warehouses. The bulls are banking strongly on the southern requirements, especially for the cheaper meats. Both hogs and their products are evidently going to bring extra high prices for a long time ahead, although beyond a certain point prices cannot be advanced without cutting into general consumption. Fresh pork, partly because of its relative cheapness has long been an extremely popular article of meat throughout the country, and it is so still, although just now the abundance of choice fresh eggs that sell at low prices tends to vastly increase their consumption, thereby displacing meats of all kinds.



## HOW TO GET A HERD OF BEEF CATTLE.

I would like to start a beef herd of 20 or 25 cows in a year or two but there are no beef cattle, not even a beef-bred bull in this locality. What plan would you suggest to get cows? I want pure-bred or good grades. Was thinking of buying heifer calves.

Sanilac Co.

W. D. I.

Under the circumstances mentioned I should say that the best way to get a herd of beef cattle would be to buy heifers; that is, it will be the cheapest way. The quickest way, of course, would be to buy animals old enough for breeding at the present time, two-year-olds, or three-year-olds, or mature cows. One could go out and buy grade females of any of the beef breeds of cattle and then purchase a beef-bred bull and, of course, begin to do business at once. If he buys young heifers he has got to wait until they mature before he can get a start and this will take a long time. On the other hand, it will cost more to buy mature animals than it will to buy heifers and one must take his own conditions into consideration, the amount of money which he has to put into the herd, and use his own judgment.

My opinion is that W. D. I. will want to get dual purpose animals instead of strictly beef bred animals if he wants to make the greatest profit out of his venture. The day is practically gone by when you can keep cows just for the sole purpose of producing calves. They must give some milk in addition to this in order to make the great profit.

COLON C. LILLIE.

## LIVE STOCK NEWS.

The percentage of heavy steers coming on the Chicago market is quite small, and not many are reported left in feeding districts.

The course of the Chicago hog market in recent weeks has disappointed many stockmen, who were unprepared to witness a lower scale of prices, but at such times as eastern shippers are small purchasers, it is natural to expect sales on a declining market, provided the receipts are not materially lessened. The packers are talking in a bearish way and profess to believe that later on there will be much larger supplies although the great shrinkage in the country's swine supply as compared with a few years ago is based on facts that seem incontrovertible. The spring pig crop is reported as good, so far as is known, and before many weeks roll by it is probable that a good many old sows will be marketed, thereby increasing the manufacture of lard and the coarser hog meats.

In Montana settlers are bringing in thousands of cattle, and agricultural machinery is being purchased in train loads. The ranges are fast disappearing, and Montana towns report fast increasing populations. Dry farmers are crowding out the cattlemen, and it is stated that Montana will market this year barely 90,000 head of cattle, compared with 105,000 last year. Marketings will include a good many Mexican, Texas and Arizona cattle that were taken there in 1911 and 1912. On the remaining ranges cattlemen are greatly short of breeding stock, and desirable breeding cows and heifers are likely to be largely retained for breeding purposes.

Milk cows have been in active demand in the Chicago stock yards for some time for shipment to Utah, Montana and Idaho, and entire carloads have been purchased for around \$75 per head. Bankers in those states are glad to encourage such purchases and advance the required money when their assistance is requested. These cows are wanted largely for the condensed milk industry, which is an extremely and fast growing one in that great inter-mountain country.

Western sheepmen are holding out for prices for their spring clip of wool that buyers refuse to pay, but some buyers are coming around to their terms. A short time ago it was reported that upward of half a million pounds of shorn wool around Phoenix, Arizona, was sold to Boston dealers for about 19½¢ a pound. Thus far the amount of contracting wool in western states is the smallest in many years for like periods, with buyers and sellers frequently from two to three cents per pound apart, it is stated.

The yearly spring marketing of calves from the dairy districts of the country started in recently, and Chicago has been receiving liberal supplies of the calves, the offerings including no large percentage of heavy ones, nor are there many female calves, most of these being retained by the dairy interests. Tuesday of every week is the great market day for calves, and it is known as "calf day." The bad days for selling calves are Monday and Saturday, and after Friday noon the demand is very poor. Light weights are much the best sellers always, but calves that weight under 50 lbs. should not be offered for sale and are likely to be condemned by the health officers as unfit for food. The most desirable calves are those from three to six weeks old and weighing around 100 lbs., or from 80 to 120 lbs. The heavy calves, such as those that have been fed on buttermilk, are not high sellers, being neither good for veal nor beef. "Bob" condemnations are frequent, and skim-milk calves are sure to sell at low prices. These are times when choice veal is among the luxuries and sells at extremely high prices in all retail markets. Calf sweetbreads, retail in Chicago for 75¢ per pound.

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By R. E. Olds, Designer

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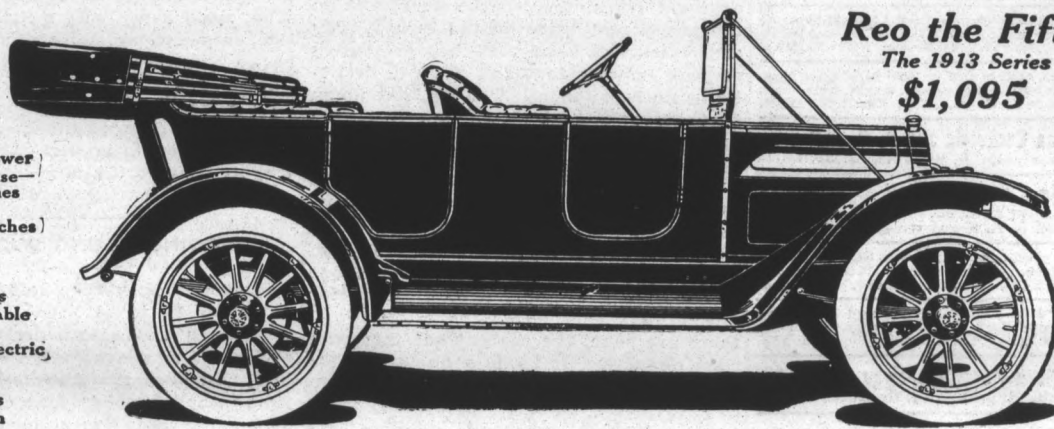
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# Poultry and Bees.

## EXTERNAL PARASITES OF FOWLS.

There is nothing in the management of poultry too small or too trivial for notice. Although one is apt to forget this and deal with greater subjects, even if not of more importance, I will say a little about the external parasites of fowls and the best way of preventing and destroying them.

Of the animal parasites there are three kinds—fleas, lice and mites—and neglect of these will account for loss instead of profit in any poultry yard. Growing chickens suffer most from these insidious little enemies, broody hens next; but any and all kinds lose condition through them, and not only are considerably less productive but are rendered an easier prey to the diseases caused by the internal and minuter parasitic life. One of our keenest observers says that he has never found roup in fowls without an accompanying large number of body lice.

Fleas are true insects, having six legs, and feed upon the blood. They have a sucking mouth, and are not usually found on the fowls as they feed at night. Neglected sitting-boxes swarm with them. I have known orange boxes, taken from a sitting-house and kept in the open for months, often during very wet weather, to show fleas present in myriads and as lively as ever. This shows how tenacious they are of life and how easily they breed under adverse circumstances. Dark, badly-ventilated houses are where they thrive best, and where it is most difficult to exterminate them. All cracks and crevices harbor them, as well as holding the dust and filth in which they revel. The female lays the egg in such crevices, and in the dirty straw of the nests. They mature into fleas in from three to five weeks, according to the warmth. There is only one variety, and that is one too many for the comfort of either fowl or man.

**The Biting Lice (Mallophaga)** have many species, eight being found upon the chicken, four on the duck, five on the goose, and three on the turkey. My experience has been that they are rarely present on waterfowl and seem to do little or no harm there. The kinds common to one species of bird will not thrive on another. Different kinds of lice infest different parts of the body. The two principal ones are found under the wings and near the anus, the latter especially being found in clusters. Very few healthy fowls are so clean that a few of these may not be discovered unless one is continually dressing. To examine for lice, always look under the tail first; if there are none, the chances are there are none elsewhere. It needs a quick eye, for as soon as the feathers are opened they rush to cover. Another species, the Menopon palladium, wanders all over the body, and is often found off it in the nests. This is the kind that covers the hands when plucking a fowl. These lice do not suck the blood as do fleas and mites, but scrape so hard at the skin as to set up inflammation. They live upon the skin scales and outer quill layers; in fact, little of the secretions come amiss to them.

### Young Turkey Pests.

There is one kind, resembling a dog tick, which is found on the heads of turkey poult, and I believe this is identical with the one found on chickens' heads. These should always be looked for in turkey poults. Lice breed rapidly, and eggs deposited on the down at the base of feathers hatch out into small complete lice in a week if the weather is warm. These moult their skin many times before full growth is arrived at. Mites, in my opinion, cause more direct loss than lice, as the latter rarely increase to such numbers with fairly well managed fowls as to make serious loss, while mites, if directly neglected, will bring "hideous ruin" to a poultry yard.

The worst is the red hen-mite (Dermanyssus avium). These are often to be found in large numbers in poultry houses where the owner had no idea of their presence. If ever I visit a yard where the fowls look anaemic, I search for the red mite. If the perches are of rough poles, with the bark cracked and lifted from drying, huge clusters will often be found on removing the bark, the color varying from dark red in the early morning to pale yellow at evening, according to the length of time since the blood was

drawn from the fowl's body. Dark, filthy-smelling houses always are favored by them, and those with damp, festering heaps from leaky roofs are almost certain to be infested. Even with the greatest care, mites cannot always be kept away. In my own pattern houses, as light as the day and built so that the sun can flood the inside, I have occasionally found them in the slots where the perches rest, among the little skin dust which will accumulate unless the perches are moved very often. These mites, under a microscope, are seen to have four pairs of legs, and to be of a hairy appearance. They are, when full, little more than sacks of blood, and if one of them is cracked between the thumbnails there is little left but a splash of blood. They are most tenacious of life and can live for, certainly months, although no one knows exactly how long, without the live host to feed upon. Another mite (Sarcoptes mutans) is responsible for the scale-like eruptions on fowls' legs, while still another, sometimes called the "depluming mite," is generally responsible for feather pulling.

In combating all these parasites, common sense and cleanliness go a long way. First, houses must be light, airy, and kept clean. They must be so constructed that there are no crevices and no dark corners. Once a week best, although once a fortnight may do, they should be tidied up. Perches and nest boxes should be thrown outside, walls and roof swept down with a hard brush, and the whole interior sprayed with fluid disinfectant and water (about one in fifty). The loose floor deposit should be forked over or stirred up with the foot and the nest boxes sprayed and put back into place with a little fresh straw. This does not take more than ten minutes. The perches may be wiped occasionally with a cloth soaked in petroleum. There will probably be no fleas and no red mites in these houses. With such cleanliness and the use of a dust bath—best made out of sand, wood ashes, and a little lime, creosote or petroleum, mixed in—there should be no body lice on the birds worth consideration. It is not much trouble to do all I have said, and that trouble is well repaid. It only requires system and a determination to properly look after poultry, as well as the larger stock.

Canada. W. R. GILBERT.

## FEEDING YOUNG DUCKLINGS.

Ducklings should be left in the incubator for 24 to 48 hours. They do not need feed during this period and would not eat if it were given them. Just before hatching, the duckling absorbs the yolk, which supplies food enough to last during the period mentioned.

When removing from the incubator place them immediately in a brooder or brooding pen and give the following ration: Four parts bran, one part corn meal and one part flour middlings. They should be kept on this ration for a week and should be fed at least five times daily. The mixture should be damp but not sticky.

When they are a week old, and from then on until they are four weeks old, the following ration should be fed: Four parts bran, one part corn meal, one part flour, 10 per cent beef scrap, 10 per cent green food, three per cent grit and one per cent oyster shell.

At the end of four weeks the ration is again changed to the following ingredients: Three parts bran, one part corn meal, one part flour, with same percentages of other ingredients as above. This is fed until they are six weeks old, when the ration is again changed to the following: Equal parts of bran and corn meal, with 15 per cent flour, 10 per cent beef scrap, 10 per cent green stuff, three per cent grit and one per cent oyster shell. This is fed until the ducklings are ready to be fattened at eight or ten weeks of age.

Where ducks are grown for breeders a simple maintenance ration may be given after the eighth week, as they will become too fat for breeding purposes if kept on heavy rations. The main thing is to keep the ducklings growing from the first.

Fresh water should be easily accessible to the ducklings at feeding time. The young ducklings eat so fast that there is

danger of choking unless water is handy to wash the food down. Ducklings make several trips to the water fountain during feeding. No more feed should be given than will be thoroughly cleaned up in 15 minutes.

Wisconsin.

GEO. C. MORRIS.

## PREPARING BEES FOR THE HONEY FLOW.

From the time that bees start bringing in the first pollen, the care the bee-keeper gives his bees means the securing of a large or a small crop, according to the time and attention given and the skill displayed. As soon as the first pollen is secured, bees should be encouraged to rear brood as fast as possible. This pollen will, in most localities, be the greenish-pink of the soft maple and the yellowish-green of the elm. These are valuable trees for the bee-keeper as they are early and profuse pollen producers.

Hives should be well protected, as cold days in a changeable spring will sometimes seriously impair the working force of a hive that is well populated. The feeding of a little sugar syrup every day up to the starting of the honey flow is highly recommended. Exception to this may be made during days when bees are able to get some honey from some early nectar sources, such as the dandelion and the fruit bloom, both of which last but a few days. Next to the feeding of a little sugar syrup or the daily gathering of a little nectar, the having of plenty of honey stores are valuable.

Look over and inspect each hive and see that each has a vigorous queen. If a poor queen is found, she is killed and a good young one given, or the bees in such a hive united with a weak hive having a good queen. An old or poor queen is easily told by the scattering of her brood. Many cells which are empty or occupied by eggs or larvae will be found among capped brood. This scattering is, to a greater or less extent, according to the poorness of the queen.

In putting the apiary in readiness for the coming active season, the hives may be lined up in straight rows or in some sort of symmetrical manner that allows easy access to any one of them by wheelbarrow or cart. Hives should also be leveled both ways, with the exception of a slight pitch to the front to allow water to drain off the bottom-board in case of a beating rainstorm. Hives being level is important, especially when producing comb honey and when the rows of sections extend lengthwise, as the majority of comb-honey supers are thus arranged. Water is essential to bees in the spring. If a small stream, well protected by shrubbery, is near, this will be excellent, but water in pails, with grass or pieces of wood floating in them to keep bees from drowning, will answer the purpose.

A condition of the hive at the first of the season which makes many bee-keepers think that robbing is going on, is that seen when young bees play. At that time of the year there are a large number of young bees and every nice day they go out to play and sun themselves. They walk over the front of the hive and fly backward and forward with their heads toward the hive, acting in a manner similar to robbers. A careful look will show that they are fuzzy, rather grey colored young bees. Robbers are generally shiny dark bees with few hairs on their body.

### Get Supplies Ready.

All supplies needed for the coming season should be in readiness for use, with the exception of putting the foundation into the brood frames and the sections. This may be left until the latest time at which you will have leisure before you need them. I find that bees accept this fresh foundation much more readily and start work upon it much quicker than on that which has been in for some time and which has become hard and brittle.

Hives should be well painted, not only because it pays in preserving and lengthening the life of the hive but also because it keeps out moisture.

Care should be taken that no weak colony is robbed by its stronger neighbors by reducing the entrance of the hive to fit the strength of the colony. No larger entrance should be given in the spring than they are able to guard and defend. Weak colony entrances may be reduced to as low as two inches in width. Later, during the honey flow, the very weakest ones may be opened full width, as there is little danger of robbing at that time.

Shiawassee Co. N. F. GUTE.

Don't set your bees in a place where they will annoy the public.



## Practical Science.

### SPICES—(Continued).

#### Cinnamon and Cassia.

There are two varieties of this spice which have been allowed, up to date, to pass on equal terms in the market. These are cinnamon and cassia. They are used largely for the same purposes, but belong to two entirely distinct species. The true cinnamon is much more valuable than cassia, even as the high-grade vanilla is superior to the extract from the Tonka bean. The flavor of the true cinnamon is very delicate and pleasant, while the flavor of cassia is much stronger, and coarser.

Cinnamon is obtained from the bark of the cinnamon tree. It is native to Java and Southern Asia, particularly the islands of the tropics. The purest quality of cinnamon comes from the island of Ceylon. It has a distinct color when taken from the inner bark and is thin and very delicate in flavor.

#### Oil of Cinnamon.

Both cinnamon and cassia owe their value as a spice to the peculiar pungent volatile oil. The principal content of this oil is cinnamic aldehyde, although there are other esters present that undoubtedly contribute to its value. There is abundant reason why there should be a differentiation between cinnamon and cassia. If the consumer is desirous of getting the delicate flavor which is conveyed by cinnamon alone, it will be necessary to insist on being supplied with cinnamon, and not cassia. The two products are not identical and should be differentiated in commerce.

In the detection of adulterants in cinnamon and cassia the microscope is again one of the best agents at the hand of the analyst. The main adulterants of these two spices are the same as in other spices, namely, ground olive stones, coconut shells, cereal products and other bark than cinnamon.

