

# MICHIGAN FARMER

AND LIVE STOCK JOURNAL.  
PUBLISHED WEEKLY.  
ESTABLISHED 1843.

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

VOL. CXL No. 25.  
Whole Number 3648.

DETROIT, MICH., SATURDAY, JUNE 21, 1913.

50 CENTS A YEAR.  
\$2 FOR 5 YEARS.

## Cutting And Curing The Hay Crop.

ON all farms where the growing and feeding of live stock is a leading branch of agriculture the quantity and quality of the hay crop is an important matter. The hay crop forms the basis upon which we must figure in computing the rations of the various kinds of animals that are to be kept on the farm.

We have too many farmers who are feeding out their hay on their own farms without deriving its full feeding value, and it is along these lines that I desire to present a few thoughts and make a few suggestions. The time is past when we can afford to feed live stock at an actual loss and make good this loss in the amount of manure made from unprofitable feeding operations.

The most common mistake is made when the grass is allowed to stand until it becomes over-ripe before it is cut. When the hay is cut early the feeding value will more than make good any loss that there will be in the total yield. The early cut hay is more easily digested and more palatable than the late cut hay. When we compel our animals to waste their energy in masticating, digesting and assimilating coarse woody hay it is unreasonable for us to expect them to utilize their energy in storing up animal products for use.

After we have done everything possible to make the grass yield a profitable crop, the whole feeding value should be preserved, and right here is where the great secret of success lies. It requires good judgment, skill and prompt action to secure the hay crop at the right time and save all of the rich and good properties of the grass.

One of our most prominent statesmen made the assertion that if he had but five minutes allowed him in which to shave he would spend three minutes in preparing his razor. It is the same with the management of the hay crop. We must have everything ready to push the work with a vengeance. Every tool should be in condition to do its most efficient work. The racks, forks, ropes, rakes and other tools should be ready for business, and we must plan to keep everything moving while the weather is favorable. It is fully as important to have everything ready as it is in the actual work of handling the hay.

With clover I believe that the best time to begin cutting is just before the field is in full blossom. Then it contains more juice, fat and richness. These are the substances that make the hay; with-

out them there is little left except wood. They should never be allowed to wash out with dew or rains nor be dried out by the sun and winds. Success in handling hay depends upon retaining these substances until the hay is cured and ready for the animals to consume.

With clover I believe that almost without exception the best results will follow the practice of cutting in the morning after the dew is off. Then, if the day is sunshiny and favorable, the tedder may be started after one o'clock and kept going until toward evening; then the clover may be raked and cocked and allowed to cure for two to four days, and opened up the morning of the day it is to be

erly handled with the teams and help that are available.

If we allow the clover leaves to become dry, there will be a large loss and the feeding value of the crop will be greatly lessened. In many cases a loss of half the feeding value of the crop comes from allowing it to become too dry by exposure to the sun and wind, or from becoming wet and musty from long exposure to the rain and cloudy weather. Hay caps are an excellent thing to use when there is a large amount of clover left over night in the cocks.

There is another gain in cutting clover early, and that is, the plant starts a vigorous second growth that protects the

should be raked into windrows and tedded in the windrow two or three times, and the windrows turned and tedded until fit to go into the mow. Timothy should be all ready for the mow the second afternoon after it is cut if the weather conditions are favorable, and it should not be cocked up in the field unless it looks like rain the day after it is cut. When unloaded in the mow care should be exercised in keeping it well spread and tramped down, especially if unloaded with a hay fork or slings.

The time for cutting timothy hay may be governed largely by the kind of animals that are being fed and by the uses that they are to make of it. Cows that are being milked should have early cut, sweet hay. Horses that are being worked will thrive fully as well if not better, on timothy that is cut later, while a little out of blossom. Thus first cuttings will make better cow hay and the later cuttings will make good horse hay. Many good farmers still cling to the old idea that because the hay will analyze better than early cut hay it has a higher food value, but it is a great mistake for us to consider the matter in this light.

Take late cut hay and feed your cattle on it during the winter and they will become thin; then turn them out to pasture in the spring and they will shed off their old hair and take on a look of prosperity. How is this to be explained? Not that the grass contains more protein or that it is a more nearly balanced ration. The difference is due to the mechanical condition of the grass being better adapted to supply them with nourishment. It is green, succulent and more easy to digest. Grass is nature's food for cattle, and the more nearly we can approach preserving our fodders in that natural condition the nearer we will come to obtaining an ideal food for our live stock. When we preserve that rich succulence that nature puts into our grasses we will get the highest development that our animals are capable of reaching.

There is no question of more importance than that of preserving our grasses in a condition so that they will be the most palatable and digestible. If not palatable they will not be eaten, and if not digestible, they will not produce good results. It shows that something is wrong when one-third of the feeding value of our grasses is lost because the animals will not eat the hay or because they could not digest what they had consumed.

New York.

W. MILTON KELLY.



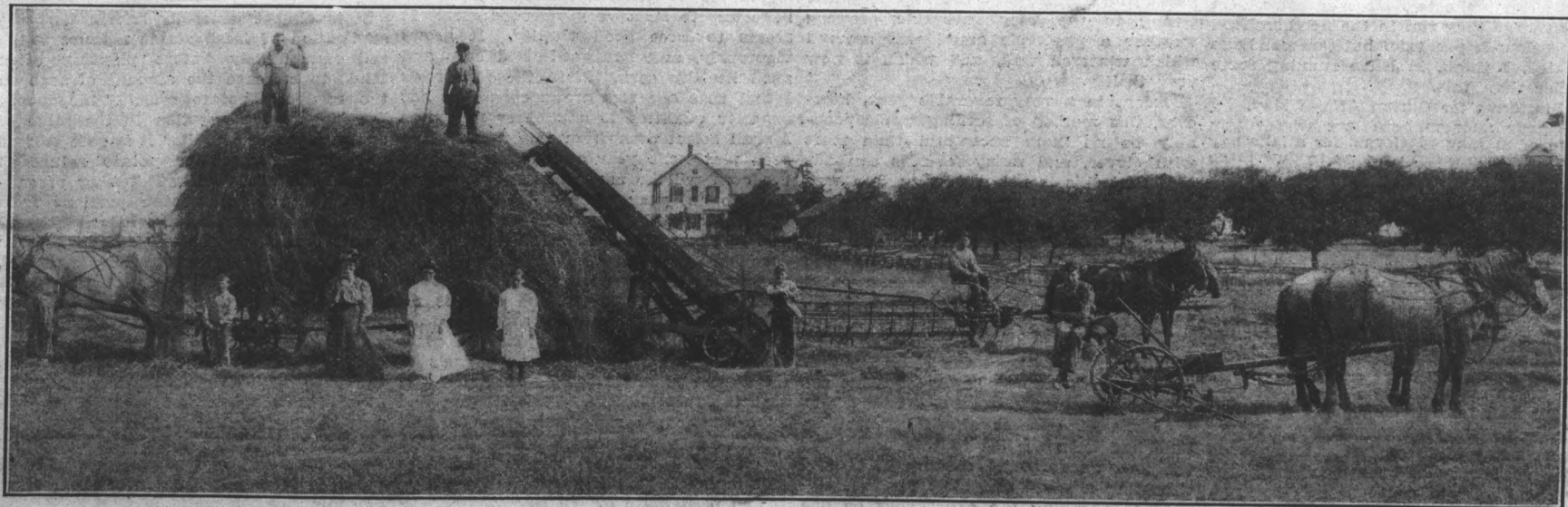
Cured in this Way, the Early Cut Clover and Alfalfa will Make the Best Hay.

hauled to the barn, and allowed to air out until afternoon before it is to be hauled to the mow. We should bear in mind that it is the air, and not the sun, that cures hay best. Now, I do not lay down this rule for all occasions nor for all hay growers to follow, but it must be along these lines if the clover is secured in the best possible condition with a minimum loss of leaves and food value.

There are certain conditions, such as weather, help, and the like, over which we have no absolute control, that may cause us to change our well-laid plans, but generally speaking the method outlined will be found the most satisfactory of any method that we may follow. It will be found a good plan not to mow down more at one time than can be prop-

roots during the hot summer weather that usually follows haying, and in many instances a good second crop is assured.

In the cutting and curing of the timothy hay the management is less difficult, as the grass will require less curing before it is in condition to go to the mow. Timothy should be cut while in full bloom, and the best time to cut it is in the afternoon, as the plant contains less moisture at that time than at any other time during the day; and if cut in the afternoon a rain the same night will not do it serious harm, especially if the tedder is started early the next morning. The earlier we loosen up the swath and give the air a chance to dry it, the sooner it will be in shape to go to the mow. After it has been tedded a few times it



A Method which will Hasten the Securing of the Last of the Hay Crop in Good Condition with the Expenditure of a Minimum Amount of Labor.



## MAKING ALFALFA HAY.

In making alfalfa hay we do not use the same method as in making ordinary red clover hay. We found that it had to be cured with greater care in order to get the best kind of hay. It takes somewhat longer to cure it properly.

The exact time to cut the hay depends on the vitality of the plant and the length of the shoots at the base of the plant. If the plant looks yellow and does not seem to grow the best thing to do is to cut it. A certain fungus known as the alfalfa leaf spot causes a disease on the leaves of the plant. It is particularly injurious during dry weather. When this fungus once gets started in the field it seems to hinder the growth of the plant. This disease is very common and about the only thing that can be done with an infected field is to cut the alfalfa, whether it is ready to cut for hay or not. In all cases the alfalfa should be cut whenever the growth seems to be checked, no matter what the cause may be.