#### Cloves.

Clover are the dried flower of the clove tree, which is an evergreen, and the flowers are undeveloped. Cloves are valuable, of course, because of the volatile oil which they contain. The clove tree is native to the West Indies and tropical regions.

Eugenol is perhaps the chief constituent of the clove oil. It is antiseptic to some degree. The microscope is the analyst's chief agent in detecting adulteration in cloves.

#### Clove Stems are Used to Adulterate.

The usual gross adulterants are the same as are used in other spices, but the substitution of clove stems in the ground product, in the absence of the microscope, might destroy some of the chemist's evidence in attempting to detect adulteration in this form.

Tannin is considered quite a constituent in cloves and this determination will serve to assist in identifying possible adulterants.

The use of cloves which have been exhausted of their volatile oil, and their fixed oil likewise, for clove extract or oil of cloves, is also used as an adulterant of ground cloves, and in the absence of chemical methods might successfully pass scrutiny under the microscope.

So it will be seen that to detect the various forms of adulteration that are now practiced in spices needs the clever combination of skill with chemical manipulation, and the microscope at the same time.

### TUBERCULOSIS OF CATTLE.

Tuberculosis is a widespread disease affecting animals and man.

Human beings and cattle are its chief victims, but there is no kind of animal that will not take it. Hogs and chickens are quite often affected; horses, sheep and goats but seldom, while cattle are the most susceptible of all animals.

#### History.

Where did tuberculosis come from? We do not know. History records it from the earliest times.

Over a century ago its contagious nature was suspected and many facts were recorded to prove that it must be "catching." Doctors differed about it and for a long time the question was hotly disputed. Finally it was settled by Dr. Robert

Koch, a distinguished German physician, who discovered the germ of the disease in the year 1882, and named it bacillus tuberculosis. He proved by experiment that the disease is produced by these germs and without them the disease cannot be produced. It is now universally admitted that tuberculosis is a contagious disease and may be transmitted from animal to man.

In America the disease was introduced with early importations of cattle and has been with us ever since. Modern methods of transportation by rail and water have spread the disease from one end of the continent to the other. No part of the country is entirely free from it but it is more prevalent near the great centers of population than in the remoter parts.

#### Importance.

The importance of the disease must be estimated from two points of view; first, the loss it entails upon the cattle owner, and second, the danger of communication to human beings.

Consider first, its effect upon the pocket of the owner of the cattle, whether farmer, breeder or dairyman. A serious percentage of the dairy cows of the continent are affected and the disease is found in even a larger percentage of herds. The disease is commoner in some regions than in others.

It is no uncommon thing to find as many as 70 per cent or 80 per cent of the cows in a herd diseased. These animals will be in various stages of the disease, some recently infected, showing no signs of ill health, others badly diseased but outwardly appearing healthy, while a few are evidently breaking down and wasting away.

The loss to the owner is evident when a cow dies of the disease, or when an apparently healthy cow is slaughtered for beef and found so badly affected as to be unfit for food.

The calves in such a herd do not long remain healthy, they catch the disease before many months old and are a source of loss instead of gain.

Although the disease is most frequently found in herds that are more or less closely confined, such as dairy herds and pure-bred cattle, other herds are by no means free from it. Even range cattle are sometimes affected and the infection spreads in spite of the open air life of the cattle.

Tuberculosis is common among hogs. The public abattoirs report that a serious percentage of all hogs inspected are found to be tuberculous.

The aggregate of these losses among cattle and hogs is enormous, amounting to millions of dollars every year, and materially decreasing the food supply of the country.

Turning to the other aspect of the case, the danger of infection of human beings with tuberculosis from cattle, we have only to consider a few facts to realize the vital importance to every community.

Milk is the staple food of infants and young children and is usually taken in the raw state. If this milk is from a tuberculous cow, it may contain millions of living tubercle germs. Young children fed on such milk often contract the disease, and it is a frequent cause of death among them.

Meat from tuberculous cattle is not so likely to convey the infection for several reasons. It does not so frequently contain the germs, cooking destroys those that may be present, and lastly, meat is not consumed by very young children.

#### Nature of the Disease.

Tuberculosis is contagious or "catching." It spreads from cow to cow in a herd until most of them are affected. This may not attract much notice from the owner, as the disease is slow to develop and a cow may be affected for months and sometimes years, before any signs of ill health are to be seen.

This slow development is the chief reason for the great loss it causes to the farmer. He does not suspect its presence in his herd until perhaps a large number are diseased. If the disease developed rapidly and caused death in a few days, the owner would soon take steps to check its progress and protect the rest of his herd. Tuberculosis is slow and hidden in its course and thus arouse no suspicion until great damage is done.—(Facts from Minnesota Extension Bulletin No. 32).



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DETROIT, MAY 10, 1913.

## CURRENT COMMENT.

So rapid has been the progress of the House debate on the Underwood bill that within a few days at most this general tariff revision will have passed the House and be before the United States Senate for consideration. As previously indicated, the great fight against this bill will be conducted in the Senate, and it is probable that much time will be consumed, not only in debate but in hearings of the varied interests of the country, the representatives of which will seek an opportunity to be heard on this momentous question. It is stated upon good authority that a systematic campaign will be conducted by the manufacturers of the country with the hope of getting important amendments made to the Underwood bill. Also the farmers and special producing interests of some sections of the country will doubtless enter formal protests where there is any hope that such protests might prove effective.

So far as Michigan is concerned, as has been heretofore stated in our columns, there is little that farmers or, in fact, any interests of the state can do along this line that would be at all effective in influencing this legislation. As has been previously noted, it has been conceded by all that there was no hope of preventing the passage of this bill, substantially as drawn, through the lower House of Congress. The big fight against it will be made in the Senate, and as Michigan's two senators will in any event be opposed to the bill, because of their party affiliations and previous declarations upon this question of public policy, there is no opportunity for Michigan people, and especially Michigan farmers, to do any very effective work against this bill since their influence with other than Michigan senators would be very small indeed.

This fact has deterred us from commenting upon this pending legislation in a manner which would naturally excite our readers to alarm over its probable effect upon Michigan agriculture. A careful review of the provisions of the Underwood bill cannot but convince any thoughtful man that its primary object is to cheapen the cost of the necessities of life to the consumer, rather than to afford any degree of needed protection to the producer of such necessities, although as a matter of fact, as previously noted, the necessity of providing an adequate revenue has operated to retain at least a semblance of protection on many commodities, even in this bill. Were there any possibility of doing effective work toward securing its amendment in any important particular, which would be helpful to Michigan agriculture, the publishers of the Michigan Farmer would be just as active and contribute just as freely in effort and money to bring about

such a result as they did when the proposed reciprocity agreement with Canada was pending two years ago. But, as above noted, that opportunity is not now afforded and the best available information seems to indicate that the democratic leaders will be able to pass this bill through the Senate, regardless of the strenuous protests which will be registered against it by representatives of the industries affected.

Under these conditions we can perform no better service to our readers than to point out the best course to pursue, as we see it, pending the readjustment of business which will naturally follow the enactment of a radically changed tariff law. At first thought in looking over the schedules of the Underwood bill it would seem that Michigan would be affected by these changes to as great if not a greater degree than any other state.

First mentioned among the changes which will be heard among farmers, particularly in the sugar beet sections of the state, is the proposed change in the sugar schedule. This will result it is stated, in a reduction of the present duty by about 25 per cent with a provision that sugar will be placed on the free list on May 1, 1916. In the intervening period the sugar mills of the state should be able to operate with profit without reduction in the price of the raw material from farmers, although their policy will doubtless be shaped, in some degree at least, with a view to the future.

In other sections where sheep production is a factor the free wool provision of this bill is perhaps more talked of. Fortunately perhaps, the sheep industry is not made a specialty except as a feeding industry on many farms, the bulk of our sheep being kept in small flocks on farms where diversified farming is practiced, which will make this less of a hardship to most farmers than would otherwise be the case.

While meats are put on the free list, a moderate duty is retained on all live stock with the exception of swine, and since the price of meat in this country can scarcely be considered to be above the world price level, no immediate decline in meats or meat products should follow the enactment of this law.

While cream and milk are placed on the free list the duty is retained on butter and cheese, and also upon eggs, which will be likely to protect these industries from any immediate hardship.

Grains, with the exception of rye, still carry a moderate duty, flour, however, being placed on the free list, but with the proviso that it shall be free only from countries which do not impose a duty upon the same products from this country. The duty on beans is reduced from 45c to 25c per bushel. In this case it is difficult to prophesy with any degree of accuracy what the effect may be in admitting foreign grown beans, but under these conditions this great Michigan industry can hardly be destroyed.

Potatoes are placed on the free list, and in a season of limited production this will undoubtedly make considerable difference, although in a season of heavy production like the last it would probably not be noticeable.

A duty of \$2 per ton is retained on hay instead of \$4 as under the present law.

On fruits, such as are grown in Michigan, more adequate duties are levied under the new bill, apples, peaches, quinces, cherries and plums retaining a duty of 10c per bushel of 50 pounds, edible berries one-half cent per quart and grapes 25 cents per cubic foot of capacity of the package in which they are packed.

The above covers the principal items of the staple agricultural products of Michigan. While the situation might be better from the standpoint of all who are interested in Michigan agriculture, still it might be even worse. If the hopes of the democratic leaders are carried out and prices of necessities are lowered or made more uniform through the operation of this law, but one avenue lies open to the producers of Michigan and that is by intensive culture, by the use of more labor-saving methods, to cheapen the cost of production to a degree which will still yield them the approximate profit which they received under the higher price level. There is a likelihood that if the result aimed at is brought about the cost of labor will also be cheapened.

We have indulged in this plain talk with regard to the pending tariff bill, not only as an assurance to our readers that we would gladly do anything to aid in changing many of its provisions were that possible, but as well to present such

items of encouragement as may be gleaned from an analysis of the same in the light of present conditions of Michigan agriculture, to the end that needless alarm may not be indulged in, but that all practical steps may be taken to forestall any possible effect of this change in tariff conditions by improving our methods and cheapening the cost of production until opportunity is afforded to bring about in some other manner changes in these schedules which may be demonstrated as necessary to the prosperity of our industries.

Michigan is an exceptionally prosperous agricultural state. Its widely diversified farming is an insurance against general crop failures and no change in tariff policy can permanently injure her agriculture.

**Tax Legislation.** Pursuant to our purpose expressed in the last issue to briefly review the legislation enacted by the Legislature in the session just closed during the ninety days which will elapse between the final adjournment and the date when these laws will be put into force, we will take up in this comment one phase of legislation enacted. There is perhaps no matter of greater interest to all the people of the state, and especially country people, than that of taxation. Hence in this comment we will touch upon the tax legislation enacted by the Legislature during its recent session.

Perhaps the most important act in this class was that giving the State Tax Commission supervisory power over all municipal and township assessing officers and authorizing them to call upon the attorney general or prosecuting attorney to prosecute before the Governor any charges against an assessing officer who fails to assess the property within his jurisdiction at its true cash value as required by constitutional provision and providing that if such charges are substantiated the Governor may remove the assessing officer from office. This legislation is in line with that enacted by previous legislatures in broadening the power of the State Tax Commission. At the present time the State Tax Commission is continuing its work of the previous year in looking over all the property in several counties in order to ascertain its true cash value for assessing purposes. This broadening of the law will enable the tax commissioners to put all of the property of the state on the assessment rolls at its true cash value prior to the next equalization of assessed valuation of the several counties of the state and will put them in a position to bring about a more just equalization of property values than has ever previously been made in Michigan. In the end this placing of all property upon the assessment rolls at its actual cash value will not increase the burden of taxation paid by any particular property, although the assessed valuation of the property upon which state taxes are apportioned will, in the opinion of some members of the Tax Commission at least, be increased approximately one-third. It may in effect decrease to some extent the rate of taxes paid by corporations now assessed at the average rate which other property pays throughout the state, but it is probable that here again cash values will be readjusted as upon other classes of property, so that, carried out in accordance with its spirit, this law will tend toward justice in the equalization of the burden of general taxation rather than favor any kind or class of property over any other.

Perhaps the item of tax legislation of next greatest interest, to many readers at least, will be the act providing for a uniform tax of 50 cents per horsepower on all motor vehicles in lieu of all other local and state taxes against such property. The income from this tax will go into the good roads fund and it is estimated that the amount derived from this source will reach \$600,000 annually at the start.

Another act requires the members of the State Tax Commission to devote their entire time to the duties of their office and increases their salaries to \$3,500 per annum.

Another act requires the county treasurer to notify property owners by registered mail 30 days before their property is to be sold for delinquent taxes, thus giving them an opportunity to redeem their property if they are able and willing to do so.

Another act previously mentioned in these columns provides that the county treasurer shall certify on deeds presented for certificate that all taxes are paid, price level in cents for the last period

that the owner called for that purpose, then the owner must be notified if any errors should be made and any items of unpaid taxes found to be charged against the property.

The inheritance tax law was amended, requiring the payment of taxes on the stock or bonds of foreign corporations, when such securities are owned by an estate, before valid transfers of such stocks or bonds can be made. This amendment also provides that bequests made to grandparents up to \$5,000 shall be exempt from inheritance taxes, grandparents not being included with parents, husband, wife and children in the exemption under the previous law. The amount of exemption of all of the above is raised from \$2,000 to \$5,000.

Another act which completes the list of important tax legislation enacted at the recent session, provides for the payment of one-half of one per cent upon bonds and security investments issued by corporations of Michigan and other states in lieu of all other taxes, the same as mortgages are now assessed under the present law.

**Cold Storage and Food Prices.** In a recent issue of the Michigan Farmer some statistics recently prepared by the Department of Agriculture, from data collected in an investigation of cold storage in the United States, were published. These statistics shed considerable light upon the economy of cold storage and when considered in connection with an investigation of the influence of cold storage upon the price for foodstuffs stored are still more illuminating.

In studying this problem of the effect of cold storage of foodstuffs on prices of same, the statistics with regard to the fraction of such products so stored are surprising in that they show such a relatively small percentage. The statistics above mentioned show that only about 3.1 per cent of the year's production of fresh beef goes into cold storage; 4.1 per cent of fresh mutton and 11.5 per cent of fresh pork being so stored for varying periods. The percentage of farm and factory produced butter stored during the year is 9.6 per cent and of eggs 15 per cent.

When the aggregate value of this small percentage of foodstuff is considered, however, the showing is more imposing, the estimated value of the 9.6 per cent of butter stored being \$40,000,000 and of the 15 per cent of eggs stored \$64,000,000, while the aggregate value of the above mentioned commodities received in storage during the year was estimated at \$138,000,000 in 1911. These figures further show that by far the larger proportion of most of these products is delivered from storage within 90 days of the date of receipt, with the notable exception of eggs, while practically all of the receipts are delivered within seven months of the date of receipt with the single exception of eggs. The carrying over from the end of the natural storage year is small in all the products, but smallest for eggs, amounting to only 0.2 per cent. The average length of storage for the different commodities was greater in the case of eggs than any other, being 5.91 months.

The cost of storage is shown on this report to be an important factor in the timely movement of products, the report stating that "owners of cold storage commodities must use good judgment and take their goods out of storage before the cost of storage added to the original cost of the goods, and some profit, will raise the total amount of the cost of the goods above the market price." The cost of storage is relatively higher on butter and eggs than any other commodity for the reason that they are held a longer average length of time, being 2.532 cents per pound for butter and 3.505 cents a dozen for eggs.

In investigations conducted to determine the effect of cold storage upon prices of such commodities, the period since 1880 was divided at 1893, the approximate time at which cold storage had grown to be important in its influence upon consumption. Two methods of computation were employed in order that the result might be as accurate as possible. Taking into account the general rise in price of all commodities for the latter period as compared to the period prior to 1893, it was found that a cheapening of cost in the distribution had more than offset any tendency to higher price levels in New York city, so far as butter was concerned, it being conclusively shown that both fresh and cold storage butter was sold in New York on a lower price level in cents for the last period



than the first, although in the United States as a whole there was a tendency toward a higher price level. It is conceded that under the method of monthly redistribution used in computation a slight tendency toward higher price levels was shown in a number of commodities entering into this investigation, although this tendency is not inevitable, as above shown in the case of butter.

The investigation also extended to the influence of cold storage in the maintenance of more uniform prices throughout the year. In butter it is shown there was in New York a marked tendency toward uniformity of price throughout the entire year accompanied by a lower average price to consumers, although in the country at large there was a tendency toward greater uniformity of price for only 11 of the 13 months for which the statistics were taken, while in eggs there was shown to be the same tendency for nine months of the year. It was found, however, that in the matter of fresh beef and pork a tendency toward uniformity of price was shown only for three and five months of the year, respectively, in the two commodities.

Thus the report shows that while in a general way cold storage of foodstuffs has made for a uniformity of price as claimed by cold storage interests, this is not true in all commodities, nor in all years nor periods of years. It is, however, conclusively shown by these reports that under improved methods of distribution such as are now practiced in supplying New York city with butter, there will be an actual cheapening of price to consumers because of the redistribution of supply effected through the storage of small fractions of the total production.