Provided the alfalfa looks healthy and dark colored and is not diseased the time to cut depends entirely on the length of the new shoots at the base of the plant. They should be at least one-half inch long before cut for hay. Some farmers claim that if it is cut before the shoots appear, the plant may be killed or injured quite materially. Some time ago the blossoms were used as a guide for cutting but this is not a very good guide to follow.

We find it a good plan to mow the alfalfa in the afternoon, providing the weather is favorable. The next morning as soon as the dew is off the field it should be gone over with a tedder if the hay is very heavy. In the afternoon it should be placed in small cocks and left for a few days to dry. The hay does not need to be dry before put up into cocks. In fact, it is an advantage to have it rather green, since the leaves fall off very easily when dry. Never ted alfalfa hay or any other kind of hay when the leaves are partially dry.

In making alfalfa hay we found that the main things to be taken into consideration, besides good dry weather, to be the proper time for cutting, guided by the length of the shoots and the right time to handle the hay, to avoid a loss of leaves.

Indiana.

J. C. KLINE.

## HAYING PROBLEMS.

## Baling Clover Hay from the Windrow.

Please inform me if clover hay can be baled from windrow, the bales weighing about 80 lbs. Will they mold? What is the weight of a commercial bale? Is there any standard size?

St. Joseph Co.

G. B. Z.

I do not think it practical to bale clover hay from the windrow. Clover hay, as the old saying is, has got to sweat somewhere. If it doesn't sweat in the cock it has got to sweat in the mow. If you put it in the bale before it sweats then you are liable to have mouldy clover hay. If you get the clover hay dry enough so that you can bale it direct from the windrow it will be so dry that it will break up and won't come out in good shape. If I were going to bale clover hay from the lot I should certainly put it in cocks. I would put it up in cocks before it was thoroughly dried, when it was nicely wilted. Let it stay in the cocks two or three days. Then when it is opened and aired and baled it would preserve its qualities.

I do not think there is any standard for the weight of bales. Some machines make larger bales than others. Most all machines can make two sizes of bales. On the average they run in the neighborhood of 160 pounds per bale, but you can have it baled, I think, in bales running some smaller than this.

## Platforms for Curing Alfalfa Hay.

In your address here last winter you spoke of making platforms for alfalfa hay cocks. Please inform me as to how large to make them and how close together to put six-inch boards that I can use.

Branch Co.

E. W. F.

My idea is to make these platforms four feet square. Cut 2x4's four feet in length and then nail boards across four feet long. Your six-inch boards will be all right. Just simply leave openings between the boards of about four inches, just so that the hay won't go down through and will simply allow the air to pass up through the cock and help cure it. Others advise having these platforms as large as six feet square. It will not take so many of them, but making much larger cocks you will have to leave the hay out longer in order to get it cured. I cannot speak from experience, which

is the better way, but it strikes me that the smaller ones would be just as valuable. If you are making some as an experiment it might pay to make both sizes and try them. Some good farmers say that it will not pay to do this with alfalfa, that they can cure it all right without. I agree that they can if you have the best kind of weather to cure it in. The only trouble comes when we have bad weather, which is always liable to occur. Then there is so much in palatability that it pays, I am sure, to make good alfalfa hay or clover hay. If the weather happens to be bad, the ground wet, you cock up the alfalfa and if it has to stay there two or three days before it is cured up it will mould or get musty on the bottom, and is not so good hay. Now I am not prepared to say that these platforms would be profitable, because no one knows just what kind of hay he would get in a given year without the platforms, but I can see that they will not cost very much, because they will be exceedingly small. The greatest expense will be the cost of labor in handling them, and this with a little systematizing can be done, it seems to me, very cheaply.

COLON C. LILLIE.

## HARROWING CORN.

I have been harrowing my corn today, June 10, a nice, clear, bright day, ideal for this work but too cool for corn to grow rapidly. When the ground is in condition, and that is when it is dry and mellow, I like to harrow the corn before it is up, giving it a thorough dragging with a 50 or 60-tooth harrow. I prefer to harrow with the rows the first time over, beginning the harrowing when the corn has made about an inch of growth, just so that it is well rooted, and then again in a few days when it is coming through the ground and not more than a couple of inches high I go over it the other way if the ground is in suitable shape to permit it, and that is when the ground is dry enough so that it will not stick to the harrow teeth.

To harrow the corn when the ground is not in this condition is hurtful to both the corn and the land, and one had better be repairing the fence about the corn field so as to keep the stock out of it after it has made a luxuriant growth. I know a great many do not believe in harrowing corn, but I believe if done at the proper time it is a great help to the corn. It loosens up the ground and gives a free circulation of air in the surface soil and helps materially in pushing the growth of the corn when it is small. Also it is a great saver of labor as one can do much more and better work with a harrow in two hours than can be done with a two-horse cultivator in a day.

Monroe Co.

J. M. TUTTLE.

## FARM NOTES.

## Fall vs. Spring Seeding of Alfalfa.

I have seven acres of land that was in alfalfa last year. It is real poor and full of plantain and dock. I am plowing it for ensilage corn. Can I re-sow it to alfalfa this fall, or would it be better to fall-plow it and sow in the spring with barley as a nurse crop? Would you advise clipping part of a clover field early as a preparation for seed, or would you make the hay early and run the chances?

Lenawee Co.

E. R. C.

In a favorable season alfalfa can be successfully seeded in standing corn, where the corn is planted for a grain crop. The writer experimented very successfully in this direction last summer.

Three acres, which had been previously seeded to alfalfa, on which a good stand was not secured, was reseeded in corn about the middle of July, last summer. Owing to the very favorable growing weather a profitable stand was secured which wintered well, and which is now very thrifty.

Except in a very favorable year, however, this method of seeding would probably be no more successful than it is with clover, and many farmers can advise that this is not a very certain way of getting a good stand of clover.

This seeding in ensilage corn would not be as certain of good results as the corn would probably be planted thicker, and would shade the ground more than would the thinner planting for a grain crop. When this fact is taken into consideration, it would, in the writer's opinion, be a better plan to seed the alfalfa, either with a nurse crop of barley or alone the following spring.

In the experiment above referred to, lime had been applied to this field after the first unsuccessful seeding of alfalfa, excepting a small strip left for the purpose of checking the experiment on one

side of the plot. On this unlimed strip the alfalfa is nowhere near as good as on the portion that was limed.

The whole plot was inoculated with the bacteria peculiar to alfalfa, by sowing some soil from a successful alfalfa field prior to the first seeding. Only an imperfect inoculation was secured, however, in the first seeding. The application of the lime remedied this difficulty, and although no inoculation was used in the last seeding, all of the plants are inoculated, and the growth is a very thrifty one.

This fact is mentioned in order that the inquirer may determine as best he can from the present stand of his alfalfa, whether lime is needed on his ground to insure the success of the crop, as it seems to be on many Michigan soils.

Without knowing what the weather conditions will be, it is impossible to advise whether it would be more profitable to clip the clover early as a preparation for the seed crop, or to cut the first crop as early as practicable for hay.

Where weather conditions are right, the latter method is sometimes just as successful, and you would be the hay crop ahead.

In an ordinary season, however, it is considered a little more certain to clip the clover back early as a preparation for seed than to harvest a crop for hay, even though it is cut as early as practicable.

## Fertilizing Corn in the Hill.

Please advise me in regard to distributing hen droppings mixed with wood ashes around hills of corn. Is it a paying proposition? If so, how should the two be proportioned and would it be all right to do so before corn is up? Also, how much could be safely placed on each hill without injury?

Ingham Co.

R. B. R.

The method of fertilizing corn in the hill suggested in this inquiry, was formerly quite extensively used. Science has demonstrated, however, that it is not a method to be approved.

Where ashes and hen droppings are mixed together for the purpose of making a fertilizer to apply to corn in the hill, a chemical action is set up which results in the loss of much of the fertilizing value of the hen droppings. The lime in the ashes converts the nitrogen in the manure into the form of a volatile ammonia gas, which is lost in the air, thus the very purpose of mixing this fertilizer is defeated.

The better way to use these two valuable fertilizers is to distribute them thinly and evenly over the soil, and work them in when the loss occasioned by mixing them will be avoided.

## LILLIE FARMSTEAD NOTES.

## The Seed Corn Plat.

My seed corn plat is wide enough for 23 rows of corn and it is half as long again as it is wide. Every kernel in each row is from a single ear of corn, in other words, it is ear to row planting. Of course, I tested the corn so that I knew that it would all grow, but that isn't the whole philosophy of the seed corn planting. The reason for planting the seed in each row from a single ear, the best ears from the best plants that your judgment allows you to select, is to find out if there is individuality in corn the same as there is in animals, and to find out how strong this individuality is. This corn will be properly taken care of, it is on a good fertile piece of ground, and it is up, and at this date has been cultivated, June 10. It was injured just a little bit by the frost the nights of June 8-9-10, but not seriously. This plat is planted to Wing's White Cap. I believe this to be a very vigorous corn. It seems to have good vitality. It grows vigorously, and has good-sized ears and good healthy corn. If in these 23 rows I find that one row grows corn that has superior qualities to any other row then I shall select corn from this row for the seed plat next year and the balance of the corn will be used for the main crop. And so on, year after year, it may be that there will be several years that there will be no evidence of superiority of the corn from one ear over another, and then there will be superiority which can be readily noticed. Where the seed is all mixed together one cannot ascertain this, and the only way is to plant in plats where a single row contains kernels of corn from a single ear so that you can test the individuality. Then, if you find superiority, this superiority can be preserved and perpetuated. Where the corn is all mixed together it is impossible to distinguish it and impossible to preserve it and perpetuate it. Of course, this sort

of farming is a little bit slow for the average young fellow, but as we get farther along in life there is more pleasure in amusing ourselves with something of this sort. It helps to make farming interesting.