Butter is now largely shipped directly to New York in carload lots by the manufacturing creameries, many of which are co-operative in character, thus eliminating an unnecessary cost in distribution at the producing end of the line. It will thus appear that when other products are more largely handled in this manner, cold storage will not only be a factor in increasing the profit of producers, but will at the same time lower the average price of food products to the consumers in distant centers of consumption.

**The Farm Name a Trade-mark.** The advantage of having the farm home named and using the name on the business stationery has often been discussed in these columns. Desirable as that has been heretofore, a law passed by the Legislature recently adjourned makes it still more desirable, since it is designed to prevent a confusion of farm names in the same section of the country.

This law provides that owners of farms may have registered with the county clerk any name they may select for their farm or ranch, and gives them the exclusive right to use such name in any county. This will prevent confusion of names to a very desirable degree and will also enhance the value of the name of the farm as a business trade-mark.

It has been demonstrated in many instances that where products are grown upon the farm which may be so packed as to reach the consumer in original packages, it pays to have the name of the farm where the commodity was grown on the package, particularly if the quality is kept at a high standard at all times, since customers using a satisfactory article so marked will be sure to want more of the same thing. It would be the part of wisdom for Michigan farmers to take advantage of this law when it goes into effect and register their farm trade-mark with the county clerk, and in the meantime it would be well to consider suitable names for the purpose.

**State Fire Marshal Palmer has issued a proclamation setting apart Thursday, May 15, as "spring clean-up day" for Michigan.** In this proclamation the mayors of cities, fire chiefs, health officers and the teachers and children of public schools are specifically requested to take an interest in this needed work and they are told how they can help in accomplishing the desired results.

It is well to have our attention called to this matter in a specific way. Many times the needed spring clean-up about the farm is too long neglected. Let us all join in this general movement toward better sanitation and cleaner environments about the house and farm, and not delay this important work beyond the date when our city cousins have been officially requested to give it proper attention.

## HAPPENINGS OF THE WEEK.

## National.

On Sunday last twelve persons were injured and property valued at \$150,000 was destroyed by a fire at Sheridan, Ind. Two blocks in the business section of the town were destroyed.

Preparations are already under way by the state department at Washington for bringing the alien land bill passed by the California Legislature before the United States court to make a judicial test of the law. The outcome is anxiously awaited, for should the courts decide favorably to the action of the California Legislature then the national government will be in the position where it must defend the law against Japan. The matter has also focussed attention upon laws of other states which infringe upon treaties with foreign nations. Altogether there are indications of a feeling of unrest that may lead to demands upon the national government which perhaps cannot be complied with, a situation that may require a readjustment of the functions of national and state government insofar as they concern aliens.

The sentences imposed upon Samuel Gompers, Frank Morrison and John Mitchell, officials of the American Federation of Labor, for contempt of court in violation of an injunction of December, 1907, forbidding the officials to institute a boycott of the products of a St. Louis stove company, have been reduced by the court of appeals of the District of Columbia. Mr. Gompers will be imprisoned 30 days instead of one year, while Mr. Morrison and Mr. Mitchell will each be fined \$500 with no jail term.

After a long wait the people of Saginaw are now hopeful of having a public market. Seven years ago the electors voted to establish such an institution but the bonds issued for the purpose were diverted to other uses and until the present time has not been repaid. The common council has now provided that this shall be done. The market will be located in the heart of the city.

The citizens of Grand Rapids are campaigning to raise a fund of \$250,000 for the erection of a new Y. M. C. A. building.

A fire destroyed the plant of the Saginaw Wood Products Co., at Saginaw, and caused a loss of \$75,000 worth of property.

It is the purpose of the federal administration to make a new use of the Department of Commerce, following the enactment of the present tariff bill into law. In the event that wages are cut by concerns where the effect of the new tariff is declared to make such a cut necessary, the department will use its authority to make a thorough investigation to learn whether the claims of the manufacturer are bona fide or not.

The board of education of Detroit has adopted a recommendation which provides that teachers who have been in the service of city schools for seven years be given a year's leave of absence with pay at \$50 a month. The purpose of this arrangement is to give the teachers opportunity to travel and thereby increase their efficiency for future school service. The Wayne County Circuit Court has denied the motion of Detroit saloon keepers who were recently refused licenses for doing further business in the city and who are asking in the motion that a writ of mandamus be issued to compel the common council to reissue their licenses. The matter will probably be carried to the higher courts.

During the past week Detroit has suffered considerable loss from fires. On the last day of March the Detroit Forging Co.'s plant and another building were destroyed, entailing a loss of about \$100,000, while Sunday night a big fire at the Detroit Stock Yards resulted in an estimated loss of \$200,000 more. It is believed that the blaze at the stock yards was of incendiary origin.

## Foreign.

Pope Pius has entirely recovered from his recent illness and is now assuming his regular duties.

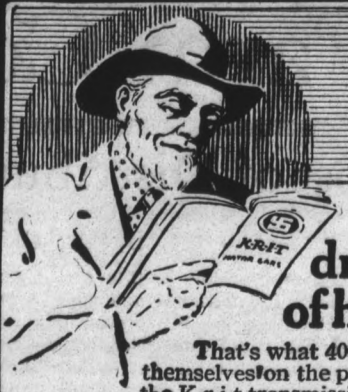
Internal conditions in Mexico are by no means in a settled state. There is a strong censorship over news sent out which prevents little information getting to the press of this country. However, reports from Mexico City to Washington indicate that from 1,200 to 1,500 lives have been lost in engagements outside of Sonora the past week. The blowing up of a railroad train by the followers of Zapata is also stated to have killed 150 men. There is fighting between the federales and rebels south of Oriz. Feeling against Americans is running high.

The Duchess of Connaught, wife of the Governor-General of Canada, is reported seriously ill at London, England. Two operations have failed to relieve her.

Jeanne d'Arc was honored by France May 4, with fetes, the first of the kind in which all parties and classes of the country have participated.

The little government of Montenegro has finally submitted to the demands of the powers and retired from the stronghold, Scutari, which she recently captured from Turkey after a long siege. Austria continues to gather troops and prepare for a war campaign, not, however, against Montenegro, but to put down lawlessness and anarchy now said to be general in Albania. Italy will co-operate with Austria in this task. The action of Montenegro relieves the European powers of solving a delicate problem and probably is the first step toward the general settlement of trouble in that part of Europe.

General Tancrede Auguste, president of Haiti, died last Friday night. Congress re-assembled on May 4 and elected Michel Oerste to succeed the late executive. During the funeral of Auguste and the session of the Legislature, riots were frequent in the streets of Port-Au-Prince, the capital, and troops were called out to restore order.



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# Farm Commerce.

## Cost of Distributing Food Products

By Dr. CLYDE L. KING.

THE first article in this series dealt with the national agencies in food distribution. It pointed out that, through the rapid and extensive development of facilities for carriage of interstate freights and oceanic commerce, through the perfection of cold storage, with the resultant possibility of hauling perishable foods long distances, through the nation-wide and, indeed, world-wide reports on crop conditions, through the custom of selling in transit and of arriving at wholesale quotations on farm produce, the wholesale price of the output of the farm was fixed by forces over which the eastern farmer had relatively little control. That is why the price of farm products varies nominally in different parts of the United States, due to difference in freightage charges, etc., yet actually the wholesale price is now about the same. It is the purpose of this article to discuss the methods and cost of distributing food products from the farmer to the consumer, with special reference not to transportation facilities, but to the hands through which they pass.

Just what share of consumers' prices goes to the man who raises the food? Within the last year, two reports have

some instances the freight charge has been estimated from points where the freight is greatest, while in other instances the minimum transportation charge is taken; all, however, are typical transportation costs.

The third item indicated in the table is the price received by "the jobber." By the jobber is meant the huckster who goes from farm to farm buying farmers' produce, or the country store man who sells to commission men, or the jobbers who buy for large wholesale houses or large Philadelphia stores. The prices received by the wholesaler were secured from the daily reports of wholesale prices.

The prices received by the retailer were taken from the reports sent in from the Department of Public Works. These reports were carefully prepared at the instigation of the director, by the leading employees in the Department. There were, in most instances, a half dozen or more reports from each of the wards in the city. If there were not more than two reports from each ward, the data were not included, unless further investigation proved these reports to be typical. Every possible effort was made

paid by the consumer, for it is this round-about method that the majority of country produce still takes.

That this table is typical is amply supported by evidence from all quarters. Of special significance is the study made under date of August, 1912, by a committee on market, prices and costs to the New York State Food Investigating Commission on

**Wholesalers' vs. Retailers' Prices in New York City.**

A table in this report shows how much is added to the cost of a food product from the time it lands at the terminal in New York City, that is, the cost to the wholesaler, until it arrives in the hands of the consumer, that is, retailers' prices. In other words, the figures from this table, as given below, are the per cents the retailer adds to wholesaler's prices, that is, the cost of distributing food products within the city. Thus the table reveals an increase from the terminal to the consumer of 17 per cent per pound for creamery butter, and from 19 to 43 per cent for eggs. Meat prices increased from 25 to 70 per cent. Fish prices increased from 25 per cent for blue fish to 85 per cent for halibut; 160 per cent for haddock and 180 per cent for cod. Canned goods increased from 20 per cent for a low grade of pork and beans to 70 per cent for string beans, 72 per cent for peas and 80 per cent for a can of corn. Staple groceries increased per pound from 20 per cent for flour to 33 per cent for sugar and rolled oats, to 100 per cent for rice, 112 per cent for tea and 114 per cent for codfish. Fruit increases were: Peaches, quart, 67 per cent; Baldwin apples, pound, 116 per cent; bananas, 135 per cent, and lemons, 122 per cent per

Table giving the price received by the Producer and each middleman and the Per Cent Increase of each price over the Preceding Price, together with the Total Increase of Consumers' Prices over Producers' Prices.

	Farmer's Selling Price.	Price at Freight Terminal.	% Increase for Freight.	Jobber's (1) Selling Price.	% Increase.	Wholesaler's Selling Price.	% Increase.	Retailer's Selling Price.	% Increase.	Total % Increase.
Butter (low grade) per lb.....	\$0.18 1/2	\$0.19	2	\$0.21 1/2	13	\$0.24	11	\$0.32 @ .38	33 @ 58	73 @ 105
Butter (high grade) per lb.....	.23	.23 1/2	2	.26	10	.29	11	.40 @ .45	38 @ 55	74 @ 96
Potatoes (low grade) per bu. (3)	.53	.62	17	.68	9	.75	10	1.10 @ 1.30	46 @ 73	108 @ 145
Potatoes (high grade) per bu....	.63	.72	14	.80	11	.90	12	1.30 @ 1.60	44 @ 78	106 @ 154
Eggs (low grade) (2) per dozen....	.11	.12	9	.13 1/2	12	.15	11	.25 @ .30	67 @ 100	121 @ 173
Eggs (high grade) per dozen....	.21	.22	4	.24	10	.27	11	.34	30	67
Huckleberries (l'w g.) per qt....	.04 1/2	.05 1/2	22	.06	9	.07	16	.12	71	166
Huckleberries (h. g.) per qt.....	.07	.08	14	.10	25	.11	10	.15	36	114
Blackberries (l'w gd.) per qt....	.04	.05	25	.05 1/2	10	.06	13	.12	100	200
Blackberries (h. gd.) per qt.....	.06	.07	16	.08	14	.09	12	.15	66	150
Live poultry (l'w gd.) per lb....	.06	.06 1/2	7	.09	38	.11	22	.22	100	266
Corn per dozen .....	.15							.40		167
Tomatoes per peck (3) .....	.32	.32 1/2	1	.36	10	.40	11	.80	100	150

(1) For definition see article.

(2) In many cases these eggs are candled and part of them sold as freshly gathered eggs—the others being sold as "rots and spots," etc. In other cases, however, they are sold to the consumer as eggs fresh from the farm. Thus one man writes that they sell them as such and asks: "What is the effect of the egg law on us?"

(3) This is the total price when sold in the quantities the average purchaser buys; that is, a basket of potatoes and a quarter or half peck of tomatoes.

been issued that attempt to answer this question for Philadelphia and New York City, respectively. The first was made by the author of this article to Mayor Rudolph Blankenburg on Philadelphia prices; the other, by the committee on markets, prices and costs of the New York State Food Investigating Commission. The former was made in October; the latter in August, of 1912. These reports are typical of prices received by farmers and paid by city dwellers.

**Farmers' vs. Consumers' Prices in Philadelphia.**

The accompanying table gives the prices received by the farmer for certain types of produce shipped into Philadelphia from the outlying counties. It also gives the prices paid by each set of middlemen and the consumer, and the per cents added thereby.

The first item indicated in this table is the price received by those farmers whose sales are not large enough to warrant their dealing directly with the commission men. The price received by the farmers who sell direct to commission men would be the price indicated for the "jobber." But the average farmer, whose sales are not large and who is not in telephonic communication with commission houses, usually sells through some intermediary, who in turn sells to the commission man. The price received by the farmer was secured from the price paid by country stores and other jobbers and from replies to scores of letters sent out to farmers in all directions from Philadelphia. This letter particularly asked the farmers to give the prices on all produce that they had sold during the weeks ending July 20 and 27.

The cost of freight given as the second item is an estimate for freight on small quantities for distances of from 25 to 50 miles. Often it is the trolley rate, although sometimes it is the cost of transportation by steam rail, or the estimated cost of wagon transportation. In

to secure reports for the same grade of goods and for the same week. Both the farmers and the employees of the Department of Public Works were asked to designate the grade of goods and to designate with care the exact date of the sale or purchase. The price indicated for any article in the table is, therefore, a price for a given week.

From this table it will be noted that the excess of the price paid by the consumer over the price received by producer ranges from 67 per cent to 266 per cent, the average being 136 per cent. This is an average increase of consumers' over producers' prices, as the "prices received by the farmer" are those received by the average farmer, who does not sell in large lots, and the "prices paid by the consumer," who buys in relatively small quantities.

**Where the Costs of Distributing Foods Go.**

An analysis of this table shows that the costs of food distribution go for the following purposes:

1. A professional huckster or a country storeman buys from the eastern farmer and sells to the Philadelphia wholesaler. As a rule, he makes around 10 per cent of the price he pays the farmer, plus the freight to terminal, thus increasing the total cost of the goods from nine to 25 per cent.

2. From one to 20 per cent of what the farmer receives goes for freight to Philadelphia terminals.

3. Then the wholesaler deducts from five to 10 per cent for selling it to the retailer, thereby increasing the price to the consumer on the average of 11 per cent over the jobber's price.

4. Then for handling the goods and selling them to the consumer, the retailer charges from 30 to 100 per cent increase over the wholesaler's price, with an average of 45 per cent.

It is not meant that all farmers' produce goes through just these channels, but it is very clear that it is this method of food distribution that fixes the price

dozen; while vegetables increased from 60 per cent per pint box of tomatoes to 100 per cent for cabbage, carrots and beets, to 150 per cent for celery. Of the 60 products enumerated, 26 increased from 17 to 50 per cent, 21 from 50 to 100 per cent, and 14 over 100 per cent.

And these prices, it must be remembered, are the costs added to foodstuffs by the retailers only, including, of course, cartage and delivery charges.

**What these Costs Mean to the Consumer and the Farmer.**

It is difficult for the imagination to grasp just what these costs of distributing farm produce mean in lower prices to farmers and higher prices to consumers. The consumers of New York City pay annually around \$645,000,000 for food. This food costs at the terminal \$350,000,000. That is to say, the people of New York City are paying over \$150,000,000 each year to have their foodstuffs taken from the terminal to their kitchens. At a cost of 14 per cent per meal per person, for all classes in Philadelphia, high and low, rich and poor, Philadelphia citizens are spending \$225,000,000 every year for food. Of this amount, they pay something less than \$75,000,000 each year in cartage and delivery costs and in retailers' profits. Of the \$146,000,000 paid annually by the people of New York City for eggs, milk, onions and potatoes, less than \$50,000,000 was received by the men who raised these crops. For certain produce for which the eastern farmer last summer received \$1, the Philadelphia consumer paid \$2.35.

Isn't it needless to point out other results of this method of distributing food products? Isn't it clear that the interests of every farmer and every consumer point to the necessity for developing a cheaper method of food distribution whereby at least much of the handling and the profits of a few of the middlemen may be eliminated? All are interested in cheaper costs for food distribution. The farmer is, of course, because it means



higher prices; the consumer is, because that is his only hope for lower prices. So it is a question of the city as well as the country. If our urban dwellers are to have released a larger share of their incomes for other than subsistence purposes, these food costs must be reduced. Probably half of them now spend annually nearly half of their income for food. In the future that city will have the best civic and industrial prosperity which first perfects plans whereby subsistence costs may be reduced to its each and every citizen. In the past, city growth depended on the exploitation of virgin resources and in the development of new industries. From now on, city growth must hinge more and more largely upon community efficiency, expressed in lower living costs. The food problem is vitally wrapped up with the solution of the city's industrial supremacy and the extension of its industrial boundaries. Thus Philadelphia's every interest will be enhanced by placing its \$225,000,000 yearly food purchasing power as near as possible to the gate of the farmers from whom the food supply must be purchased.

Moreover, the manufacturer and the employer of labor should be particularly interested in a reduction of the food supply costs, and in perfecting a closer industrial unity between the city and all of the surrounding agricultural communities. According to all statistics available in 1904, over 60 per cent of the males, at least 6 years of age, employed in manufacturing, mining, trade, transportation and other occupations associated with industrial life, were earning less than \$626 per annum, or about \$2.00 a day, while 30 per cent were receiving between \$626 and \$1,000, and only 10 per cent earned \$1,000 per annum. If to these, the agricultural laborers are added, 65 per cent of all laborers in the United States receive less than \$626 annually, 27 per cent from \$626 to \$1,000, and only eight per cent \$1,000 or above.

This means that half of the present total yearly income of the city wage-earners must be spent for food; and this means, with a family of five, that the food cost per day must not be over 23 cents per family, or five cents per person per meal. Now the labor employer, if he wishes contented labor, and the city, if it wishes well-nourished citizens, must squarely face this food problem. There are only two ways by which it can be solved. First, by increasing the money wages of the laborer, and second, by increasing the actual wage through a reduction of living costs. Any plan whatsoever, therefore, that will tend to have any effect upon lowering food costs should have the hearty co-operation not only of the city as such but of every manufacturer or other employer and all others interested in the wage-earning class.

It is to plans for lowering food costs that the remaining papers in this series are directed.

## CROP AND MARKET NOTES.

**Lapeer Co., May 3.**—Extra fine weather. Oats not all in yet, but some are plowing now for corn, potatoes, etc. Another good rain would be the proper thing at present. Ground some hard this spring, some fields plow up chunky. Some farmers are undecided on the sugar beet question, whether to go in for a crop this season or not on account of the death of protection and paralysis of business. Orchards are profuse with blossoms. Meadows and pastures are looking well and dry feeding for stock is closing up for this spring. Spring pigs high in prices, \$3@4 each and scarce at that. Hay prices lower. Potatoes 30c.

**Livingston Co., May 3.**—The weather has been very favorable for farmers to rush their work along and as a result considerable work has been accomplished, probably one-third of the corn ground is plowed at this date. Prospects for a profitable price for wool are not very encouraging; buyers now offering around 18c per lb. for good clips. Potatoes are plentiful at 30c per bu. The bean market is beginning to liven up some.

**Emmet Co., May 1.**—The last half of April was fairly favorable for farming operations, and now the weather is simply great. Tree buds are beginning to open, and wheat, rye and meadows are coming on nicely. Spring seedling and other farm work advancing rapidly. Hay, \$13; straw \$9; eggs, 16c; butter, dairy, 30c.

**Shiawassee Co., April 28.**—Cold wave, accompanied with rain, prevailing for the past three days. Roads nearly as bad as early spring. Wheat looking fine and little injured by the excessive water last spring. Rye is also making splendid growth. Oat seedling about half done, a large acreage being seeded. Farmers are undecided as to growing beans and sugar beets, the low price not encouraging. A large number of farmers are considering buying cows and going into the dairy business and feeding up their farm-grown grains. Several new barns are being built and a number yet to construct. Much interest is being shown in the county road system, adopted last spring. (Continued on page 574).

## Veterinary.

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

Advice through this department is free to our subscribers. Each communication should state history and symptoms of the case in full; also name and address of writer. Initials only will be published. Many queries are answered that apply to the same ailments. If this column is watched carefully you will probably find the desired information in a reply that has been made to someone else. When reply by mail is requested, it becomes private practice, and a fee of \$1.00 must accompany the letter.

**Thrush.**—I have a driving horse that has thrush in right fore foot. I have tried to cure it with white vitriol, but failed. L. D. H., Millington, Mich.—The foot should be kept clean and dry, the diseased portion of frog cut off, then apply calomel twice a day and he will get well.

**Wolf Tooth.**—I have a three-year-old colt that has a wolf tooth and I am told by a neighbor that if it is not pulled out it may cause blindness. Do you consider it necessary to have it taken out? W. N., Wexford county, Mich.—Wolf teeth should be extracted, but if left in seldom do any harm.

**Articular Rheumatism.**—I have a mare six years old that has been driven on mail route steadily for over two years, and for the past 12 months has shown some soreness in left fore leg. Her pastern, shin and knee of lame leg is some inflamed but not swollen. One year ago she was quite lame, but seemingly recovered and went fairly well until four weeks ago. I removed shoes and stood front feet in wet clay, but she is not much better. H. E. F., Spruce, Mich.—Give your mare 1 1/2 drs. of sodium salicylate at a dose in feed three times a day and apply one part turpentine, one part aqua ammonia and four parts soap liniment to lame leg twice a day.

**Periodic Ophthalmia.**—Whenever I work my black horse hard, one of his eyes becomes sore and with a few days' rest the eyes seem to clear. The remedy you prescribed for my father's horse cured him quickly. A. R. S., Scottville, Mich.—Your horse suffers from periodic ophthalmia, a disease that is considered incurable. His bowels should be kept open; apply the following eye lotion to eye three times a day: Dissolve 40 grs. boracic acid and 40 grs. borate of soda in 4 ozs. of clean boiled water. Give him 2 drs. Donovan's solution at a dose three times a day for the next 30 days.

**Dropsy.**—I have a mare that must be about 20 years old, which was due to foal April 7 and has not yet dropped her colt. There is considerable swelling under belly extending from udder to navel, and I might say that this small mare was bred to a large horse. She seems to be in fairly good health and runs in a large box stall. C. S., Trout Creek, Mich.—Feed your mare enough bran mash to open her bowels, exercise her more, clean her stall thoroughly and supply her with plenty of clean bedding and give her a teaspoonful of powdered nitrate of potash at a dose in feed three times a day. The swelling under abdomen will disappear soon after she foals.

**Garget—Scours.**—I have a ten-year-old cow fresh six weeks ago, with one teat slightly obstructed which caused me to use milking tube; now the whole quarter is swollen hard and inflamed. I would also like to know what to do for a five-week-old calf that scours. F. W. S., Lapeer, Mich.—The quarter of udder may perhaps have been diseased by using an infected milking tube. When a milking tube is used, great care should be exercised in cleaning the instrument every time it is used. The tube should be boiled for ten minutes or else dipped in a five per cent solution of carbolic acid; or burn tube in a flame for a minute or two and then wipe it clean. Apply one part iodine and 20 parts fresh lard to inflamed udder once a day. Give your calf 10 grs. salol at a dose four times a day and his pen should be thoroughly cleaned and disinfected.

**Hole in Side of Udder.**—I have a Jersey heifer that came fresh a few days ago and while milking her I discovered a hole in udder where she leaks milk. How can I stop milk flowing from this opening? J. B. T., Dowagiac, Mich.—Scarify edge of opening, stitch closely, using silkworm or catgut material for sewing, and apply equal parts oxide of zinc, powdered alum and boracic acid to wound twice a day.

**Eczema.**—The hair around eyes, on head, breast and legs shed and the skin gives off a bad odor. The sore part seems to itch and I imagine causes some pain. E. H. F., Flint, Mich.—Apply one part chinosol and 250 parts water; or apply any one of the coal tar disinfectants that are regularly advertised in this paper. Give 10 grs. bromide of soda at a dose three times a day.

**Navel Ill.**—I find the veterinary column of the Michigan Farmer very helpful, and would like to know a little more about disinfecting navel of young colt. H. L. M., Levering, Mich.—It is needless for me to say that scrupulous cleanliness in the stable is one of the preventatives and it is always a good plan to have a very clean box stall for your mare to foal in. The navel cord should be tied with either a silk or linen string, dipped in a three per cent solution of carbolic acid. It is also good practice to split navel cord and paint center with iodine one part and glycerine 10 parts, or dust on some iodoform before tying cord. The stub should be wet with either a three

(Continued on page 575).



**Cooper Dip**  
ONE DIPPING KILLS ALL TICKS and keeps SHEEP free from fresh attacks. Used on 250 million sheep annually. Increases quantity and quality of wool. Improves appearance and condition of flock. If dealer can't supply you send \$1.75 for 25 packets. Shipments can be made from New York City. Specially illustrated booklet on "Ticks" sent free for asking, a post card brings it.  
Wm. Cooper & Nephews, Chicago, Ill.  
Dept. 23 64 W. Illinois St.

## BREEDERS' DIRECTORY.

## CATTLE.

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

## Aberdeen-Angus.

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

## GUERNSEY BULL CALVES, YORKSHIRE PIGS. Good Stock.

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

**GUERNSEY BULL CALF**—Six dams have yearly records of 845, 722, 604, 518, 441, 418 lbs. of butter respectively. Bargain prices. G. A. WIGENT, Watervliet, Mich.

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

**GUERNSEYS**—Bull calves, reg., tuberculin tested. Splendid breeding. Moderate prices. Windermere Farm, Watervliet, Mich. J. K. Blatchford, Auditorium Tower, Chicago, Ill.

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

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

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

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

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

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

## "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.  
McPHERSON FARMS CO., Howell, Michigan.

**HOLSTEIN BULLS.**  
3 to 8 months old, \$75 to \$300. Don't buy until you get our pedigrees and prices. LONG BEACH FARMS, Augusta, Kalamazoo Co., Mich.

**Holstein Bull** most old out of grand daughter of Pietertje Hengerveld's Count de Kol by a grandson of Pontiac Korndyke who has eleven thirty pound daughters fifty dollars delivered. Hobart W. Fay, Mason, Mich.

## Service Bulls and Bull Calves

Sired by Johanna Concordia Champion,

whose sire's dam and dam's dam average 34.06 lbs. butter in 7 days, average fat 4.67%. Also cows and heifers bred to him. I can offer you bulls at bargain prices. Try me and see, and do it quick.

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## Bigelow's Holstein Farms

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

## FAIR LAWN FARM

Offers the following young

## Holstein Friesian Bull

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Fine in form and breeding. Beautifully marked.

Sure to please you.

REED &amp; KNOWLES, Howell, Mich.

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

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

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

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

**FOR SALE—JERSEY BULL CALF**, high class ancestry. WATERMAN & WATERMAN, Meadowland Farm, R.F.D. 6, Ann Arbor, Mich.

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

**Scotch & Scotch Top** Bull calves 4 to 7 months old, also young cows and heifers bred to Bright Sultan. W. B. McQUILLAN, Chilson, Mich., 1/2 mile E. of Davis Crossing on A. A. R. R.

**2 Reg. Shorthorn Bulls**  
9 and 17 mos. old, color red. Write or come and see. W. M. D. McMULLEN, R. 9, Adrian, Michigan.

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

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

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

## SHEEP.

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

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

**"OXFORDOWN SHEEP"**—Descriptive and illustrated article sent free. PARSONS, the Sheep Man of the GRAND LEDGE, MICH.

**Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES.** 24 miles E. Morrice, on G. T. R. R. and M. U. R. J. Q. A. COOK.

**SHROPSHIRE & DUROCS**  
KOFE-KON FARM, Kinderhook, Michigan.

## HOGS.

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

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

**CHESTER WHITES—SONS AND ERS OF CHAMPIONS and GRAD CHAMPIONS** Spring pigs now weaned and ready for shipment. BONNIE BAE FARM, Algonac, Michigan.

**For Sale**—Essex pigs, 6 to 8 weeks old, from Michigan's oldest herd. Save money by buying while young. Send for catalog and low prices. E. P. OLIVER, 804 Oak St., Flint, Mich.

**O. I. C.**—Big growthy type, last fall gilts and this spring farrow to offer. Very good stock. Scott No. 1 head of herd. Farm 1/2 mile west of depot, OTTO B. SCHULZE, Nashville, Mich.

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

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

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

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

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

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

**O. I. C's**—Bred sows, March pigs pairs and trios. Buff Rock Eggs \$150 per 15. FRED NICKEL, R. 1, Monroe, Michigan.

**O. I. C.**—Registered Boar, 225 lbs. A few bred gilts of extra quality. GEO. P. ANDREWS, Danville, Ingham Co., Mich.

**O. I. C's**—All ages, growthy and large. Males ready, 100 to select from. Attractive prices on young stock. H. H. JUMP, Munith, Mich.

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

**MALES ALL SOLD BUT ONE**—Fancy fall gilts for sale. JOHN McNICOLL, Station A, Bay City, Mich. Route 4, Box 51.

**DUROCS BRED SOWS** all sold. Service Boars \$40 to \$50. January pigs \$12 to \$15, either sex. Satisfaction guaranteed. F. B. Cook, Route 2, Stanwood, Mich.

**DUROC JERSEYS—BRED GILTS FOR SALE.**  
CAREY U. EDMONDS, Hastings, Michigan.

**DUROC JERSEY GILTS**—Bred for July and August farrow. Write for prices. I pay the express. J. H. BANGHART, Lansing, Mich.

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

## Butler's Big Bone Poland Chinas

We have a few nice fall boars, also some big sows bred for fall farrow. Our hogs are all cholera proof. J. C. BUTLER, Portland, Michigan.

**Big Type Poland China Pigs** at close prices. Eggs from big business B.F. Rocks, \$1 per 15. ROBERT NEVE, Pierson, Mich.

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

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

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

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

## Lillie Farmstead YORKSHIRES

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



# Markets.

## GRAINS AND SEEDS.

May 7, 1913.

**Wheat.**—The market for this cereal settled to a lower level during the past week. Two important influences have apparently worked to bring about this result. One was the improvement in crop conditions in this country which put aside for the time being the possibility of damage to the growing crop from drouth and insect pests, and having supplied plenty of moisture, especially in the southwest. The other influence is the change in political affairs in Europe where, because of the submission of Montenegro to the demands of the powers, a delicate international situation has been solved and the probability for peace in the immediate future is more likely than it has been for a considerable time past. Besides these two bearish features, Russia and India report favorable crop conditions. On the other hand the world's visible supply shows a heavy decrease, a big interest is being taken in July wheat and export sales have been fairly large in Chicago and Duluth. Besides the acreage of the spring wheat is reported to be about 1,000,000 acres short of last year's. These bullish features, together with the reduction in price occurring the past two weeks, ought to maintain the market somewhere near present quotations, at least dealers believe that the market is now on a fighting basis. No. 2 red wheat was quoted one year ago at \$1.20 per bu. on the local market. Detroit quotations for the past week are:

	No. 2	No. 1	Red.	White.	July.	Sept.
Thursday	1.07 1/2	1.06 1/2	93 1/2	93 1/2	93	93
Friday	1.07	1.06	93	92 3/4	92 3/4	92 3/4
Saturday	1.07	1.06	92 3/4	92 3/4	92 3/4	92 3/4
Monday	1.06 1/2	1.05 1/2	92 1/2	92 1/2	92	92
Tuesday	1.05 1/2	1.04 1/2	91 1/2	91 1/2	91	91
Wednesday	1.05 1/2	1.04 1/2	91 1/2	91 1/2	91 1/2	91 1/2

Chicago, (May 6).—No. 2 red, \$1.00@1.03; July, 89¢; Sept., 89¢ per bu. New York, (May 6).—May, 98¢; July, 97 1/2¢; Sept., 96 1/2¢ per bu.

**Corn.**—In spite of the decline in wheat corn was maintained at prices corresponding to the closing figures of a week ago. The trade is generally slow, not a very large volume of the cereal changing hands, especially on the local market. Weather conditions have been favorable for preparing land to plant which has furnished news for the buying side of the deal. One year ago No. 3 corn was quoted at 81 1/2¢ per bu. Quotations here for the past week are as follows:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	57	58
Friday	57	58
Saturday	57	58
Monday	57 1/2	58 1/2
Tuesday	57	58
Wednesday	56	58

Chicago, (May 6).—No. 2 corn, 55 1/2¢@56 1/2¢; July, 55¢; Sept., 55 1/2¢.

**Oats.**—Values in this department have continued at the highest quotations of the previous week. There is a small cash demand for the cereal and the stock at the local elevators is not very large. New seedling is promising well. One year ago the price for standard oats on the local market was 63¢ per bu. Quotations are as follows:

	No. 2	Standard.	White.
Thursday	38 1/2	37 1/2	37 1/2
Friday	38 1/2	37 1/2	37 1/2
Saturday	38 1/2	37 1/2	37 1/2
Monday	38 1/2	37 1/2	37 1/2
Tuesday	38 1/2	37 1/2	37 1/2
Wednesday	38 1/2	37 1/2	37 1/2

Chicago, (May 6).—No. 2 white, 36 1/2¢@36 3/4¢; standard, 36¢@36 1/4¢; July, 34 1/2¢; Sept., 34 1/4¢ per bu.

**Beans.**—This product has lost the advance made a week ago. There is no call on the local market and quotations are merely nominal. Immediate, prompt and May shipment are quoted at \$2.05 per bu. at country points.

Chicago, (May 6).—No change in quotations were made here the past week. Trade is slow. Quotations are: Pea beans, hand-picked, fancy, \$2.35@2.40; choice, \$2.30@2.35; prime, \$2.20@2.25; red kidneys, \$2; white kidneys, \$2.50 per bu.

**Clover Seed.**—The only change in local quotations is in alsike which has advanced 25¢, bringing it up to the price of common seed, both being quoted at \$13.25 per bu.