## Harrowing Corn.

For some reasons it is certainly better to check row corn so that you can cultivate it both ways. You can give the land much better tillage. For other reasons I would rather have it in drills, especially ensilage corn, because I like to get it thicker than you would get it in hills if it was planted good and thick. Then, too, when you have a great big hill with five or six stalks in it it is a severe strain on the corn harvester to cut this, while the same amount of seed distributed evenly in the row with the planter, it handles it nicely without any particular strain. But when corn is drilled in there must be favorable weather at about the right time else it is difficult to keep it clean. If the weather is favorable so that one can harrow the corn ground after the corn is planted before it gets up, then again after it gets up most of the weeds will be killed so that the rapidly growing corn will smother the rest of them and you can have clean corn even in drilled corn. But if the weather is unfavorable, if just as soon as you get a field planted you have a soaking rain and you can't get on to harrow it, the corn comes up, the ground is packed hard; perhaps another soaking rain comes so that you can't get on till the corn gets large enough to cultivate, then you are bound to have a weedy corn field. A season like that one wishes that he had checked the corn so that he could cultivate both ways. But on the ensilage corn of late years I have taken the risk of this anyway, because I like to have it in drills.

This year it has been very favorable for harrowing the corn. Corn was late planted in this section at least. Very little corn was planted before the first of June. The earliest planted corn now, June 10, is barely large enough to be cultivated. The most of the corn is not yet out of the ground or just coming out. In the meantime we have had a shower, it formed a crust over the land. We had our corn all planted and have been able to harrow the ground thoroughly before the corn got up and break this crust and form an earth mulch to preserve the moisture. The ground is moist and the corn is sure to sprout and come up, and yet it is a very dry time. The creek in the pasture is nearly dry, as dry as it usually is the first of August and here it is only the tenth of June. The grass in the meadows is at a standstill, it hasn't had a good soaking rain this spring. I care little about this so far as hoed crops are concerned, because I feel we have got the upper hand this year. We got the ground plowed before it got too dry; we had time to thoroughly work it; we got the crops planted and were able to keep an earth mulch on the surface, and there is moisture enough from capillary attraction from the sub-soil so that I am positive that the hoed crops will do well, even though we have little rain, but, of course, pastures and meadows are suffering.

I planted the ensilage corn very thick with the idea of cross harrowing it enough after it comes up so that I will root out part of it and thus have a means of killing all the weeds which may grow in the row. For harrowing corn I think it is better to have the corn planted in rows than in hills.

## VITALITY OF POTATO SCAB.

It is almost generally known that the application of fresh stable manure to the soil immediately before planting often tends to increase the amount of scab on the resulting potato crop. This theory brought up the question in the mind of an investigator whether it is safe to feed uncooked potatoes or potato refuse to animals in stalls without taking precautions to prevent uneaten portions from becoming mixed with the litter. Experiments carried on for two seasons with a horse and a cow fed infected potatoes, and the results indicate that the germs of potato scab are able to pass through the digestive tract of both species and go into the manure pile without being destroyed. This was much more readily the case with the horse than with the cow. The manure of horses fed on raw potatoes is very likely to carry the germs of the disease. On the other hand, that from cows fed a moderate quantity of potatoes is probably not a serious source of contamination.



## A VISIT TO SOME FINE MICHIGAN FARMS.

Thirty-two of the students in agriculture, accompanied by Prof. J. A. Jeffery, returned to the Michigan Agricultural College last week after spending some interesting days in visiting a few of the largest and best Michigan farms. The first farm visited was located in Saginaw county and consisted of 1,000 acres of fine land owned by A. P. Bliss and managed by E. C. Walker. Mr. Walker gave the men some good practical information on farm management, and presented many figures to show the results from the proper tillage of the soil and the right handling of farm labor. The tractor has proven a labor-saving machine on this farm and the actual results shown in the field prove that the original cost can be saved in very few years because of the great capacity for rapid work, both night and day. Mr. Walker is out of the dairy business at the present time owing to the difficulty in obtaining good men to look after the stock, but the results of the field work show that the keen manager does a lot of thinking and knows well the problems of the big general farmer.

The next stop was at the home of L. W. Oviatt, of Bay county, and Mr. Oviatt with his usual genial smile, which is backed up with earnestness, enthusiasm, and common sense, gave the fellows an inspiring recital of his experiences in the farming business. He is an inventor of more ways of doing a thing right without spending any money, than any farmer the writer has ever visited. Mr. Oviatt is primarily a sugar beet farmer but is making money from raising colts and general farm crops and is now running a ranch in the northern part of the state as a side line. The home farm has been cared for this spring by his son Milo, and the outlook for beets has not been better in many years. Milo is certainly showing up the Oviatt trait for making good and is an example of the results when the man brimming full of good stuff sticks to the farm and likes the job. Mr. Oviatt's method of selling horses can well be followed out and his admonition is as follows: "Be honest, never sell a horse without telling the buyer everything about the animal." The buyers around that region will pay Oviatt more for a horse when they have his word for the habits and condition of the animal, than they will give for an unknown quantity that is offered by the man with a checkered reputation in his horse dealings.

The third farm visited was the big 10,000-acre tract owned by the Owosso Sugar Company and managed by Jacob De Geuss, who is a Hollander and a business farmer, that has combined the best methods of both the old and the new world agriculture. The dyke system is the big feature of this enterprise and 10,000 acres of fine soil have been reclaimed by this method. Mr. De Geuss hires 260 men on the place and they all live on the farm in a small village. The men are furnished comfortable tenant houses free, and earn enough money so that nearly every man has a deposit in the bank and all of them are depositors before working there any length of time. The company provides a weekly dance for the men and outside ball teams from Saginaw and nearby towns are brought in to combat the local aggregation. A band is always brought out on the Fourth and everything possible is done to keep the men contented and happy on the place. This farm is never troubled with a scarcity of farm labor as there is nothing lonesome about the work and the men seem well satisfied with the wage returns and the provisions made for their entertainment by the company. They are raising sugar beets, mint, and all general farm crops. The railroad has run a spur track into the farm and the company also has its own elevator and mint distillery, which are both big factors in the profit making of the business.

The last farm inspected is owned by A. B. Cook, of Shiawassee county, and is of unusual interest because of Mr. Cook's method of keeping up the fertility of his land without the combined business of stock raising.

Prof. J. A. Jeffery, who has been with the college for fourteen years, originated the idea of taking the students on annual inspection trips, and for the last three years this trip has been a regular feature of the agricultural course. One of the most enthusiastic and interested students of the party was Mrs. Sturgis, of Illinois, who is a graduate of Northwestern University, and is taking the agricultural course preparatory to buying

a farm in Michigan. The students were all greatly benefited by their insight into the business methods employed on these farms and the hospitality with which they were received gave every man an increased enthusiasm over his future work in the business of the agriculturist.

Ingham Co.

R. G. KIRBY.

## PUMPING WATER FOR IRRIGATION.

I would like a little advice with regard to an irrigation problem. I have a pond on my land from which I wish to pump the water some 20 rods and to an elevation of 30 feet, for irrigation purposes. Could I get pressure so I would not have to use an elevated tank?

Calhoun Co.

G. H. C.

It is practical to use a force pump to pump water to the height and distance mentioned in this inquiry. The exact arrangement in this particular case will depend somewhat upon the system of irrigation used. If the water is allowed to flow over the land, a somewhat different arrangement should be made than where it is to be supplied under pressure, as is done with the sprinkler system. In the first case a wind mill and force pump might be used and a storage tank of concrete might be located on the ground at the top of the elevation. A storage tank constructed in this way would be comparatively inexpensive and would store the water which the wind mill would pump during periods of wind.

If pressure is required, however, it will be necessary to use other power, as a gasoline engine or motor. In this case it would also be advisable to use a pump adapted to this particular kind of work. I refer to a power driven, double acting pump with horizontal cylinder with a capacity of 1,000 to 1,500 gallons per hour. The power required to operate this pump and force the water the distance mentioned through a 1½ inch pipe would require about 1½ horsepower. To provide reserve capacity in the engine and for future needs, however, it would be advisable to use an engine of 2½ to 3 horsepower. A pump of the description I have mentioned would cost from \$30 to \$40. A proposition requiring the investment which this outfit would represent should be carefully considered as to the area of land to be irrigated and the possibilities of future development.

Mich. Ag. Col. H. H. MUSSELMAN.

## ABOUT THE POTATOES.

In a recent issue of The Farmer, friend Clapp gives some directions for the growing of seed potatoes that are somewhat misleading, from my point of view, backed by years of experience.

My theory is that the continued fine division of the seed is largely responsible for the extinction of old varieties. But theory alone is very unsatisfying, and without experience to back it, may be of very little value. By selecting seed for next year's planting of the seed plot, at the time of digging, as many as 300 bushels to the acre may be produced with marked improvement in the quality. Save only hills of approved size, type, and yield, and plant these in a plot from which to save seed for planting. In the seed plot plant whole potatoes only. Of course, the general, or main, planting, must be from cut seed, as to use whole seed there is entirely impractical, aside from the item of expense.

The theory that after seed is cut it should be left to sear over the cut surface, if correct, must be practiced understandingly. Seed thus treated germinates much more slowly than whole seed, so if you desire an early crop you may be sadly disappointed if you treat your seed in this manner.

It will pay big to select your potato seed with at least half the care you exercise in the selection of seed wheat, corn, and other grains, and not plant runty, immature culls, as many do, and then expect bumper yields.

Barry Co.

SUBSCRIBER.

## HOW TO KILL DANDELIONS.

Here is a cheap and easy way to get rid of the king of lawn-pests. Dr. H. P. Knight tells of it in a recent communication to the Omaha Bee: "Thinking that it will be of benefit to the public in cleaning up the dandelions in Omaha," writes Dr. Knight, "I have tested out a preparation and find that it will destroy the plant, root and all, complete. Take Kreso Dip, which can be obtained at any drug store, and drop five drops into the crown of each dandelion. This can be done with a common oil-can with a long nozzle. One dose will kill the plant in three days."



## RAISE A BIG CROP OF GOOD WHEAT WITH A.A.C. FERTILIZERS

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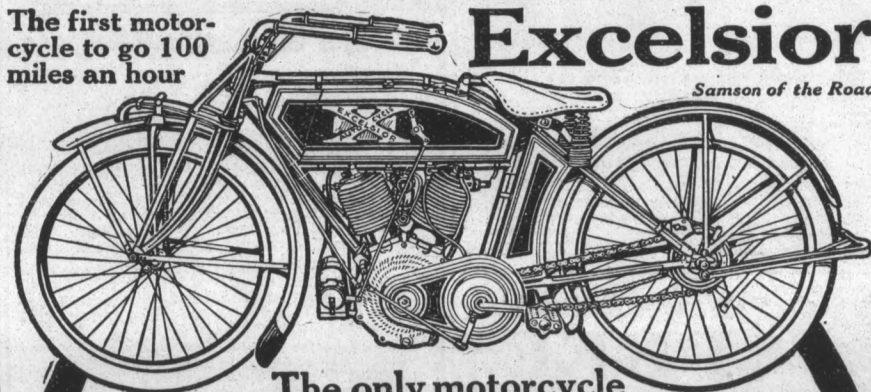
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1 mile...36 seconds flat	
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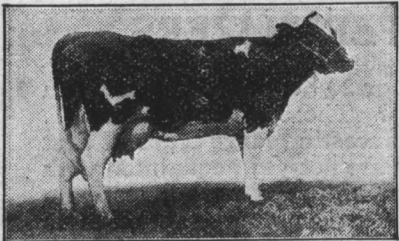
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## Dairy.

CONDUCTED BY COLON C. LILLIE.

### TUBERCULOSIS AND HOW IT SPREADS.

BY FLOYD W. ROBISON.

#### Postmortem Appearances.

When the carcass of a cow affected with tuberculosis is opened the disease may be found in any part of the body. Lumps (tubercles) may be present in the substance of an organ such as the lung or the liver, or they may be growing on the surface. These lumps may be so small as to be scarcely noticeable, or they may be as large as the closed fist or even larger. If one of the lumps is cut open, the inside is yellowish and gritty on the knife like sand, or else is of a cheesy nature, soft and creamy, or hard and dry.

The lungs is the favorite place for tubercles, and should always be examined. Lymph glands are often the seat of tuberculous changes. When healthy a lymph gland is a little rounded body not much larger than a good-sized bean, the largest only the size of one's thumb. They are found all through the body, and when healthy are so small as to attract very little attention. Tuberculosis may cause them to grow to an enormous size, sometimes as large as a child's head. In this condition they are similar to the tuberculous lumps already described. Those lying between the lungs and in the throat are the most frequently affected.

Tuberculosis may be found in any part of the body—glands, lungs, liver, bowels, kidneys, womb, udder, and even the bones. The muscles and the skin are seldom affected. When tuberculous nodules in the lungs break down, the material of which they are composed, and which contains millions of tuberculous germs, is coughed up. Some of the germs are sprayed from the mouth and others are swallowed and discharged with the dung.

One reason why tuberculosis is so common among persons and cattle is that many persons and cattle pass tuberculous germs from their bodies before anyone knows or suspects that they have tuberculosis and can get the disease to others.

A tuberculous udder may contain only a single small swelling through which the milk becomes dangerously infected with tuberculous germs.

The germ of the disease, the tubercle bacillus, is a tiny, slender rod-shaped body. Several thousands of them placed end to end would be needed to measure an inch, so that they are quite invisible to the naked eye. A powerful microscope is needed to see them.

#### The Way Tuberculosis Grows in the Body.

Once the bacillus has gained lodgment inside the body of an animal, it may begin to grow and multiply. It gets longer and when full grown divides crosswise, making two out of one. Each of these goes through the same process, the two become four, the four eight, the eight sixteen, and so on indefinitely.

#### The Body Defense Against Tuberculosis.

This multiplication takes place quite rapidly when conditions are favorable, only a few hours being required for the birth of each generation. Nature, however, does not permit this process to continue long without offering some resistance. The forces of the body are roused to action and a battle begins between the tissues of the body and the army of the invaders.

The first line of defense is composed of the white cells of the blood, which hurry to the scene of action and endeavor to destroy the invaders by eating them up. Sometimes they are successful and the bacilli are destroyed, the infection checked. Often they fail in their object and are themselves destroyed and the multiplication of the germs continues.

The second line of defense is formed by the cells of the tissue invaded by the germs. These cells arrange themselves in a circle around the germs and try to form a living wall between them and the rest of the body. This barrier gradually becomes thicker and thicker and forms a little hard lump or tubercle, from which the disease gets its name. If this wall is complete and successfully imprisons the bacilli, these gradually die and the disease in that particular spot is arrested.

#### The Triumph of the Disease.

Frequently, however, both these safeguards are overcome. The germs break

through the barriers and are carried in the blood stream or lymph channels to other parts of the body. New points of attack are selected and the process begins again but with less chance on the part of the animal. As the tubercles increase in number the power of the body to grapple with them becomes less and less, and gradually the animal falls a prey to the disease.

The tubercle bacillus does not usually multiply outside the body of an animal. It can live for a long time in favorable surroundings, such as dark and dirty stables. Sunlight soon destroys it. Freezing does not hurt it, but it can only stand a moderate amount of heat. Exposure, of 149 degrees F. for 20 minutes kills it. Protected by a layer of dry mucus, such as is coughed up from the lungs, it withstands drying, light and ordinary disinfectants, but is readily killed by steam or boiling water.

#### How the Disease Spreads.

Sooner or later the tuberculous cow begins to give off the germs of the disease. The germs escape by the mouth and nose, the bowels, in the milk, and in discharges from the genital organs. When the germs are being given off in any of these ways, the disease is known as open tuberculosis.

Germs discharged from the mouth and nose are coughed up from the lungs and are sprayed over the food in front of the cow or are carried in the air for a time until they fall to the ground. Cows in adjoining stalls may take in these germs in the air they breathe or in the food they eat and so contract the disease.

#### How Hogs Contract Tuberculosis.

Germs discharged from the bowels are mixed with the manure, and may infect cattle and hogs that are allowed to pick over the dung heap. The practice of having hogs and cattle together in the same yard is sure to result in the infection of the hogs if any of the cattle are affected. The germs in the manure come from matter that is coughed up and swallowed, and in some cases from tuberculosis in the bowels themselves. Manure containing tubercle germs may easily infect the milk. Particles of dried manure may fall into the milk pail from the skin of a dirty cow or be accidentally flicked off from the tail and fall into the milk. Straining the milk afterwards only removes the larger particles. The smaller ones, including the germs, remain in the milk.

When the udder is tuberculous the milk contains the germs in vast numbers. Such milk may look and taste perfectly good, but readily transmit the disease to young animals. It is very dangerous to children. Hogs and calves are very readily infected by it.

#### SCORING CONTEST IS A SUCCESS.

The educational scoring exhibition of dairy products made at Detroit May 26, brought together a goodly number of exhibits of high quality. In the cheese classes, cheddar exhibits averaged 95 per cent and soft Michigan 96½ per cent, Halpin Cheese Company, of Perry, getting the highest score in the former, and D. A. Jenkins, of Monroe, the highest for soft Michigan. In the whole milk class of butter, only two exhibits were marked at 90 or above. Between the whole milk and cream class and the gathered cream class there was a close rivalry, with honors divided about even—the high mark for both being 96 per cent, H. L. Chandler, of Grant, taking first award for whole milk and Thomas Stacey, of North Branch, winning out in the gathered cream division. Altogether there were 39 exhibits of gathered cream and 11 of whole milk and cream scored at 90 per cent and above.

The response of the buttermakers and cheesemakers of the state to the official invitation to participate in the exhibition indicates that this work will again attain the popularity accorded it a few years ago when Michigan dairy interests were greatly benefited by the scorings. The next exhibit will be held in Detroit June 30.