Toledo, (May 6).—Both common and alsike seed have advanced on this market. The former is quoted at \$13.85 for cash and October at \$7.50, while alsike is 40¢ higher at \$13.60 per bu.

**Timothy Seed.**—This market is unchanged. Prime spot is quoted at \$1.75 per bu.

Toledo, (May 6).—Prime, cash and May timothy seed \$1.80 per bu; Sept., \$2.90.

**Rye.**—There is a good demand for this cereal with the price holding steady at last week's advance, the quotation being 64 1/2¢ for No. 2 rye.

**Barley.**—Chicago, (May 6).—The different grades are quoted from 46¢@70¢ per bu. At Milwaukee the price remains steady for malting barley at 52¢@70¢ per bushel.

## FLOUR AND FEEDS.

**Flour.**—Jobbing lots in 1/2 paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.70; second, \$5.20; straight, \$5; spring patent, \$5.10; rye flour, \$4.60 per bbl.

**Feed.**—Detroit jobbing prices in 100-lb. sacks are as follows: Bran, \$21;

coarse middlings, \$21; fine middlings, \$27; cracked corn, \$25; coarse corn meal, \$22.50; corn and oat chop, \$21 per ton. Hay.—All grades rule steady with last week. Carlots on track at Detroit are: No. 1 timothy, \$14.50@15; No. 2, \$12@13; light mixed, \$13.50@14; No. 1 mixed, \$12@13 per ton.

Chicago.—Values have changed with the general level about steady. Choice timothy, \$16@17 per ton; No. 1, \$14@15.50; No. 2 and No. 1 mixed, \$12@13.50; No. 3 and No. 2 mixed, \$7@11; clover, \$7.50@11; alfalfa, choice, \$16@17; do. No. 1, \$14@15; do. No. 2, \$11@13 per ton.

**Straw.**—Steady. Carlot prices on wheat and oat straw on Detroit market are \$8.50 per ton, rye straw, \$9@10 per ton.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—Conditions show little change from last week. Values are from 1 to 2¢ lower all along the line, with dealers still backward about taking more than immediate needs demand. Offerings are showing some increase but still contain a pretty large proportion of product that is lacking in body and flavor. Elgin declined 2¢ on Monday, while in the local market creameries are off 3¢ and other kinds 2¢ from last week's figures. Detroit jobbing prices rule as follows: Fancy creamery, 28¢; firsts, 27¢; dairy, 22¢; packing stock, 20¢ per lb.

Elgin.—Market firm at 28¢. Chicago.—All kinds in pretty good supply and meeting a rather slack demand. Conditions of market not very satisfactory but early improvement is anticipated. Quotations are: Extra creamery, 27 1/2¢@28¢; extra firsts, 27@27 1/2¢; firsts, 26 1/2¢@27¢; seconds, 25 1/2¢@26¢; dairy extras, 27¢; firsts, 26¢; seconds, 24¢; packing stock, 12@23¢ as to quality.

New York.—Steady with values about on a par with other markets. Quotations: Creamery extras, 28 1/2¢@29¢; firsts, 27 1/2¢@28¢; seconds, 26 1/2¢@27¢; state dairy, finest, 28¢@28 1/2¢; good to prime, 26 1/2¢@27 1/2¢; common to fair, 25¢@26¢; packing, 22@24¢ as to quality.

**Eggs.**—The egg market continues remarkably steady, on the whole, about the only fluctuation seen being in ordinary to under-grade stock. The local quotation is a fraction above that of last week. At Detroit current offerings, candled, and cases included, are quoted at 18 1/2¢ per dozen.

Chicago.—No change here beyond a slight widening of quotations on miscellaneous receipts, which indicates that the season has arrived when the quality of such receipts has become more variable than has been the case in some weeks past. Offerings liberal but trade is good. Miscellaneous receipts, cases included, are quoted at 16¢@18¢; do., cases returned 15 1/2¢@17 1/2¢; ordinary firsts, 16¢@17¢; firsts 17¢@18¢; storage packed, firsts, 18¢@19¢ per dozen.

New York.—Firm with values showing slight advances. Fresh gathered extras, 21 1/2¢@22¢; fresh gathered storage packed, firsts, 20¢@21¢; western gathered, whites, 20¢@21 1/2¢.

**Poultry.**—No change this week. Offerings so light that prime stock would probably command a slight premium over the quotations. Quotations are: Live—Spring chickens, 17 1/2¢@18¢; hens, 17 1/2¢@18¢; No. 2 hens, 12¢@13¢; old roosters, 12¢; turkeys, 19¢@20¢; geese, 15¢@15 1/2¢; ducks, 18¢@20¢ per lb.

Chicago.—Trade light and market quiet. Ducks again quoted lower. Quotations on live are: Turkeys, good weight, 15¢; others, 10¢; fowls, good, 16 1/2¢; broilers, \$3.50@7 per dozen; ducks, 15¢; geese, full feathered, 10¢; do., plucked, 7@8¢ per lb; guinea hens, \$4 per dozen.

**Cheese.**—New York flats and brick are quoted lower. Wholesale lots, Michigan flats, new, 13 1/2¢@14¢; old, 16 1/2¢@17¢; New York flats, new, 14 1/2¢@15¢; old, 17¢@17 1/2¢; brick cream 13 1/2¢@14¢; limburger 18¢@19¢.

**Veal.**—In small supply and stronger. Fancy, 12 1/2¢@13¢; common, 10¢@11¢.

Chicago.—Quiet and unchanged under light offerings. Fair to choice, 30¢@110-lbs., 12¢@12 1/2¢; extra fancy stock, 13¢@13 1/2¢; fair to good chunky, 11 1/2¢@12¢.

## FRUITS AND VEGETABLES.

**Apples.**—This fruit is firm with prices slightly improved. The small offerings of southern fruits is helping the deal. Detroit quotations now are: Fancy, per bbl., \$2.50@3.50; ordinary, 75¢@1.50 per bbl.

Chicago.—The best grades of apples are firm at advanced values. Common kinds move slowly. Standard winter varieties, \$2.04@2.25 per bbl.

**Potatoes.**—Although the local market does not reflect the gleam of hope started in the east by the damage to the new potato crop in Virginia and the Carolinas by frost, and by the short supplies of Maine farmers due to recent heavy selling, the dealers of New York and other eastern centers enjoyed a sudden improvement in the deal, and it now seems within the range of possibility for a strong market to develop. Locally prices are up about 3¢. Michigan stock in car lots, 43¢@45¢ per bu.

Chicago.—With receipts continuing to run behind those of a year ago and dealers contending that their stocks are not large there is promise of a little better market. Prices have advanced already and those best informed are looking for further increases. The only drawback is the belief that farmers have many potatoes in reserve. Fancy Michigan stock, 43¢@45¢ per bu; best Wisconsin, 40¢@47¢; Minnesota, 38¢@43¢ per bu.

## WOOL.

Boston.—Although inquiries have been more numerous and several small sales consummated here, the general condition of the trade is practically the same as for some time past. Dealers are waiting and the majority of manufacturers is

taking just enough wool to fill immediate orders. The goods market continues quiet and buyers of men's wear goods have allowed their stocks to become very low. About the only activity reported is that of a few agents of some of the large woolen mills who are in the west buying raw material. The sales in the fleece states that have been reported were made at prices around 18¢ for medium and fine unwashed. The foreign situation remains unchanged with demand steady and firm and the supply moderate. The amount of wool sold here since January 1, aggregates 25,189,800 lbs., compared with 57,130,000 lbs. for the corresponding period in 1912.

## GRAND RAPIDS.

Dressed hogs are lower, farmers getting 10¢@10 1/2¢ this week. In live poultry, hens and spring chickens are worth 15¢. The egg market continues at 17 1/2¢; dairy butter 28¢. Hay is worth \$11@14. The attendance of sellers on the city market Tuesday morning reached 150 and prices were as follows: Pieplant, 35¢; spinach, 80¢@\$1; asparagus, 75¢; potatoes, 45¢; apples, 90¢@1.25. Grain prices are: Wheat, \$1.03; corn, 58¢; oats, 37¢; rye, 45¢; beans, \$1.60.

## THE LIVE STOCK MARKETS.

### Buffalo.

May 13, 1913.

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

Receipts of stock here today as follows: Cattle, 150 cars; hogs, 125 double decks; sheep and lambs, 85 double decks; calves 2,200 head.

With 150 cars of cattle on our market here today, the feeling was slightly better than last week, in fact, some of the heavy cattle sold about 15¢ per cwt. higher. The butchers grades that were fat sold strong to 10¢ higher. At the close of the market there was but a few loads left over, and we anticipate a better feeling from this time on in the trade.

We quote: Best 1350 to 1500-lb. steers, \$8.50@8.75; good to prime 1200 to 1300-lb. do., \$8@8.40; good to prime 1100 to 1200-lb. do., \$7.85@8.25; coarse plainish 1100 to 1200-lb. do., \$7.50@7.75; medium butcher steers, 1000 to 1000, \$7.25@7.85; light do. \$7@7.25; best fat cows, \$6@7; butcher cows, \$5@5.75; light do., \$4.50@5; trimmers, \$3.50@4; best fat heifers, \$7.25@8; medium butcher heifers, \$6.75@7.50; light do., \$6.25@6.50; stock heifers, \$6@6.50; best feeding steers dehorned, \$7.50@7.75; light common stockers, \$6@6.50; prime export bulls, \$7.25@7.50; best butcher bulls, \$6.75@7.25, bologna bulls, \$6.75@7.25; stock bulls, \$5.50@6; best milkers and springers, \$7.50@100; common kind do. \$4@6.

Our market was oversupplied with hogs; fully 30 to 40 double decks more than we expected, 125 loads being on sale. Slow trade all over the west, and with just a moderate demand here, our prices were 15¢@20¢ lower than the best time of Saturday, and the close dull with some unsold. A few closely sorted light hogs sold at \$8.65, with the bulk of the transactions at \$8.60; pigs and lights from \$8.65@8.75; stags, \$6.25@7; roughs, \$7.25@7.60.

The sheep and lamb market was slow today, with prices about a quarter lower than the close of last week; most of the choice lambs selling for \$8.15@8.25; best wethers selling mostly from \$6@6.25; few at \$6.35; ewes, \$5.25@5.75, owing to weight and quality. Look for about steady prices the balance of the week.

We quote: Choice lambs, \$8.15@8.25; cull to fair do., \$5@8; yearlings, \$7@7.25; bucks, \$3@4.50; wethers, \$6.25@6.35; handy ewes, \$5.50@5.75; heavy do., \$5.25@5.50; cull sheep, \$3.50@4; veals, choice to extra, \$9@9.50; fair to good, \$7@8.50; heavy calves, \$4.50@6.

### Chicago.

May 5, 1913.

Cattle. Hogs. Sheep. Received today .....18,000 40,000 22,000 Same day last year. 27,651 38,686 21,158 Received last week. 46,697 132,362 75,221 Same week last year. 56,413 172,274 77,953

This week opens with a much smaller Monday supply of cattle than is usually seen, and early this morning a few sales were made of fat cows and heifers 10¢@15¢ higher, while a sale was made of fancy heavy steers of a better class than last week's offerings at \$9. After these transactions the market became rather slow, and general prices were no better than late last week. Hogs opened 5¢ lower, with a fairly active shipping demand, the best hogs bringing \$8.55, but a little later trade became slow, local buyers holding off, and prices were partly as much as 10¢ lower. Hogs marketed last week averaged 245 lbs., compared with 228 lbs. a year ago, 243 lbs. two years ago and 227 lbs. three years ago. The sheep and lamb trade was dragging, and prices averaged 10¢@15¢ lower.

Cattle prices had quite a shaking up on Monday last week, when the receipts reached nearly 30,000 head, causing a fall of 15¢@25¢ in the general market. As is usual when there is an excessive run, buyers held back, and at the close large numbers had to be carried over unsold to swell the Tuesday offerings. Wednesday saw a rally in prices, part of the decline being recovered, with receipts of only 10,575 head, and the Thursday market was a strong one because of light receipts. The extreme irregularity of the receipts is always a source of great annoyance to sellers, increasing the work of live stock commission firms on the big days, and leaving little to do on the "off days," it being either a feast or a famine. Taking the week as a whole, a large share of the beef steers crossed the scales at \$7.50@8.50, with the choicer lots of heavy steers going at \$8.50@8.90, the top comparing with \$9.25 during the previous week. Common to fair light-weight steers

brought \$7.15@7.95, with sales of medium to prime little yearlings at \$8@8.90. Butchering cows and heifers brought \$5.10@8.60, only a few sales taking place near the highest figures, while cutters went at \$4.45@5, canners at \$3.30@4.40 and bulls at \$5.25@7.50. The stocker and feeder trade was slow, and prices ruled irregularly lower, the less desirable offerings showing the greatest decline as a general rule. Stockers sold at an extreme range of \$5.90@8 for inferior to prime cattle, while feeders carrying much weight sold at \$7.30@8, quality rather than weight being desired by the average buyer. Most stockmen are holding back their well-bred cattle worth finishing, and very few of the better class are offered on the market. Calves had a good sale, with the better class of light-weight vealers going at \$8.50@9.50, and common to fair heavy calves fetching \$5@7.50. Milk and springers sold moderately at \$55@90 per head, inferior cows going to killers. A few prime calves brought 9.75, but at the close \$9.10 took the best female cattle declined sharply, being largely 25¢@35¢ lower.

Hogs continue to show large weekly declines in prices, the eastern shipping demand being most of the time much smaller than was the rule earlier in the year, when this outside buying made competition lively and resulted in hogs selling at extraordinarily high prices. As is the case with cattle and sheep, the marketing of hogs is very unevenly distributed over the week, with extremely liberal offerings on Monday and only moderate supplies on other days, this leading to early declines and later partial recoveries of prices. Light weights continue the best sellers, this being explained by the large consumption of fresh pork, which is much cheaper than any other meats, and pigs of good weight are also selling relatively high. Medium weight butcher hogs sell next best to prime light hogs, and coarse, heavy packing hogs are lowest of anything in the hog market. Most of the stock feeders are making their hogs very good in quality, as well as fairly large in weight. Traders in hogs and provisions are counting on increased receipts for May and June and further reductions in prices. Hogs are still higher than one and two years ago, while provisions are lower than a year ago. At the close of the week hogs went at \$7.90@8.60, with pigs selling at \$6.50@8.45, and stags at \$8.40@8.75. A week earlier the best hogs sold at \$9.

Sheep and lambs continued to sell at extremely high prices last week, even at times when the market was on the down-grade, with lambs comprising the great bulk of the offerings and receipts coming largely shorn. Handy-weight lambs sold the highest invariably, and heavy lambs took the lead in reductions in prices. Conditions a year ago were even more favorable for sellers than they are now, the mutton production then being abnormally small, and prices for fat lambs were extraordinarily high, being far above recent quotations. In a few weeks more Tennessee spring lambs will be marketed freely, and later there will come the crop of Kentucky spring lambs, the latter showing up mainly in July and August. Kentucky reports an average crop of lambs, but Tennessee is said to be a little short. Despite light receipts, the bulk of the sheep and lambs closed irregularly lower than a week ago, the best lambs ruling only 5¢@10¢ lower. Woolled lots closed as follows: Lambs, \$6.25@8.85; yearlings, \$7.10@7.85; wethers, \$6.25@7.25; ewes, \$4.50@7.25; bucks, \$5.25@6.25; clipped lambs brought \$7.15@7.85. A few spring lambs sold at \$11 per 100 lbs.

## CROP AND MARKET NOTES.

(Continued from page 573).

Work has already begun on different parts of the county. Lamb feeders are well pleased with the season's feed. All the fault found is that they did not dare to buy heavier last fall. A large amount of hay will be carried over on account of the low market. Potatoes are being marketed quite liberally. No beans going to market.

**Northern Isabella and Southern Clare Co.'s.**—Ten days of fine weather have given the farmers a chance to get a lot of plowing done and they all seem to be getting there. No plowing was done last fall owing to being so wet. Quite a lot of hay being moved and is selling at \$9@10 per ton. Beans are on the raise at the present time, selling at \$1.70@1.75 per bushel. All kinds of cattle selling well. Farmers just beginning to shear their sheep. Horses selling very high. Butter, 25¢; eggs, 15¢; cream, 32¢.

**Ohio.**  
**Hardin Co., April 30.**—We have been having fine weather for the past two weeks, but some are just getting through with their oat sowing. But very little is plowed for corn yet, only what was plowed in the winter. Everybody is busy, the spring opening up so late. There will be quite an acreage of corn planted this season. Wheat and grass look fair for this year. Butter, 25¢; eggs, 16¢.

**Carroll Co., May 3.**—It has been pretty warm down here for the last few days. Most of the farmers have their oats sown. Lots of ground to be plowed for corn yet. Grass is growing nicely. Sheep are doing well. Some horse buyers looking for young horses, but there are very few colts for sale. Most of the apple orchards are in full bloom. All farmers are very busy. Wheat came through winter in fine shape; also rye.

**Pennsylvania.**  
**Erie Co., May 5.**—Weather very warm with but little rain. Grass looking very good; large outlook for wheat. Farmers are now sowing their oats, and many plowing for corn. The prospects for fruit are good. Cows are very high, ranging from \$50@100. Horses (draft) from \$200@300. Beef cattle, \$8 per cwt; hogs, \$8.50@9 per cwt; calves (veal) from 6¢@9 1/2¢; live; butter, 30¢; eggs, 17¢.