#### BOOK NOTICE.

A Manual of Chemistry, by Herbert Ingie, B. Sc. (Leeds) F. I. C., F. C. S., is a book of 400 pages, which in this third and revised edition is a most complete text book on many phases of agricultural chemistry. Is published by Scott Greenwood & Son, London, but is vendable to American publishers by D. Van Nostrand Co., 25 Park Place, New York. While originally the work dealt with the chemistry and physics of subjects, relating only to English agriculture, this edition contains reference to chemistry of crops and questions of stock feed in other lands. Price, \$3.00.

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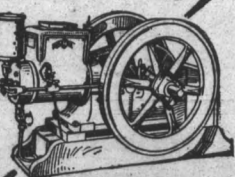
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The only feed that's guaranteed to produce more milk and keep your cows in better condition.

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## IS THERE ANY MONEY IN DAIRYING?

One is asked this question every little while by people who are contemplating going into this field of agriculture. Dairying is like any other business in agriculture, it depends very much upon the man whether there is any money in it or not. The average dairyman today is making very little, if any, money. The man above the average is making good money, and the man below the average is working for the fun of it. But this can be said of anything else in agriculture as well. It is only the man above the average who is making any money in raising wheat, or corn, or oats, or potatoes. The average man is just getting a living. The man below the average is making a failure.

In the first place, to make some money in dairying you want good cows. You can only get these cows by careful selection and breeding. Of course, you can go out and buy a good profitable herd of cows, but they cost a lot of money, making a heavier investment than most men can provide. Then, after you have got these cows you have got to reproduce your own herd, and to do that one must be a breeder and a feeder. It requires close observation, careful selection and some knowledge of breeding to produce heifers which will be the equal or the superior of their dams. But it can be done. Thousands of men are doing it. Then these cows must be well taken care of, made comfortable in every respect, and well fed.

Besides this the products must be marketed intelligently. The farmer has not as much control over this part of it as he has over the others. Today dairy products are sold with as little loss to the producer as any agricultural product put upon the market. The average dairyman is getting more than 35 cents of the consumer's dollar. This cannot be said of everything pertaining to agriculture.

Again, a man with good cows, who knows how to take care of them in order to make very much money must grow his own feed, and he must be a good farmer as well as a good dairyman. His profits in dairying depend very largely on the kind of corn he can grow for the silo, how much and how good alfalfa or clover hay he can put into his mow to feed his cattle in the winter time. Very few men today can afford to go out and buy all of the feed which they feed their dairy cows and make anything out of dairying. Of course, there are herds that will show a profit even when the cows are charged with market prices for everything consumed and credited for what they produce, but very few men would be in the dairy business if it wasn't for the fact that they owned farms, grow crops upon them, and then sell these crops to the dairy cow instead of in the open market and get more out of them than they can to sell them in the open market; and if one has good dairy cows he can get a better price for his crops by feeding them to the cows than by selling them on the market. Then, if one is a good dairy farmer, raises big crops of silage corn and big crops of clover or alfalfa hay, and gets good prices for these products with his dairy cows, he ought to be prosperous. When he does this he simply makes two profits; one profit in producing the crop, and that is the only profit which a man can get who does not keep live stock, and the other profit, the profit in selling these crops to his cows rather than selling them off from the farm. If he charges the same price to the cows that he could get for the crops if he sold them on the market he not only saves the hauling of the crop to market but he also preserves the fertility of his farm. By keeping dairy cows and feeding the crops grown upon the farm to the dairy cow, this question of fertility is simplified very much indeed.

Fat yearling beef cattle are always great favorites with the packers and smaller butchers, and of late they have been especially popular, frequently out-selling older cattle that are much heavier in weight. The production of yearling cattle is not carried on extensively enough in the corn belt states, but such stockmen as have adopted this work express themselves as highly pleased with the results. Silage is an important factor in this work, and it vastly cheapens the cost.

There is a large local demand in the Chicago market for handy, fat yearling cattle, and recent sales of these offerings were made at higher prices than were paid for prime, heavy, long-fed steers. Demand is running strongest on these cattle and on light steers, cows and heifers that are fat. But stockmen should remember that the yearlings must be in good shape in order to sell well.

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## Poultry and Bees.

### GUARDING AGAINST ENEMIES OF CHICKS IN SUMMER.

Late-hatched chicks often become the special prey of rats, weasels and hawks unless proper precautions are taken to avoid losses from this source. These enemies seem worse in late summer than early in the season. In the case of rats, this is accounted for by the fact that as soon as hot weather arrives many of them desert their hot quarters around the barns and sheds and take to the old board and rail piles, as well as to the patches of thick weeds and grass. Here they lurk, ready to pounce upon unsuspecting chicks.

As to preventive measures; first, all harbors near the chicks' runs should be banished and the rodents destroyed before they have had time to do any harm. Until this is done the best preventive measure is the free use of wire netting about the coops, such as screening ventilation holes and providing screen doors. Nor must it be forgotten that rodents can burrow, hence when these enemies are present floors in the coops are necessary if losses would be avoided.

It is when chicks run in an open field that hawks and crows do the most mischief. When there are trees or shrubbery in the yards, with a few convenient shelters of boards or boxes under which the chicks can speedily seek protection when a bird of prey swoops down, the losses will not be great. When a hawk or crow gets the habit of visiting the poultry yard regularly, however, as some of these birds often do, the only remedy is to take the necessary time to exterminate it by the gun route.

Indiana.

W. F. PURDUE.

### JUNE POULTRY WORK.

#### Clean up Incubators and Brooders.

By this time it is doubtful whether it will pay to hatch more chicks, and, unless you have not anywhere near enough chicks, it is my opinion that it is unprofitable to hatch any later than the latter part of June. I have had exceptional success this year, both in hatching and rearing, having closed up the incubators by the seventh of June.

We took out all removable parts and scrubbed them thoroughly with scalding water, as also the entire interior of the machine. All soiled muslin and burlap was torn off and burned. After all dirt has been removed, the windows cleaned and polished, we take a small sprayer filled with a coal-tar solution and disinfect the interior thoroughly, closing the doors and ventilators to give the fumes a good chance to work. All removable parts are kept in their respective machines. The lamp is disconnected from the heater, emptied and turned bottom side up. The burner is placed in scalding water for ten minutes and well cleaned. The heater part is cleaned of all soot. In the case of hot water machines the tank is filled with water and covered up, air tight, to prevent evaporation. Then we hang a cheap muslin cover over the entire machine. If the incubator stands on a dirt floor, the legs are blocked up to prevent rotting. The same work is performed on the brooders as soon as they are no longer needed. I have found it a paying investment to thus take time each season for cleaning and storing away the incubators and brooders.

#### Shade and Water.

During these hot days fowls, both old and young, suffer more from the excessive heat than they do from the severe cold in winter. I make it a rule to watch carefully and as soon as they are discovered standing around drooping their wings and panting, I endeavor to give them more fresh air by opening wide all windows, doors and curtains. Have found it necessary, during summer, to have openings in the rear wall of the poultry house as the only means of supplying a proper change of air.

Another thing, all kinds of chickens are badly in need of water at this time of year. Besides having a large supply of fresh drinking water before them, I go one better and have a dishful of sour milk before them. It is healthy and they appear to relish it.

I keep everything in the poultry house and yard in a sanitary condition, disin-

fecting weekly to guard against disease. I bury or burn all dead fowls immediately and guard against feeding tainted beef scrap or mouldy corn, which feeds spoil very easily during hot weather.

The warfare against lice and mites we started about two months ago is being kept up and will be continued up to Christmas time. All we have to do to keep the fowls free of lice is to spray the interior of the house with a good lice killer, and provide a good dust bath for the fowls. I challenge anybody to find any kind of vermin worth mentioning on our chickens.

New York.

F. W. KAZMEIER.

### DRIVING MOTHS FROM HIVES.

We are having trouble with millers destroying bees. Last year we lost several swarms, and have lost one this year. I have gone through the bees and killed the moths but some of the swarms are very weak. Have one strong swarm; the millers are in it but have not harmed it much. Last year we put the swarms into another hive, then sprinkled sulphur on the bottom, leaving it there for three or four days. This was to kill the eggs. If you will tell how to prevent the millers from entering hives, also how to keep ants out, I will be glad.

Clare Co.

J. A.

The principal cause of your trouble is the weak colonies. Where all colonies are kept in good strong condition, moths very seldom molest them. Also, I shall make the guess that you have the common or black bees, as these are very much more liable to let the moths get in than the Italians, although even these will not always resist them. But if you have good strong colonies of any race there will be very little to fear from the ravages of the wax moth. You will see, then, that prevention is very much better than cure, but as it is too late in this case you want a remedy that will apply now.

Go to every hive where the moths are and remove all frames infested with them. I believe you will find there are none right among the cluster of bees, so you will in all probability not have to remove any brood to get the combs which are infested. If you have frames and foundation, better replace the combs with these in part, but the hive should be closed down, by means of a division board, to just about what the bees will cover, so they will be better able to care for themselves in the future. This space can be gradually enlarged as the bees need it until you have a full colony again. When you are removing the combs clear the hive thoroughly of all loose particles of comb or other dirt in the bottom of the hive, since the moths will make use of this to breed in again if you do not.