## THIS IS THE FIRST EDITION.

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

## DETROIT LIVE STOCK MARKETS.

## Thursday's Market.

May 1, 1913.

Receipts, 1059. Market steady at Wednesday's prices; 10@15c lower than last week.

We quote: Best dry-fed steers, \$8@8.25; steers and heifers, 1000 to 1200, \$7.25@7.75; do. 800 to 1000, \$6.75@7.25; do that are fat, 500 to 700, \$6@6.75; choice fat cows, \$6.50@6.75; good do., \$5.50@6; common cows, \$4.50@4.75; canners, \$3.50@4.15; choice heavy bulls, \$6.75@7; fair to good bolognas, bulls, \$6.25@6.50; stock bulls, \$5@6; choice feeding steers, 800 to 1,000, \$6.75@7.25; fair do., 800 to 1,000, \$6@6.75; choice stockers, 500 to 700, \$6.50@6.75; fair stockers, 500 to 700, \$5.50@6.25; stock heifers, \$4@5; milkers, large, young, medium age, \$6@7.50; common milkers, \$3.50@5.

Bishop, B. & H. sold Sullivan P. Co. 6 cows av 1005 at \$6, 2 bulls av 1250 at \$6.75, 1 cow weighing 1100 at \$6.35, 4 do av 1052 at \$5.90; to Hammond, S. & Co. 1 steer weighing 970 at \$7.50, 6 do av 766 at \$7, 5 do av 824 at \$7.40, 8 do av 987 at \$7.65, 8 do av 934 at \$7.65, 2 canners av 780 at \$3.75; to Parker, W. & Co. 2 cows av 990 at \$5, 4 do av 1137 at \$6.50, 2 do av 1150 at \$6, 2 do av 920 at \$5, 4 do av 780 at \$5.25, 2 steers av 920 at \$7, 1 bull weighing 1710 at \$7, 1 do weighing 1100 at \$6.50; to Goose 2 cows av \$40 at \$4, 3 butchers av 770 at \$5.50, 4 do av 830 at \$6.75; to Hammond, S. & Co. 8 steers av 1064 at \$7.65; to Rattkowsky 4 cows av 980 at \$5.35; to Hammond, S. & Co. 1 steer weighing 1180 at \$7.75, 8 do av 815 at \$7, 1 cow weighing 910 at \$6, 3 steers av 953 at \$7.50, 1 cow weighing 760 at \$4.50; to Mich. B. Co. 6 cows av 906 at \$6.55, 5 steers av 1004 at \$7.35, 5 cows and bulls av 870 at \$6.50, 4 cows av 1007 at \$6.25, 2 bulls av 1080 at \$6.50, 7 cows av 1023 at \$6.50, 1 steer weighing 780 at \$7; to Parker, W. & Co. 7 cows av 1086 at \$6.50, 3 bulls av 1323 at \$6.75; to Kamman B. Co. 12 steers av 883 at \$7.50.

Haley & M. sold Newton B. Co. 1 canner weighing 870 at \$3.25, 4 butchers av 635 at \$6, 2 do av 995 at \$7, 9 do av 765 at \$7; to Sullivan P. Co. 2 bulls av 1350 at \$6.85, 3 cows av 1000 at \$5.50, 3 cow and bulls av 960 at \$6.25, 1 cow weighing 1370 at \$6.50, 2 do av 1090 at \$5.75, 4 steers av 825 at \$7.30; to Goose 1 cow weighing 960 at \$6.50, 2 do av 870 at \$5.60; to Kull 8 steers av 807 at \$7.30; to Jones 16 stockers av 344 at \$4.90.

Roe Com. Co. sold Breitenbeck 13 cows av 1005 at \$5.50, 1 do weighing 900 at \$5; to Rattkowsky 1 do weighing 870 at \$4.35, 5 do av 1072 at \$5.65; to Sullivan P. Co. 1 heifer weighing 670 at \$5, 3 cows av 1100 at \$6.25, 1 do weighing 920 at \$4.50, 12 do av 1125 at \$6.35, 1 do weighing 1000 at \$4; to Donovan 4 do av 817 at \$4.50; to Wyness 2 steers av 1000 at \$7.50, 1 bull weighing 820 at \$6.50, 1 steer weighing 800 at \$7, 4 heifers av 582 at \$5.75; to Hammond, S. & Co. 4 steers av 957 at \$7.60, 2 bulls av 1090 at \$6.50.

Taggart sold Newton B. Co. 1 steer weighing 840 at \$7, 10 do av 991 at \$7.60. Sharp sold Mich. B. Co. 9 cows av 1041 at \$6.15.

Bush Bros. sold Gerisch Market Co., 19 steers av 933 at \$7.50.

Spicer & R. sold Thompson Bros. 1 cow weighing 680 at \$4.25; to Sullivan P. Co. 8 steers av 770 at \$7, 7 cows av 1017 at \$6.25, 6 steers av 1086 at \$7.75, 2 cows av 1010 at \$6, 8 steers av 919 at \$7.45, 1 cow weighing 1020 at \$5, 2 do av 910 at \$6; to Breitenbeck 1 do weighing 1230 at \$6, 29 steers av 800 at \$7; to Goose 6 cows av 981 at \$5, 2 heifers av 855 at \$7; to Donovan 4 steers av 855 at \$7.40, 2 cows av 905 at \$4.75; to Sullivan P. Co. 11 steers av 971 at \$7.50; to Kull 14 butchers av 971 at \$7.50; to Mason B. Co. 12 do av 933 at \$7.50; to Hammond, S. & Co. 34 do av 947 at \$7, 1 bull weighing 1670 at \$7, 7 heifers av 840 at \$7, 9 do av 590 at \$5.75, 2 bulls av 935 at \$6.25; to Mason B. Co. 20 steers av 830 at \$7.20; to Sullivan P. Co. 2 do av 980 at \$7.50, 11 do av 847 at \$7.15, 4 do av 907 at \$7.40; to Hirschleman 11 do av 767 at \$7.10.

Receipts, 973. Market steady at last week's prices. Best, \$9@9.50; others, \$5@8.50; milch cows and springers steady.

Haley & M. sold Goose 25 av 135 at \$9, 13 av 110 at \$8.50, 1 weighing 270 at \$6, 2 av 150 at \$9.25; to Kull 4 av 140 at \$9.25; to Applebaum 6 av 125 at \$9.50; to Burnstine 21 do av 140 at \$9.25.

Weeks sold Burnstine 17 av 130 at \$9. Vaughn Bros. sold same 12 av 135 at \$9.

Roe Com. Co. sold Newton B. Co. 5 av 120 at \$7.50, 9 av 140 at \$9.25; to Sullivan P. Co. 4 av 140 at \$9; to Goose 15 av 135 at \$8.50, 33 av 135 at \$9.25; to Bray 5 av 110 at \$9.25, 2 av 140 at \$9.50.

Sandall sold Goose 8 av 150 at \$8.75. Downing sold Newton B. Co. 9 av 135 at \$8.75.

Bishop, B. & H. sold Sullivan P. Co. 5 av 115 at \$7.50, 10 av 135 at \$9, 1 weighing 100 at \$7.50, 8 av 145 at \$9, 4 av 115 at \$8.50; to Kull 12 av 130 at \$9; to Hammond, S. & Co. 43 av 135 at \$9; to Mich. B. Co. 3 av 110 at \$7.50, 17 av 135 at \$9.50; to Parker, W. & Co. 10 av 140 at \$9, 2 av 215 at \$5.50; to Goose 3 av 125 at \$6.50, 26 av 140 at \$8; to Mich. B. Co. 12 av 135 at \$9; to Rattkowsky 8 av 150 at \$9.25; to Parker, W. & Co. 4 av 130 at \$9, 19 av 120 at \$8.50; to Nagle P. Co. 18 av 110 at \$8.75; to Hammond, S. & Co. 4 av 145 at \$7.50,

12 av 130 at \$9, 26 av 135 at \$9.25, 7 av 110 at \$7.50, 18 av 130 at \$9.25, 2 av 150 at \$7, 16 av 150 at \$9.25, 7 av 115 at \$9; to McGuire 4 av 135 at \$7.50, 19 av 140 at \$9.50, 5 av 150 at \$9.50; to Rattkowsky 4 av 115 at \$8.75; to Sullivan P. Co. 13 av 130 at \$9; to Nagle P. Co. 43 av 140 at \$8.50, 52 av 130 at \$9, 11 av 135 at \$9; to Sullivan P. Co. 5 av 140 at \$9.25, 3 av 140 at \$9.25, 15 av 135 at \$9.25, 6 av 145 at \$9.25; to Hammond, S. & Co. 54 av 130 at \$8.65; to Nagle P. Co. 11 av 135 at \$9.

## Sheep and Lambs.

Receipts, 2278. Market 10@15c lower than last week; quality very common; trade dull. Best lambs, \$7.50; fair do., \$6@7; light to common do., \$4.50@5.50; fair to good sheep, \$5.25@5.50; culls and common, \$3@4.

Sheep market closed weak and 50c lower than the opening.

Bishop, B. & H. sold Nagle P. Co. 53 sheep av 125 at \$5.50, 6 do av 70 at \$2.50, 25 do av 100 at \$5.50; to Harland 9 spring lambs av 50 at \$9; to Sullivan P. Co. 89 lambs av 75 at \$7.50; to Parker, W. & Co. 20 sheep av 90 at \$5.50, 6 do av 95 at \$5.50, 6 do av 125 at \$5.50; to Thompson Bros. 50 lambs av 78 at \$7.50; to Mich. B. Co. 82 do av 88 at \$7.50; to Newton B. Co. 62 do av 70 at \$7.25; to Nagle P. Co. 7 do av 85 at \$7.75, 32 do av 70 at \$7.50, 18 sheep av 105 at \$5, 8 do av 125 at \$5.25; to Fitzpatrick Bros. 18 sheep av 85 at \$3.50, 33 do av 75 at \$4.75, 19 lambs av 50 at \$5, 30 sheep av 95 at \$4.50, 18 do av 80 at \$3.50, 33 do av 90 at \$4.75; to Young 15 lambs av 75 at \$7.50, 67 do av 85 at \$7.50, 16 sheep av 85 at \$5; to Sullivan P. Co. 17 sheep av 120 at \$4; to Davenport 10 do av 70 at \$4.50, 35 do av 105 at \$5.

Spicer & R. sold Thompson Bros. 4 sheep av 105 at \$3.50, 6 do av 100 at \$5.50; to Sullivan P. Co. 7 spring lambs av 60 at \$10; to Newton B. Co. 63 lambs av 70 at \$7.55; to Kull 15 do av 55 at \$6; to Hayes 58 do av 49 at \$4.85; to Thompson Bros. 14 sheep av 90 at \$5.60, 14 lambs av 65 at \$7.50.

Roe Com. Co. sold Bray 15 sheep av 85 at \$5; to Youngs 15 lambs av 75 at \$7.50, 67 do av 75 at \$7.50, 16 sheep av 90 at \$5; to Barlage 10 do av 66 at \$4.50, 37 lambs av 55 at \$6, 80 do av 70 at \$7.50, 28 do av 55 at \$7, 3 spring lambs av 45 at \$9.50, 20 lambs av 55 at \$4.50, 2 sheep av 85 at \$4.

## Hogs.

Receipts, 6023. None sold up to noon; prospects 5c higher than on Wednesday; about 20@25c lower than last week.

Range of prices: Light to good butchers, \$8.80; pigs, \$8.90; mixed, \$8.70@8.75; stags one-third off.

Bishop, B. & H. sold Parker, W. & Co. 2900 av 190 at \$8.80, 815 av 210 at \$8.75, 82 pigs av 120 at \$8.90.

Roe Com. Co. sold Sullivan P. Co. 300 av 190 at \$8.80.

Spicer & R. sold Hammond, S. & Co. 250 av 180 at \$8.80.

Haley & M. sold same 270 av 190 at \$8.80, 140 av 200 at \$8.75.

## Friday's Market.

May 2, 1913.

## Cattle.

Receipts this week, 1222; last week, 1743. Market steady at Thursday's prices. We quote: Best steers, \$8; steers and heifers, 1000 to 1200, \$7.50@8; do. 800 to 1000, \$7.25@7.75; do. that are fat, 500 to 700, \$6.50@7; choice fat cows, \$6.25@6.75; good do., \$6@6.25; common cows, \$5@5.50; canners, \$3.50@4.25; choice heavy bulls, \$7@7.25; fair to good bolognas, bulls, \$6.50@6.75; stock bulls, \$5.50@6; choice feeding steers, 800 to 1000, \$6.50@7; fair do. 800 to 1000, \$6@6.75; choice stockers, 500 to 700, \$6.50@6.75; fair do., 500 to 700, \$5.50@6; stock heifers, \$4.50@5; milkers, large, young, medium age, \$6.50@7.50; common milkers, \$4@6.00.

## Veal Calves.

Receipts this week, 1350; last week, 1065. Market 25c lower than on Thursday. Best, \$8.75@9.25; others, \$5@8; milch cows and springers steady.

## Sheep and Lambs.

Receipts this week, 3106; last week, 4838. Market steady at Thursday's prices. Best lambs, \$7.50; fair do., \$6.50@7; light to common do., \$4.50@6; fair to good sheep, \$4.75@5; culls and common, \$3@4.

## Hogs.

Receipts, this week, 7966; last week, 6247. Market 10c lower than on Thursday. Range of prices: Light to good butchers, \$8.70; pigs, \$8.80; mixed, \$8.65@8.70; stags one-third off.

In Idaho many sheepmen wintered as many good breeding ewes as they could obtain, retaining their ewes, besides buying more, as they had a strong faith in the future of the sheep industry. Otherwise flocks were pretty well marketed, and the high prices prevailing in the markets of the country for fat lambs and sheep resulted in a more thorough shipment than usual. The ranges last summer and autumn were unusually good, and flocks were made fat without any difficulty as a rule. Reports from southern Idaho speak of plenty of good hay and water, rendering the region an ideal one for sheep feeding, but the railroad transportation facilities are very limited, while rates charged are so high as to take a large share of the profits.

S. U. Cowger, of Waukegan, Ill., was in the Chicago market recently with a car load of fat cattle and a car load of choice hogs. The steers were branded westerns that tipped the scales at 1472 lbs. and brought \$9 per 100 lbs. Mr. Cowger purchased them last fall on the Omaha market for \$7 per 100 lbs. and put them on feed in November. They were furnished fodder mornings and ear corn every night, while of late 50 lbs. of alfalfa meal was fed to the 18 head every day, the entire period of feeding extending over 140 days. Mr. Cowger reported an extremely moderate supply of cattle and swine feeding in his part of the country.

## VETERINARY.

(Continued from page 573).

per cent solution of carbolic acid or a one to 1,000 solution of bichloride of mercury and water; or a five per cent solution of coal tar disinfectant. In my practice I have very often covered end of cord with wood tar or collodion. It is not unusual for the attendant to infect colt by having dirty hands or using a dirty string in tying cord.

Shaking Head.—We have a horse eight years old which we raised and seems to work all right on plow, but when we drive him single, he has spells of throwing and shaking his head, acting as if he was crazy. Sometimes we have to stop, let him quieten down and lately he shows it most when going faster than a walk. Mrs. G. T. C., Grass Lake, Mich.—His harness may need adjusting; you may check his head up too high; if fleshy, reduce him; if bowels are constive, keep them loose. Give him 2 drs. of potassium bromide and 1 dr. ground nux vomical at a dose in feed three times a day. He may perhaps suffer from vertigo.

Chronic Heaves.—I bought a mare last February supposed to be ten years old, sound and all right. A month later I discovered she had heaves. Since then she has been getting worse every day until now she is so bad that she refuses to eat. I am anxious to have her put in working condition. Would it be all right to breed her? H. F. B., Fosters, Mich.—Feed no clover, or musty, dusty, badly cured fodder of any kind, and not much bulky food. She should be well nourished on food that is not bulky; also give her 3 drs. Fowler's solution, 1 dr. fluid extract nux vomica and 1/2 oz. fluid extract gentian at a dose in damp feed three times a day. She will perhaps be able to do light work, but you should not work her if she is not eating plenty of nutritious food. I do not approve of using this kind of a mare for breeding purposes.

Heifer Gives Bloody Milk.—I have a Holstein heifer which has been giving bloody milk most of the time for two or three months. She is a very hard milker and in low flesh; the bloody milk comes mostly from one quarter. H. K., Alto, Mich.—There must be an open blood vessel in her quarter and in order to have it heal you must discontinue milking that quarter; therefore, I advise you to draw off milk through a tube and avoid manipulating that portion of the udder.

Barren Cow.—I bought a cow last September which the owner stated had been fresh six weeks and he thought she was with calf again. One week after I bought her she came in heat and after breeding her in three separate heat periods she ceased to come in heat and has not shown any indication of it since. Do you believe she is now with calf? I also have a nine-year-old cow that gives lumpy milk and she will be fresh June 8. I am making no use of her milk and would like to have your advice what to do. C. S., Wayne County, Mich.—Your cow is perhaps with calf and should be left alone and your other cow should be dried.

Foot-rot.—I have been feeding western lambs since last February and nearly all of them are afflicted with sore feet. A crack comes between the toes well back on the heel and in most cases causes lameness; besides, the sores discharge pus. Our local Vet. prescribed sheep dip applied to the feet, but this failed to do any good. I have 118 head that are diseased. I forgot to mention that there is lots of manure in the yard and pens where they are kept. Any information along this line will be greatly appreciated. G. M., Bellevue, Mich.—First of all they should be kept in a clean pen and the ground should be thoroughly soaked with one part carbolic acid and 50 parts water, or copperas water made by dissolving 1/2 lb. powdered sulphate copper in a gallon of water. They should also be driven through a solution of this kind once a day. Your box should be placed in a hallway and the liquid should be about one inch deep. These applications should be made daily. Apply either powdered alum or oxide of zinc to sores after a few days' soaking in the first mentioned lotion.

Nasal Catarrh.—I have a nine-year-old driving horse that has been coughing for the past four or five months and when driving him a white slimy substance comes from both nostrils. But he does not appear to be sick. G. F. S., Linden, Mich.—Give your horse a teaspoonful of powdered sulphate of iron, 1/2 oz. ground gentian and a teaspoonful of powdered nitrate of potash at a dose in feed three times a day.

Indigestion.—Colic.—I have been a reader of the Michigan Farmer for five years and always enjoy reading the veterinary column. Have a 14-year-old horse that shed nicely, is fleshy and apparently thriving, but during the past two weeks has had two attacks of colic. I am feeding ground oats, carrots and clover hay, and always wet hay. B. E., Marion, Mich.—Discontinue wetting clover hay and give him two tablespoonfuls of ginger and the same quantity of powdered charcoal at a dose in feed three times a day.

Out of Condition.—My eight-year-old mare had a colt last summer; since then she appears weak and has not thrived. Her bowels are constive and excrement is coated. A. T., Falmouth, Mich.—Feed your mare plenty of well salted bran mash, roots and clover hay. Give her 1 oz. of ground gentian, 1 dr. powdered buchu leaves and 1/2 oz. fenugreek at a dose twice a day; also give her a dessert spoonful of Fowler's solution at a dose three times a day.

Painful Spavin Lameness.—Hide-bound.—I have a mare 12 years old that has been out of condition all winter and I have not been able to restore her. She has had two colts, 1911 and 1912, and is troubled with a spavin. Have worked her very little all winter. O. C. O., Bar-

Clinging Afterbirth.—I would like to know if giving a cow medicine will relieve her of a clinging afterbirth? C. A. F., Fremont, Mich.—The most useful drug is ergot, but results are not by any means always satisfactory. I have believed by giving a cow 1 oz. of fluid extract of ergot every three or four hours for 24 hours after calving, it assisted the cow in expelling placenta. It must not be forgotten that ergot is a somewhat dangerous drug if over-doses are given or if it is kept up for too long a time. If the afterbirth of a cow does not come away in 12 or 24 hours, it should be taken away by hand as completely as possible, then treat her with mild antiseptic remedies. A normal salt solution is about as good as any.

Light Milker.—Have a Jersey heifer, two years old that came fresh April 17; she gives a very small quantity of milk and I am letting calf suck her, thinking she may improve. H. F., St. Louis, Mich.—She is perhaps a light producer and I know of no better way to improve her, than by liberal feeding.

aga, Mich.—If she is rough coated, clip her; her teeth may need attention. The pain of spavin is affecting her health. Apply one part red iodide of mercury and four parts lard to bunch every week or ten days. Feed her mixed hay and plenty of roots, besides feeding her plenty of grain.

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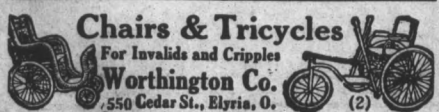
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## Women and Her Needs. At Home and Elsewhere.

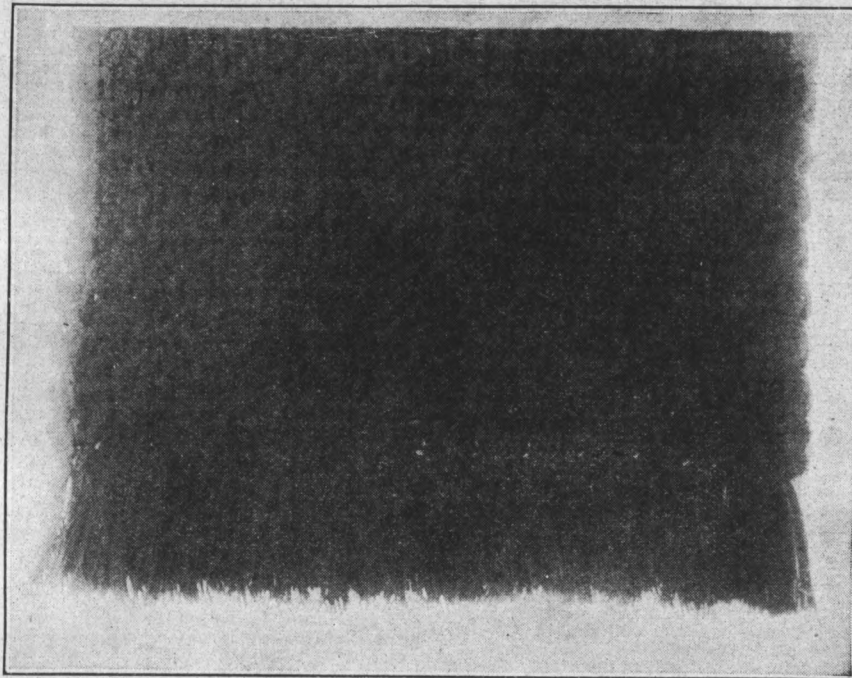
### A Shawl Pattern.

BY VESTA C. HANEY.

This shawl, while substantial and inexpensive, combines warmth and coziness, and for this reason would be especially suitable for an invalid or elderly person. It is developed entirely of Shetland floss. Two threads are taken, and they may be alike or contrasting or harmonizing in color, as is the usual way with Shetland floss shawls. It works up beautifully in the mixed gray or rich red floss. About one pound of the floss is required, half of each color, or perhaps a little more than a pound if fringe of considerable depth is

one has to buy it and pay five cents for two stalks it is a luxury few can afford very often, and it seems strange that more celery isn't grown in more farm gardens.

To begin, I get two boxes of good, fine soil, one for the early kind and one for the late. If the early celery is started now it should be ready to eat the last of August. Scatter the seeds rather thickly over the soil and cover by sprinkling with a thin layer of more soil. Water sparingly each day and when the plants get to be almost an inch high transplant in larger boxes to about an inch apart. The days will be warmer by this time and the boxes can be set out of doors in the sun during the day, at least. They



A Shawl Suitable for an Invalid or Elderly Person.

desired. If the shawl is desired for cool spring and summer evenings, perhaps it with a chain about 25 inches long. On it work one row in double crochet, one in each chain excepting the first two, which are skipped.

Second Row.—Turn, chain two, \* make one double crochet around the post, or stem, of the first double crochet of first row, working it on the front; then one double crochet around the post of the next stitch, working it on the back. The terms "front" and "back" refer to the surfaces of the work. Of course, the front is that which is toward the worker. Repeat from \*, making one double crochet on the front and one on the back, until the end of the row is reached.

The third row is worked like the second row, but reversed. That is, those stitches which in the second row were worked on the back, in the third are worked on the front; and, vice versa, the stitches worked on the front in the second row are worked on the back in the third.

Continue in this way for the length of the shawl, about one and one-half to one and three-fourths yards, as desired. Although it is not essential, the sides may be finished off with either a small shell or a short double crochet stitch. For this edge one thread of the floss will be sufficient, and a small bone hook better for the purpose, but for the body of the shawl a large hook of wood or celluloid will be found more satisfactory as the work can be held looser in this way.

A simple and appropriate fringe for this shawl, as it adds warmth and softness, is made by taking about seven threads of the floss, of twice the desired length of the fringe, and tying them quite closely across the ends as shown in the illustration.

### THE CELERY PLOT.

BY FANNIE V. WILSON.

Now is a good time to get the early plants started for the garden. Some people would rather go to the greenhouse and get the plants they need when it is time to set them out, but I find it much more interesting to get seeds that I know are right and start them at home in pans and boxes. Everyone knows how to start cabbage, tomato and cauliflower but why not try some celery this year? When

should be labeled so that you can tell the early from the late.

About the first of June the early plants can be transplanted if they seem large enough, but the first of July is soon enough for the late variety. When transplanting to the garden set about five inches apart, in rows about three feet apart, in good rich soil. Of course, all vegetables grow faster and larger in loose mucky soil but they have more flavor and are more solid material when grown on upland.

If grown on the upland the ground should be loosened on each side of the row near the plants with hoe or rake to preserve the moisture during the hot summer months.

When the early celery is nearly grown bleach it with small tile, boards or dirt. I like the tile because when one stalk is cut out the tile can be placed over another plant and in this way it can be bleached as used.

The late variety may be banked rather early in the fall to insure its getting bleached before the frost as it should be taken up and put in the cellar before this. If it doesn't seem to have bleached much when taken up it will be all right but it will take a little longer. Stand it in trenches with sand around the roots. That which we had last fall started to growing soon after it was put into the cellar and we had nice, tender celery all winter long, until the first of March.

If the mother or father hasn't time to grow a small patch, perhaps the children could be interested in it, and if they like celery they would find it more interesting to grow than any other vegetable.

### STYLE IN EGGS.

BY W. F. WILCOX.

Don't put all your eggs in one basket if they are not all one color. Some people prefer white eggs, some brown. Some markets pay more for one color, others more for another.

Anyway, a basket of mixed colors isn't half so attractive as a basket of one color. No one would think of packing a barrel or box of apples of mixed colors, red, yellow, etc. Neither do red and white potatoes sell well mixed.

No doubt a box of mixed apples would be worth just as much from a purely food value standpoint as a box of one

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color but they won't sell as well. So a dozen eggs of one color may not possess any more food value than a dozen mixed, but they sell better.

Somebody ultimately grades your eggs and places them in cases according to the color, and for the work makes several cents on a dozen. The producer might as well do the grading himself and get the reward. The farmer might as well be onto the frills and styles and fancies of the market as the middleman.

## HOME QUERIES.

Household Editor:—I have a cream-colored hat of good quality of fine straw; would like to color it blue. Can you tell me how to dye it and what kind of dye to use?—Mrs. E. W.

Get a package of any of the standard dyes and mix it as directed on the package. Then apply to the hat with a camel's hair brush and dry in the sun. Be careful to preserve the shape of the hat while it is drying.

Household Editor:—What color would you advise me to get in a suit and hat? What colors are to be stylish?—Mrs. X. Y. Z.

Blues and grays are to be especially good this spring. If you can wear gray there is a shade called dove gray which is pretty, but unless you have a clear complexion and some color, it is better not to choose gray. French blue is considered very smart. It is apt to fade in the sun, however. Checks are worn and tan.

Household Editor:—What is "braised" meat?—Cook.

Meat cooked in a closely covered kettle with diced vegetables and a very little stock or water. It must be cooked slowly and for a long time. Some cooks add a little salt pork as well as vegetables.

Household Editor:—I saw a reference to junket in the Michigan Farmer. What is junket?—Cook.

To be really accurate, junket is milk which has been "clabbered" by the use of a junket tablet. It is recommended for persons with weak stomachs.

Household Editor:—How do you prepare and cook mushrooms?—Beginner.

Trim the end of the stalk which has been in the earth, and wipe the top carefully with a damp cloth to remove all impurities. If the skin seems tough pull it off. They may then be cooked in a variety of ways. The easiest is to put a bit of butter in the frying pan, turn in the mushrooms and cook a few minutes, then add enough milk or cream to nearly cover and simmer 20 minutes. Thicken the milk with flour and serve as a sauce with the mushrooms.

Household Editor:—If you could only have one hat, what would you get?—Doubtful.

I should get a small, dark hat, close fitting and with nothing about it to attract notice. A hat with huge flowers or plumes would call attention to itself and before the season was over would advertise the fact that it was all you had. If you are a young woman get one of those small ones with a narrow brim which droops just a little and trim it with a pretty wreath or with a wide ribbon which comes around the hat and droops off in a big bow in the back. If you are middle-aged choose a turban, trimmed with a cluster of fruit or flowers and a ribbon bow, or perhaps a simple feather. The acme of good dressing is to wear things which do not attract attention, and are yet in good taste.

Household Editor:—Are the dresses with a high waist line still worn?—Mabel.

Yes, but the long waisted, Bulgarian effects are better, or rather, newer.

## EDIBLE WEEDS.

BY MARY C. BLUE.

God makes nothing without its use. Even the despised nettle that so severely stings us is used as a poultice to blister. A doctor who makes a well-known blood purifier tells us that thistle root is a remedy for kidney diseases.

A popular writer on hygiene states that the dandelion is worth its weight in gold in the early spring. We almost call it a medicinal food, and the roots of the dandelion when sliced and toasted make an agreeable addition to coffee. In some countries dandelion root is roasted and ground, mixed with barley and sold under the name of "Poor Man's Coffee."

Late in the summer when the leaves become bitter the dandelion may be served as greens if the water is changed two or three times while cooking. The tender leaves of mustard make delicious greens in early spring. The leaves of wild mustard make an agreeable addition to salads and sandwiches. They give the

mustard flavor and are said to be without the irritating effects of ground mustard.

Lamb's quarters is another common weed that is edible. In England this weed is cultivated in the garden for greens.

Our commonest weed is purslane and must be fought with eternal vigilance the whole summer, but it is very good when cooked and served as greens or made into salad.

Many women, as a rule, cook greens with fat pork but they are much more healthful when cooked in salt water and seasoned with cream and butter.

Greens are very nice when chopped fine, packed in molds and served with French dressing.

## HOME-MADE MAKESHIFTS.

BY MARY CLARK.

No doubt many of the women readers would like to have nice carpets, furniture and other things with which to make their homes neat and "homey," but, like myself, must do without, so perhaps some of my makeshifts will be of benefit to them.

We have moved around a great deal and have found that the less furniture, fine dishes, and other breakables we have, the better off we are when moving. And as we are not yet permanently settled, are just "getting along" without such things. But as I have received so many compliments on my "pretty rooms," will tell how I made something out of nothing.

For one sitting-room carpet, I first covered the floor with heavy paper, then stretched gunnysacks sewed together to fit the room, and tacked firmly all around the wall. I next prepared a thick, cooked paste of flour and water, and spread while hot, over gunnysacks. When that had dried, I applied another coat, filling all meshes, and after letting it thoroughly dry, gave it a coat of yellow floor paint, then covered the paint, when dry, with a coat of oak stain. This makes a smooth, durable, brown carpet, which is cleaned in a jiffy by wiping with a cloth dampened with kerosene.

Our couch is a home-made frame, over which I tacked an old canvas hay-filled tick, covered with a fitted cover of flour sacks, dyed a dark green. With plenty of cushions it looks real nice.

## FASHIONS BY MAY MANTON.

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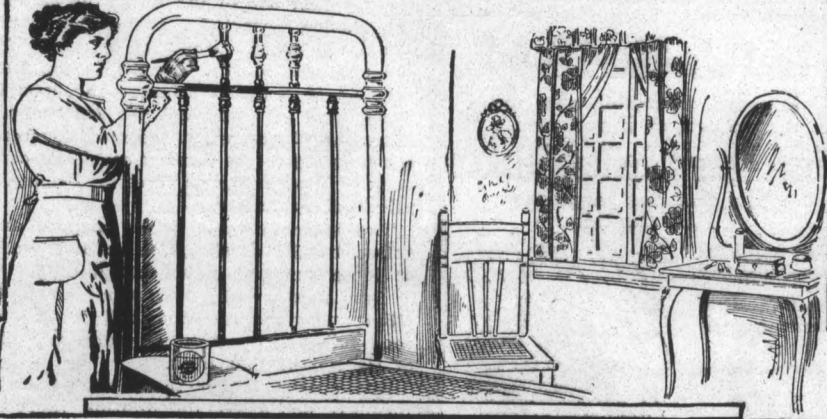
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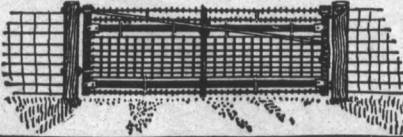
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## Home and Youth

### THE NEW BATTLE-CRY.

BY ALONZO RICE.

On history's page, the scholar reads  
About the famous cries that ring  
Down the long years, of daring deeds:  
Thus, "Liberty or death!" will ring  
Triumphant throbs! "Long live the King!"

We hear the admiring concourse cry;  
My rhymes well sterilized I string;  
"Kill the mosquito, swat the fly!"

"The regulars are coming!" Speeds  
Brave Paul Revere. Once more we fling  
Old Glory out, and hear the steeds  
Down Concord streets as lightly spring  
The "minute men" while bullets sing  
Of death; nor question how or why!  
"When in the course"—that buzzing wing!

"Kill the mosquito, swat the fly!"