Sort out such combs as are not too badly used up by the moths and place them in extra hive bodies; set them over a sulphur box and give them a thorough fumigation. If you haven't a box for this purpose use three extra hive bodies on top of each other, setting your coals in the bottom on the ground. Sprinkle on the sulphur and set on the hives to be fumigated as high as you can reach, placing a cover on top. They should be made as nearly air tight as possible or the work will not be effective. Repeat this two or three times, or more if necessary to keep the combs for a long time before using them. To keep the moths from getting in again, never allow the bees to have more combs than they can cover. If you have done a good clean job in getting rid of them there will be very few to start trouble anyway. The worst of the combs which you removed from the hives should be immediately rendered into wax, as all moths in them will be destroyed in this operation.

Mecosta Co.

L. C. WHEELER.

### HOUSING POULTRY ON THE COLONY PLAN.

A certain proportion of poultry keepers have no alternative but closely to confine their fowls, owing, as a general rule, to limitations of space. When this is so there is nothing more to be said. Those who possess a good deal of land, however, are strongly recommended to give the colony system a trial, if they have not done so already, since it possesses so many and such striking advantages over the permanent house and run. I know many poultry keepers who, after consid-

erable persuasion, have been induced to try the colony house system, with the result that they would not now willingly resort to the old method.

There are some excellent types of portable house in more or less common use at the present time. Among the chief requirements of a good portable house are that it shall be well and strongly constructed, afford sufficient protection to the inmates from cold and heat, possess a good system of ventilation, and be easily movable from one place to another. Owing to its constant removal, oftentimes over rough ground, it must be substantially built, and the framework should be made of quartering not less than 1½ inches square, while a few of the principal supports should be 2-inch stuff. The boarding should not be more than ¾ inch in thickness, since lightness is an important feature in this type of house. A heavy portable house defeats its own purpose. Good ventilation is extremely important, for unless the fowls are always able to breathe pure and fresh air their health suffers. Personally, I am a great believer in the open-air type of house. The fowls are healthier and stronger, while the egg yield suffers in no way. The house should be fitted with two, three, or four wheels, not less than two inches wide, which enable it to be moved easily from place to place. There is a considerable saving in capital expenditure when the colony plan of housing is adopted, for the cost of wire netting, posts, gates, and erecting the same is dispensed with.

Apart from the advantages already enumerated, there is still another point in favor of the colony plan of housing, namely, the benefit the land derives from the presence of fowls. An adult hen of average size, produces roughly, 100 lbs. of highly concentrated manure in the course of 12 months. This is to say that a couple of dozen hens yield a ton of manure per annum, thus explaining at once how a meadow shows so great an improvement after fowls have been running over it for a year or two. Poultry moreover, have the effect of encouraging the finer grasses at the expense of the coarser. I have on several occasions known a plot of comparatively poor land transformed into quite a good meadow in the course of three or four years through heavily stocking it with poultry. It is sometimes asserted that cattle will not graze land over which poultry have been running, but this has never been my experience, except when the land has been stocked too heavily.

Canada.

W. R. GILBERT.

### EASY METHOD OF GETTING BEES INTO MODERN HIVES.

For the bee-keeper who has bees in box hives, barrels, hollow logs, etc., the best time for transferring them is at swarming time or shortly after. After blowing a little smoke into the hive, sufficient to alarm the bees, we set it a little aside and put in its place the modern hive, full of wired foundation. We now turn the old hive, or whatever it may be, bottom side up and place a box over it. If the bees are smoked sufficiently it will make no difference, even if the box is not close fitting to the old hive. Then, with a stick or hammer, rap on the hive from 10 to 20 minutes. The bees will fill themselves with honey and go with the queen into the upper box and cluster. If toward the last we carefully set the box aside once or twice, and vigorously shake the hive, then replacing the box, we will hasten the emigration of the bees and make it more complete. A few young bees may still remain in old hive, but these will do no harm.

Next take the box which contains the queen and nearly all the bees and shake the bees all out in front of the hive already placed on the old stand. The bees will at once take possession and draw out the foundation in a surprisingly short time. Should they be unable to gather any honey for some days, which at this season is not likely to occur, you must feed them.

Set the old hive aside for 21 days, when the young bees will have all hatched from the cells. Should the weather be cool it would be well to put old hive indoors so the brood will not chill, but this is seldom necessary. We now drum out these bees as before, kill the queen which they have reared, and unite them with the others; or, if you care for increase and enough bees have stayed, leave the queen alive and form a separate colony by putting them into a new hive.

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N. F. GUTE.



# Live Stock.

## THE LIVE STOCK AND MEAT SITUATION.

The shortage in the supply of meat-producing animals in the United States is steadily becoming more pronounced, and it is evident that the country is facing an era of short production of meat, according to a recent report issued by the United States Department of Agriculture, which follows: In the last six years there has been a decline of over 30 per cent in the number of beef cattle in the country, while the population and the consequent demand for meat have increased. According to estimates of the Department of Agriculture the beef cattle in the country on January 1, 1907, numbered 51,566,000, and at the beginning of the present year the number was only 36,030,000.

More than half of the meat produced in the United States is slaughtered under government inspection. A decrease of over 13 per cent is shown in the number of animals killed under this inspection in the first three months of this year as compared with the same period of last year.

The year 1912 was a year of high prices for all classes of food animals, as is evidenced by the greatly increased average prices of live stock at Chicago, the representative market of the country. Thus, the average price of cattle (native steers) for 1912 was \$7.95, as against \$6.50 for 1911, or an increase of 22.31 per cent, while the advance in range steers was still greater, being 31.58 per cent. The average price of hogs in 1912 at the same market was \$7.55, as against \$6.70 for 1911, which is an increase of 12.69 per cent. Similarly the average prices of sheep and lambs rose from \$3.95 and \$5.90, respectively, in 1911 to \$4.55 and \$7.10, respectively, in 1912, which is an increase of 15.19 per cent for sheep and 20.34 per cent for lambs.

Unfortunately, when prices of live stock rule high, as the case in 1910, there is a natural tendency for farmers to rush everything salable to market, including immature animals and, worst of all, breeding animals. This inevitably brings about a future shortage, and so the country suffers from alternate periods of comparative and real stringency, while producers often lose heavily through the instability of prices.

With our diminished production in the face of the heavy demand and high prices of the home market, we no longer have a surplus for export, and it is no wonder that our export trade in meat animals and products has declined heavily. Our once great trade with England in cattle and fresh beef has disappeared, and the only considerable items now shipped to foreign markets are prepared hog products such as bacon, hams, and lard. England is now drawing its imported beef supply mostly from Argentina, and its supply of mutton and lamb from Australia and New Zealand as well as Argentina. The Australian colonies are sheep rather than cattle countries and export probably more than four times as much mutton and lamb (by weight) as beef. The number of cattle in Argentina showed a decrease at the last census (1911) as compared with the preceding one (1908).

For the first time in our history the exports of animals and animal products of all kinds in 1912 fell below the imports in value. However, the imports are very large only in two items, both of them raw products—hides and wool. The former were admitted free of duty, while the large importations of wool were made notwithstanding a considerable duty. The import trade in hides and skins has assumed enormous proportions, the total value of the shipments in 1912 being considerably over \$100,000,000.

The total value of the imports of animal origin in 1912 was \$203,444,633. Compared with the previous year this is an increase, in round figures, of no less than \$60,500,000. The greatest single increase occurred in cattle hides, which almost doubled, while all the other classes of hides and skins showed substantial advances. The second largest increase was in wool, the quantity imported in 1912 being 238,118,350 lbs., valued at \$42,210,377, as against 155,922,510 lbs., valued at \$25,479,422 in 1911.

It may be noted that the majority of the imported cattle hides come from Ar-

gentina. Europe supplies a good many, as well as most of the calf skins. East Indies is the largest contributor of goat skins, while most of the sheep pelts are from England. The latter country also sends us most of the imports of the fine wools. The inferior grades—the carpet wools—originate in Russia and China.

There was a largely increased importation of cattle in 1912, the number being 325,717 as against 252,413 in 1911, and 211,230 in 1910. These animals were nearly all brought over the Mexican border for feeding purposes. They help a little, though not very much, in our beef supply.

The importations of cheese continue to be large, the quantity in 1912 being 48,928,857 lbs., valued at \$9,368,573. This cheese comes mostly from Italy and Switzerland.

The domestic exports of animals and animal products in 1912 were valued at \$185,434,196. This is the smallest total since the trade became established on a large scale subsequent to the Civil War. The principal items were: Lard, 552,648,777 lbs., valued at \$58,586,150; bacon, 192,021,659 lbs., valued at \$23,483,949; hams and shoulders, 176,058,810 lbs., valued at \$22,235,899. Each one of these was many millions of pounds less than in 1911.

## HAULING HOGS IN HOT WEATHER.

It is very bad to see or know of valuable hogs dying from overheating while being hauled to market during the hot summer months. Men who have hogs to market during the hot weather should make proper preparations for getting them to the market. It is almost every summer that I know of some farmer losing one or more hogs while hauling to the market.

Last summer I met a farmer on his way to town with two hogs in his wagon, one was dead and the other nearly so. The hogs were very fat and it was a hot afternoon, although the man had waited until nearly night to deliver the porkers, which had been contracted to the butcher at so much per pound on foot. The farmer was yet several miles from town and he knew the butcher would not receive the dead hog as it would be a violation of the law to sell it for food. He asked my advice as to what disposition to make of it as it had died almost before he knew it was hot. There was nothing to advise under the circumstances only to sell to the soap maker. This meant considerable loss to the farmer, and could have been avoided, had he made arrangements to keep the hogs cool while hauling.

The most of hogs that die from overheating while being hauled to market are in wagons with nothing about them to keep them cool. The jolting of hauling and the worry of loading, added to the intense heat of the road on a summer day is more than the fat hog should be expected to stand.

I know of one farmer who hauls fat hogs without regard to the weather, and has never lost a hog from overheating. He has a wagon with a tight floor and a shallow box. He puts sideboards of slats above this box and covers with slats. On the bottom or floor he puts a lot of hay or straw that has been wet thoroughly with water. He usually has the hay to a depth of six or eight inches. After getting the hogs loaded he turns on the hose and wets the hay again. Then he waits a short while to allow the hogs to get quite cool a little before starting to town. The evaporation of the water from the wet hay keeps the hogs cool, while the hay serves as a cushion to lessen the jolting as the wagon rolls over the country roads.

I was about to forget to add that above the slat covering of the wagon he puts up regular wagon bows and stretches over these a canvas to furnish shade. All these precautions may seem a bit troublesome, but when we consider the safety which it assures, it really pays.

This farmer never has his hogs crowded in the wagon, usually hauling not more than three large hogs at a time when the weather is hot. Also, he manages to load them with just as little excitement as possible, as he attributes the loss of a great many hogs to the worry of loading instead of the temperature. He never puts any water on the hogs, but turns the

hose on the hay only. To put cold water on a hot hog means death to the animal, in a great many cases.

I regard another point of safety which might be added. That is the use of a set of wagon springs to lessen the jolting. In fact, no farmer should use a wagon without springs when hauling live stock and perishable vegetables and fruits. Texas. A. M. LATHAM.

## ERADICATION OF HORSE OR STABLE FLIES.

During the last four or five years, the public have been making great endeavors to subdue the house fly. Cities have made their slogan, "swat the fly," and other phrases which have the same meaning. The house fly is known to be a carrier of disease and hence he should be killed. Moreover, aside from the fact that house flies carry certain infectious diseases, the very nature of their mouth parts enables them to carry other diseases which are not of a contagious nature, as the word "contagious" is used in the popular sense. The house fly cannot bite. His mouth is so formed that he gets his food by lapping in somewhat the same manner as the cats obtain their food. Flies love to feed on carrion and refuse, decaying animal or vegetable matter. Now if these flies would consent to disinfect their mouth parts before they light on humans and animals, we would not object to their presence but the very fact that they do not do this, makes their presence a menace to humanity and the whole animal kingdom.

While it is proper to kill the house fly and thus exterminate him, it is no less essential that the horse or stable fly should also be destroyed. This fly has mouth parts which are unlike those of the house fly. The stable fly bites while the house fly does not, although the stable fly resembles the house fly in appearance. In the summer time the stable fly annoys cattle and all other animals very greatly. Before storms these flies seem to have an instinctive fear of the storm and so, on such occasions, they flock around the houses and buildings and attack people more at those times than at any other. Aside from the annoyance that they prove, they are also accused of being the carriers of infantile paralysis. This is not conclusively proven against them but they are suspected of being the transporters of this dread disease which causes a great deal of suffering and misery each year. The young of the stable fly live in fresh horse manure and, as is the case in combatting any other insect pest, the first point of attack should be its breeding places.

Inasmuch as this same stable fly is very easily killed, there is not much excuse for not killing him and thus ridding both ourselves and our animal friends of his annoying habits. It is a well known fact that cows give more milk when not annoyed by flies, and other stock put on flesh faster when the flies are subdued. This is easily seen during a cool spell in the summer when the cows maintain a steadier flow of milk and other animals flesh up more rapidly.

Here is a remedy which has been tried with great success on a number of Michigan farms: Make a cover for a barrel and put the covered barrel in some safe place convenient to the stable. Now fill this with water and throw into it four or five pounds of white arsenic. Stir well and the next day put in one-half pint of molasses. Each morning dip out a sprinkler full of this mixture and sprinkle over the stable floors and manure heaps. Fill the sprinkler with pure water and put in the barrel again. This keeps a constant supply of the mixture always on hand and once in a while a little more white arsenic and molasses is all that will need to be added to make the liquid effective in killing off the flies. The theory of the practice is: The white arsenic will not all dissolve in the water, only enough to saturate it. Some will be left undissolved in the bottom of the barrel. Now when the sprinkler full of fresh water is dumped into the barrel, more of the arsenic will dissolve. So the process goes on each day until all the arsenic is dissolved. Needless to say, this mixture is very poisonous and stock must be kept from getting into the barrel, also hogs and poultry from having access to the manure pile. This remedy has proven efficient and is one which is easily applied and the extra profits derived from the herd and other animals will more than repay the owner for the time and expense involved, to say nothing of eradicating this possible menace to children. Ingham Co. I. J. MATHEWS.



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DETROIT, JUNE 21, 1913.

## CURRENT COMMENT.

In driving through the country one sees in almost every locality evidence of an increased and wholesome sentiment in the matter of highway improvement. Long stretches of road are being graveled and roads previously improved, or ordinary earth roads for that matter, are being kept in good condition by the use of the King drag at opportune times. In some sections of the state there is still greater evidence of the present trend of public sentiment in the matter of road improvement. On the east side of the state, leading north from Bay City, through the important towns, the main highway has recently been improved by public bees, in which the citizens of the cities and towns as well as the farmers in the territory traversed by the highway, have donated freely of their services, while the farmers' wives and daughters have aided in the serving of needed refreshments to the workers. On the west side of the state there is great interest in a through highway following the lake shore all the way.

All these things are evidences of the interest which is being taken in the general betterment of highways at the present time. They also show that the country people are adapting themselves to the new highway system better than has heretofore been the case, and we anticipate that, although in recognition of a certain expressed demand along that line the Legislature passed a law permitting townships to go back to the old pathmaster plan of highway organization where upon referendum a majority of the voters so decree, that there will be few cases in which the voters of a township will avail themselves of this permission. With a number of the counties in the state having recently adopted the county road system, the trend of public sentiment appears to be in the other direction at the present time.

Just now it is the popular thing for everyone to be interested in agriculture. With consumption rapidly overtaking production in our own country and with the application of science to the solution of problems in agriculture there has been a more general recognition among all classes of citizens of the importance and dignity of agriculture. Business men are everywhere exhibiting an intense interest in agriculture from an economic standpoint and at meetings of business men's associations agriculture is nearly always an important topic of discussion. For example, it was given more time than any other topic discussed at the recent meeting of the State Bankers' Association.

This is true, not alone in Michigan, but the country over, and in some sections of

the country the business men have donated liberally toward the promotion of agriculture in their state. As an example of this kind of promotion work it is stated upon good authority that in Texas something like a quarter of a million dollars have been expended in the form of prizes for the best products grown by the boy and girl farmers of that state. As noted in the last issue, an important farmers' organization in Texas has, after an investigation, officially deplored this method of promotion work and suggested other methods by which those who desire to aid the agriculture of the state could render it a much greater service.

In giving their views of what the farmers need, the committee of this organization having this matter under advisement stated, "It's prices, not prizes, we want. Only one farmer can be benefited by prizes, but a half-million profit by increase in prices." In other words, this committee made it plain that production is not a problem which farmers would from choice submit to the business interests for solution, but indicated that business interests could render a valuable service by co-operating with the farmers in the matter of caring for the surplus products and placing them upon the market in the manner which will best aid them in improving their homes, giving their children better educational advantages, etc.

There is something of truth in this suggestion and of wisdom in this attitude. The business men of the country cannot have too great an interest in its agriculture, but they should realize that in order to render to agriculture the greatest service they should co-operate with the farmers in the matter of making available their own business knowledge and judgment in the solution of the business problems of the farm, rather than seek to teach them with regard to technical factors of production, concerning which the up-to-date farmer has a greater store of valuable knowledge.

## The Middleman's Profit.

A report issued by the Department of Agriculture last week touches on the oft discussed question of the responsibility of the middlemen for the increased cost of living. This report apparently clears the middlemen of that indictment by stating that during the last 30 years of advancing prices the margin between the selling price of the producer and the purchasing price of the consumer has not widened much if any.

Detailed comparisons are given of the average prices for the last 20 years with those of the 10 years preceding that period. It was determined that wheat in Chicago advanced 32 per cent while the wholesale price of flour advanced 29 per cent and the retail price of flour only 28 per cent. Hogs advanced about 33 per cent, the wholesale price of hams advanced 24 per cent and the retail price but 32 per cent. The two items in this line of production which showed a large advance were the retail price of smoked bacon, which has advanced 55 per cent and the retail price of pork chops which advanced 45 per cent, while the wholesale price of lard advanced but 31 per cent and the retail price only about 30 per cent.

Steers on foot in Chicago advanced 24 per cent as compared with 23 per cent advance in the wholesale price of beef, a 19 per cent advance in sirloin steak and 23 per cent advance in rib roasts. Sheep advanced 19 per cent in the same market while the wholesale price of mutton advanced 36 per cent, figures not being given for the retail price of this product.

Figures relating to the margin in the price of potatoes during the last ten years show on December 1 the average price was but 26 per cent higher than in the preceding ten years, while for the same period the retail price advanced 29 per cent.