And "Don't give up the ship!" Who heeds

Our latter wants? We bravely cling  
With Lawrence to the flag! Who needs  
Another call? Once more we sling  
Rifle to back and "right about" swing!  
And "Millions for defense!" All creeds  
Contain no words that may outvie;  
Would we avert the foe's fierce sting?  
"Kill the mosquito, swat the fly!"

L'ENVOI.

Prints? Countless ones of foreign breeds,  
And "bills present," who may deny?  
Though crushed, another swarm succeeds;  
"Kill the mosquito, swat the fly!"

### RACCOONS A CANNING BY-PRODUCT.

BY DR. L. K. HIRSHBERG.

In Maine, growing fat raccoons is a by-product of raising sweet corn for the canning factories. Plump and weighty raccoons are next to the last crop harvested from the corn patch. The first is the roasting ear in the milk; the second, the glazing kernel for the cannery; the third, the green cornstalks or stover for the silo; the fourth, or next to the last, consists of a dozen or more raccoons to every acre of corn, and the last benefit comes in winter, when the nutritious ensilage is fed to the hungry cows and converted into milk, or cream, or high-priced dairy butter.

The Maine raccoon is a compact and active bundle of sharp claws and teeth, or loose fur and diabolical cunning. In a fair fight, with no favor shown to either party, a raccoon will whip and send howling home in disgrace any dog of its weight that lives.

The season which the Maine farmers formerly set apart for hunting raccoons was during the full moon of October, partly because the shocked corn in the field held the sweetest and most nourishing nubbins ears at that period, but largely for the reason that all raccoons become more ravenous at the approach of biting cold weather, just before the time comes for them to den up inside of some hollow tree.

For chasing the coons foxhounds are by far the best dogs to employ because their scent is very keen and their staying power such that they will remain in the open for nights and days in succession, barking and biting at the roots of a tree with a raccoon comfortably stowed away among its topmost branches.

In the old days when hardwood timber was abundant it was the custom to chop down the tree in which the raccoon was lodged and enjoy for a few moments the cruel sport of watching, by lantern light, while the pack of dogs tore their fighting and struggling victim to shreds. But the increasing scarcity of hardwood timber, combined with the growing values of coon flesh and fur, has caused a change of tactics in conducting such hunts in Maine. However large the company of hunters may be, the number of dogs taken along is limited to two, or three at the most. Instead of felling the tree, an active boy is sent aloft with a lantern to spy out the hiding place of the animal. When discovered the raccoon is often dislodged by shooting rockets into its place of hiding. Often the daring coon leaps 20 or 30 feet to the ground and gets away before the dogs can discover its track. As a rule these dramatic escapes are no more than temporary respites, for the coon invariably "trees" again, farther in the forest, when the conflict must be renewed.

It is not considered sportsmanlike for a hunter to try to shoot the coon when it is hiding in a tree top, though the difficulty of aiming in the uncertain light no doubt affords the best protection the coons could demand. It is even a worse offense against hunting ethics to climb a tree by lantern light and slay a

coon with a close range shot from a revolver.

The most desirable specimens are the large and weighty old ones, too old to take to the trees, but which turn and fight the dogs as they come along in succession, the swiftest dogs getting killed or disabled first.

The average Maine raccoon, when fat and not aged, weighs from 20 to 30 pounds. The coveted fighters which are too old and fat to climb trees weigh, at times, 40 and even 55 and 60 pounds. Though the outlay required in dog flesh and human endurance is enormous, the hunting party which captures one of these fighters has something to boast about.

### LITTLE HOLLANDERS.

BY MRS. JEFF DAVIS.

Uncle David had spent two years in Holland, and James and Roland never tired of hearing about the little Hollanders.

"If you were to go to Holland," said Uncle David, "you would notice many odd and curious things, and after a while you would begin to wonder if there were no little boys in that country."

"Why," asked Roland, "aren't the children allowed to go about, as we do here?"

"Oh, yes," Uncle David replied, "there are little children in plenty, but apparently they are all girls. They are dressed exactly like their tall mothers, in many long petticoats, and look more like little pin-cushion dolls than children."

"But what becomes of the boys?" insisted James.

"That is what I wondered, at first," said Uncle David, "but I soon learned that in Holland the boys and girls are dressed exactly alike until the boys are seven years old."

"What a funny custom!" said James.

"Fancy Roland here having to wear three, four, or on Sundays, five long petticoats under a very wide skirt of a brilliant color, and over the skirt a bright-colored apron, pieced at the top with still another color. And a tight little waist of fairly flowered stuff, with a handkerchief around his neck," Uncle David continued.

"I wouldn't wear such funny clothes!" Roland declared.

"That is not all," Uncle David replied. "The head-dress is still funnier. First the hair is all shaved off except two long, curled tresses just above the ears, and a heavy bang over the forehead. On this they put a sort of glue, that makes it stiff, and straight, so that it looks like a piece of board. Then over that a snug-fitting white cap, and over that another one of different shape, gay with all the colors of the rainbow. On the back of the boys' caps are little discs of black cloth, the size of a fifty-cent piece. This is on the girls' caps also, but is entirely covered with embroidery. This is the only difference made in the dress of a boy and girl, until after the boy's seventh birthday."

"I just know the boys in Holland are glad when they are seven years old," said James.

"I believe they are," Uncle David agreed. "Then they put on the queer, wide trousers just like the ones the men wear, cut off the two long curls, and don't bother with a hat at all."

"An easy job will suit me, Senator." "How about winding the clocks every week?"

"I might make that do. But what's the matter with my tearing the leaves off the calendar every month?"

Mack—"Do fish make brains?" Denby—"Can't say, but I know they make liars."

### BOOK NOTICES.

James Barn Magazine, published by the James Mfg. Co., (formerly Kent Mfg. Co.), of 633 Cane street, Fort Atkinson, Wis., illustrates and describes many dairy barns in which the James equipment is installed. It also contains considerable matter of general interest and value to dairymen, and in fact, all stock owners. Write for a copy of this magazine, mentioning the Michigan Farmer.

High School Geography—Physical, Economic and Regional. By Charles Redway Dryer, F.G.S.A., F.R.G.S., Professor of Geography and Geology, State Normal School, Terre Haute, Ind. This textbook is an effort to afford a clear idea of the relation between the earth and man, showing both the dependence of human life upon natural conditions, and the influence of those conditions is turn upon human life. Half leather, 8vo, 536 pages, illustrated. Price, \$1.80. American Book Company, Chicago.



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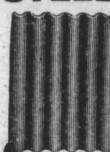
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## Grange.

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

### THE MAY PROGRAMS.

#### Suggestions for Second Meeting.

A story, read or told.  
Improved Methods of delivering milk, by a man and woman.  
Character song.  
Work of the Travelers' Aid Society and similar organizations for assisting strangers, a paper.  
Ought we to use lime on our soils? If so, how much? Where get it? Answered by three men.  
Humorous recitation.  
Roll call responded to by each giving experience with an unpleasant piece of work.  
Self-serve refreshments in charge of men named S—.

### EXTENDING GRANGE USEFULNESS—II.

In a former issue I referred to the fact that in every neighborhood live men and women who have been peculiarly unfortunate, or who, for one cause or another, fail to bring things to pass in their farm operations. There are, besides these, others whose mental movements are sluggish; and still others who lack conveniences in their houses and barns that they might have if they were shown specifically how to get them there; and still others who, although capable and alert in their own affairs, have as yet felt no "call" to unite with their neighbors for the good of all. The re-statement of this obvious fact raises the question, "Ought not a Grange to seek definitely to reach these people?" In other words, is it not true in many cases that our Granges have reached, with their influence, principally those who least needed help and but comparatively few of those who would not have come of their own accord?

How frequently Granges are found doing really fine work with a membership of 30, 50, or 75 persons. I recall many such. The question is, have these Granges rendered their full service, either to themselves or to their communities?

In January the lecturer of one such Grange wrote me: "As I am to fill this office this year, I want to try to make it so good that everyone in our vicinity will hear of our programs and want to join our Grange." Notice that she says "everyone." This is not too high an aim in many a country community; but, although the programs may be excellent, still more definite plans must be laid to accomplish that aim.

Let us assume that this lecturer does provide attractive and helpful programs as she hoped to do. In addition, she advertises these programs in advance and, when each has been presented, sees that it is concisely reported for the local paper in a way that gives the gist of real information brought out under the main topics discussed. All this is fine. A few members are attracted and knock for admission at the Grange door. Very good, indeed. Progress is being made.

But here, on the way to this Grange, is a man who rents a farm. He works hard, very hard. His schooling has been limited but he is working out as best he can the scraps of scientific agricultural help that come his way. He buys expensively because he buys alone and in small lots. His wife works equally hard and the babies help as soon as they can toddle. It is uphill, but they are all climbing. Two things strike us, now we stop to think of them. One is, what if they lose heart or fall down? The other is, what about themselves, while they work so hard in their fields and for their cows and pigs?

The strong, kindly hand of organized neighbors would mean much to such people while they are getting their start. They do not venture to ask for membership in the organization. They cannot always attend if they do join; but what will it not mean to be invited and urged until they become members! What a help the Grange might be to these people in times of sickness, or discouragement, or mistakes with crops, calves or children! (Sometimes, most of all we need sympathy and a "lift" from an outside source because of our mistakes!)

Suppose, again, that someone in each Grange should prepare a large, rough map of its Grange jurisdiction and locate upon this map its actual members and the non-members. In nearly every instance enough eligible material would be discov-

ered to fill the vacant chairs or to make another Grange.

Suppose—just once more—that a list of the people who are not members should next be prepared from this map, and that six members agree to invite the first five persons upon that list to become members of their Grange, each one offering to present their applications; and that the next five names be assigned to six other members, and so on to the end of the list. If this is done in your Grange, heartily and sincerely, do not wonder if it grows in numbers and multiplies in influence many fold.

"There's a reason!"

JENNIE BUELL.

Gardening and Bean Growing were discussed at the last meeting of Sumner Grange, of Gratiot county, it being generally agreed that it does not pay to plant the garden until the ground is warm enough to start the plants quickly. Early plowing, liberal fertilizing and planting garden crops in rows far enough apart to make possible the use of a one-horse cultivator were some of the ideas advanced. The bean discussion was a spirited one and details of raising them were gone into at some length. There seemed to be much difference of opinion as to the number that should be planted to the hill when check rowed and the distance apart; some thought they obtained better results when only three or four beans were planted in the hill and others thought from seven to nine the proper number.

## Farmers' Clubs

### OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—Jas. N. McBride, Burton.  
Vice-President—C. B. Scully, Almont.  
Secretary-Treasurer—Mrs. C. P. Johnson, Metamora.  
Directors—C. P. Johnson, Metamora; H. W. Chamberlain, White Lake; Wm. T. Hill, Carson City; Jerry Spaulding, Belding; R. J. Robb, Mason; J. F. Reiman, Flint.

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

#### Associational Motto:

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

#### Associational Sentiment:

The farmer, he garners from the soil the primal wealth of nations.

### INTERESTING THE YOUNG PEOPLE IN CLUB WORK.

A very noticeable feature of the conference of local Club workers, which is held each year as a part of the program of the State Association of Farmers' Clubs, is the close connection which seems to follow between the interest exhibited by the young people in Club work and the success of the Club as an organization through a series of years. In every case where mention has been made that the young people are interested in the Club it is also stated that the Club is in a very prosperous condition on this account, and whenever a delegate at this conference speaks of a waning interest in the organization, in the same connection mention is apt to be made of the fact that the young people are not as interested in the work as they should be.

If this, then, is the key to success in a large way for the Farmers' Clubs, some means should be devised in every Club to maintain the interest of the young people in the work. How this can best be done will depend not a little upon local conditions, but there are numerous ways in which it can be brought about. In some communities a Junior Club is organized in connection with the regular organization and through this medium the young people are interested in the work of the parent organization, and in other sections corn contests or some similarly interesting work which will interest the young people in the Club and at the same time provide them with an incentive to study the underlying principles of agriculture and thus better appreciate the opportunities which it affords them as a life vocation.

There are, in fact, innumerable ways in which the young people can be interested in the work of Farmers' Clubs, and since only by interesting them can the perpetuity of the organization be assured and its meetings be made of greatest profit and enjoyment to the older members, no effort should be spared to this end in any Farmers' Club in Michigan.

In order to stimulate this work of interesting the young people in Club affairs we should be glad to have the corres-

ponding secretary of any Club which has been successful in this direction describe the methods followed, for publication in this department.

### WHAT THE LOCAL CLUBS ARE DOING.

Berlin and Almont Club, of Lapeer County.—This Club holds ten meetings during the year. Special features are a Children's Day and a Women's Meeting. Yearly programs are used, the discussions being kept up-to-date by a current events number on each program. The Club is a great success, with an average attendance of 125 to 150. Meetings are held at the homes of the members. A special feature during the past year was the introduction of lectures by speakers furnished by the University of Michigan at Ann Arbor.

### CLUB DISCUSSIONS

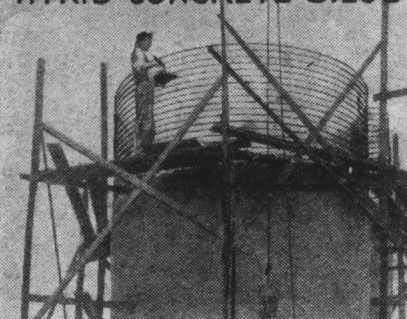
Busy Time Makes Small Meeting.—Owing to the unusual stress of farm work the Hadley and Elba Farmers' Club meeting, held April 17, at Twin Maples, the new home of Mr. and Mrs. R. J. Pierson, failed in its usual large attendance. The roll call received a hearty response in numerous witty Irish sayings. Prayer by Rev. Eberhardt was followed by a discussion on planting and pruning fruit trees, by C. P. Johnson and A. M. Bullock. A humorous recitation by Norma Riley received hearty applause. A long and spirited discussion followed a short talk on The Automobile vs. the Family Horse, by Mrs. C. P. Johnson, and the meeting adjourned to meet with Mr. and Mrs. Charles Riley, at Homestead Dairy Farm, May 15.—Mrs. C. P. Johnson, Sec.

A Big Afternoon Session.—The Assyria Farmers' Club met at the pleasant farm home of Mr. and Mrs. C. W. Tuckerman, Saturday, April 26. No forenoon session was held and a most excellent dinner was served to about 75. President Hartom called to order at two o'clock. Club song was followed by devotionals, the chaplain reading the First Psalm. Roll call found all officers present except chorister. The first number on the program was a piano duet by Inez McIntyre and Lyle Tasker. It was greatly enjoyed and they responded to the hearty applause with a second number. "Making the best of our surroundings" was a reading given by Mrs. Emma Hill. Doing for loved ones and making home and home folks happy should not seem like manual labor and the true home maker is the most unselfish person in the world and one who makes the most of everything. The debate, "Resolved, that the American Indian has been more ill treated than the Negro," was defended by Loyd Tasker, Eva Kent and Ruth Cargo and the negative was led by Dick Kent, followed by Ilza McIntyre and Thera Back. The program committee appointed Mrs. Charles Cox, Wm. Jones and Mrs. Henry Stevens as judges. Strong arguments were put up on both sides but the judges gave the decision in favor of the affirmative. Club sang "Mount Vernon Bells" and "Red, White and Blue," and one of the most interesting Club meetings of the year adjourned to meet with Mr. and Mrs. Roy Moore the fourth Saturday in May.

Discuss Road System.—At a recent meeting of the Conway-Handy Farmers' Club, of Livingston county, the question for discussion was: "Is the present road system a success and if not, how can it be improved?" Fred Rathbun said, the road question is one of primary importance; all agree that the present road system is too expensive. A question whether advisable to issue bonds or not. Discussion of roads are not made specific enough. The miles of state road are a great improvement over old roads; larger loads can be drawn, time is saved and they are easier on teams and wagons. Better roads help to develop free rural system, parcel post, use of motor trucks, etc. Old dirt roads might be greatly improved if individuals were responsible for dragging and filling up holes after a storm. Gravel roads seem to be best for our community. Macadam and concrete roads necessitate the use of very expensive machinery and large amounts of water which would not be accessible, and large expense for raw material. Gravel roads are solely labor roads. Distance to carry gravel is an objection but owners of gravel can be forced to sell it to the county road system, which seems to be the only logical way of solving the problem, under which system a commission of three members have general supervision of the roads of the county.

County Road System Favored.—The discussion was led by S. R. Rickett. He did not consider the present road system an entire success. Did not oppose the miles of state roads but would not build at the sacrifice of the roads. While some roads are better, the roads as a whole are worse than before. Favored the idea of every man taking some personal responsibility in keeping up roads in his own locality. Had come to the idea that the county system is the solution of the problem. A general discussion followed, in which H. C. Benjamin, L. C. Kanouse, O. E. Carr, A. Grant, J. Snyder and J. B. Fuller took part. All seemed agreed that present road system was not meeting the needs of the most people; what the county system or some uniform system would be an improvement over the present system. Mr. Snyder was in favor of more thorough and systematic drainage. J. B. Fuller advanced the advisability of a change in the method of taxation. Let those benefited by state road be taken according to benefit, as in county ditch, etc.

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