These figures are, of course, not conclusive as many factors enter into the making of prices on products of this kind, but the variations in advances noted show that the law of supply and demand has not a little to do with the margin in prices between those paid by the consumer and those received by the producer. Take, for instance, in products such as bacon and chops, which form only a small percentage of the total products from the hogs killed, yet the demand for these products has caused a marked increase in the retail price as compared with the other products from the same animals.

From these figures it would appear that the farmers of the country have been largely getting the benefit of the advance

in price which has contributed to the high cost of living during the past ten years. They would, however, undoubtedly receive a larger proportion of that increase by more judicious methods of marketing which would contribute to a more even distribution of products throughout the year, as has been brought about to a considerable degree in the two products of butter and eggs, particularly through the influence of the cold storage business upon the marketing and distribution of these commodities to the consumer.

As noted in a comment appearing in the last issue, the downward tendency of prices for agricultural products during the past year has doubtless been a contributing factor to the present apparent shortage of money and the consequent curtailment of loans by banks. In this connection another factor of general business prosperity which is worthy of consideration is the effect of a gradual, but somewhat long continued, decline in prices of agricultural products upon the business men who are engaged in handling those commodities.

From the statistics quoted from the Department of Agriculture report in our comment of last week it appears that the average price of agricultural products declined something like 28 per cent during the year. Obviously when a general average decline of this nature occurs the dealers who are handling agricultural products will inevitably meet with a loss upon some of their holdings during the period in which quantities sufficient for carlot shipments are being purchased.

In the aggregate this loss would be considerable and would result in a corresponding shrinkage in the available capital or surplus accumulations of this class of business men during the year, thus creating a further demand upon the surplus capital represented by the financial institutions with which these men do business. When this factor is considered it will be seen that a substantial and somewhat continued decline in average prices for agricultural products would have a still greater influence upon general business prosperity as indicated by the availability of surplus capital than is represented by the loss to the producers. However, as previously indicated, there are evidences that prices have reached the low level and that a reaction already begun, if continued, should make this condition temporary and allow it to pass without any serious effects on the general business prosperity of the country.

## Rural Telephone Development.

Census statistics are ordinarily rather dry reading, but they afford some interesting sidelights on the development of the country along other lines than those which are represented by mere figures. A case in point is the recent census report dealing with the wooden poles purchased in the United States in 1911 for the various purposes for which such material is used. These figures show that the number of oak poles used increased rapidly from 1907 to 1910, but decreased greatly in 1911. Oak poles, which are marketed in relatively short lengths, have been used extensively in the building of rural telephone lines, the development of which was at its maximum point in 1910, as indicated by these figures relating to the use of oak poles which decreased considerably in 1911. Of course, in some sections other timbers are used for this purpose, but undoubtedly this is a good index of the relative development of the rural telephone service which is now the general rule rather than the exception in the up-to-date farm community.

## Proposed Cold Storage Legislation.

A bill recently introduced in Congress designed to regulate the cold storage business, illustrates the change of sentiment which has resulted from previous inquiry into and discussion of this problem by Congress. This bill would provide for the labeling of cold storage edibles with the date on which they were placed in storage and provides that the merchant who sells such goods shall sell them under the original label. Under the terms of the proposed law the length of the storage period of foodstuffs would be limited to ten months and would also restrict the transportation of cold storage food products in interstate commerce.

This bill is mild in its proposed terms of regulation as compared with others which have been before the body in previous years, thus indicating that those

proposing cold storage legislation in Congress are looking at the proposition from a little different angle than was the case a few years ago.

## HAPPENINGS OF THE WEEK.

## National.

Nearly a block of business property was destroyed by fire at Hillsdale, Sunday. The loss is estimated at \$46,000, with a total insurance on the property of but \$6,000.

Forest fires are threatening at a number of points in northeastern Michigan, and unless rains come soon the situation will be critical. Alpena and Presque Isle county are suffering the most. Every precaution is being taken to keep the fires under control, but weather conditions will be the greatest factors in the fight.

Two lake steamers, the William M. Snyder and Jesse Spalding, collided near Keweenaw Point, Lake Superior, Sunday during a fog. The former boat was lost in the fog and it became impossible to locate her because the distress signals ceased. There is apprehension that she may have gone down.

Two costly fires visited Detroit Sunday night and Monday morning. Lumber yards at Bellevue and the Michigan Central Railway were partially destroyed at midnight, the loss being estimated at \$50,000, while three hours later a chemical laboratory and store-room at Lafayette avenue and Tenth street burned, causing an estimated loss of \$25,000.

The work of the national senate committee in the probe of conditions in the mining district of West Virginia, is revealing a startling situation. It appears that it will be up to the mine owners to prove that they did no back the action resulting in the firing of machine guns from trains into camps of miners and their families, during the strike there. The probe of the operators began Monday.

It is anticipated that through the visit to this country of Dr. Muller, minister of foreign affairs of Brazil, that improvement in the business relations between the two countries will result.

A rear end collision between two interurban cars near St. Louis, Mo., Sunday night, injured 24 persons.

Fire Sunday night destroyed 40 of the stock yard sheds at the Union Stock Yards, Chicago.

Four persons were hurt, one perhaps fatally, when an automobile crashed into a buggy in Leroy township, Calhoun county, Sunday.

Miners in the Paint and Cabin Creek mining districts of West Virginia, have voted to continue the strike which began there a year ago, and has resulted during that period in the incidents which are now furnishing material for investigation by a committee of the United States Senate. The vote, according to reports, was not taken under orders of any union, but was the result of a ballot taken at independent meetings.

As a result of the high temperature on Monday many lives were lost and prostrations were numerous.

The board of education of Battle Creek has taken a rather unique position with regard to honors in the class now graduating from the high schools of that city, no class honors being awarded. The board declares that these honors have always gone to "bookworms" who have neglected every other phase of high school life for the scholarship awards.

A. D. Woodruff, a Civil war veteran, 74 years old, died, the effects of the heat and heart trouble, while sitting on the porch of his home at Saginaw, Mich.

The condition of the strike in the Pere Marquette shops at Saginaw remains the same as when the men walked out three weeks ago.

The state encampment of the Grand Army of the Republic convened in Lansing, Tuesday. It is anticipated that this gathering will be the largest of recent years. Spanish war veterans and other allied organizations hold their annual sessions at the same time and place.

The state board of health will co-operate with the federal government in making a study of the pollution of the waters of the Great Lakes. For this purpose a laboratory is to be established at Port Huron for a month, in charge of one of the state officials.

## Foreign.

The German people are celebrating the twenty-fifth anniversary of the accession of Emperor William this week.

Earthquakes extending over many parts of Bulgaria and lasting several hours, resulted in many fatalities, particularly at Tirnovia and Grabovia. It is reported that many churches and public places have been shaken to the ground at the former point.

Mexico is still in disorder and the federal government is given concern by the uprising of residents of the state of Campeche under the leadership of Governor Manuel Briton. The rebels also threaten the town of San Luis Potosi, the key to communication with Tampico and the oil fields.

A freighter jammed the locks of the Welland canal at Port Dalhousie, Ont., Sunday, and three of the locks were carried away. It will be some time before traffic on the canal can be resumed.

Mrs. Pankhurst, the English militant suffragette leader, has again been released from prison because of ill health.

It appears that the Japanese are proceeding sanely in the effort to inform themselves regarding the feeling in this country on the land legislation passed by the Legislature of California. On Monday four prominent Japanese arrived at Washington to ascertain the sentiment here regarding the relation between Japan and America with special reference to the California issue.



# Magazine Section

LITERATURE  
POETRY  
HISTORY and  
INFORMATION

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

The FARM BOY  
and GIRL  
SCIENTIFIC and  
MECHANICAL

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

## Adobe—The Poor Man's Brick.

By E. I. FARRINGTON.

PROBABLY half the people of Mexico live in mud houses. The houses of the well-to-do residents of the cities are made of stone, but out in the open one finds mud houses everywhere. They are very comfortable houses, too, warm in winter and cool in summer, not being easily affected by changes in temperature. The material of which they are made is the native clay, or adobe, which is remarkably plastic and cohesive.

The use of adobe is not confined to Mexico, however, for in many parts of our own country this peculiar clay has been employed for centuries. There are some very old adobe buildings in Califor-

terial. When adobe is also put on the roof it must be supported with strong timbers, for it is very heavy. One of the illustrations shows a New Mexican Indian builder at work. The way in which the roof is supported by posts and cross-pieces is plainly seen. The house is very nearly completed, the front wall remaining to be finished. The work goes slowly, as the clay must have plenty of time to dry.

In New Mexico and Arizona the industry of making adobe bricks is quite a

material which was written by the superintendent of the Plains sub-station. Some of the advantages of adobe houses were cited in that bulletin, the claim being made that they are superior to cement and concrete block houses in that they are non-conductors of heat and cold, that they never sweat or become frosty on the inside, that they do not settle after they become dry and that they can be made as permanent, comfortable and attractive as a house need be.

The adobe buildings at the Plains sta-

open space near the water supply and spread in a wide circle about eight inches deep. Enough water to wet the pile to the bottom is thrown on, after which horses are made to tramp round and round in the mud, more water being added as necessary, until a soft, sticky mass has been secured.

When the grass is short, straw or hay is sometimes mixed with the adobe during this tramping down process to act as a binder. The work of tramping and wetting and mixing is kept up until the mass can be handled nicely with a manure fork. Then it is ready for use.

The wall is built up slowly, often at the

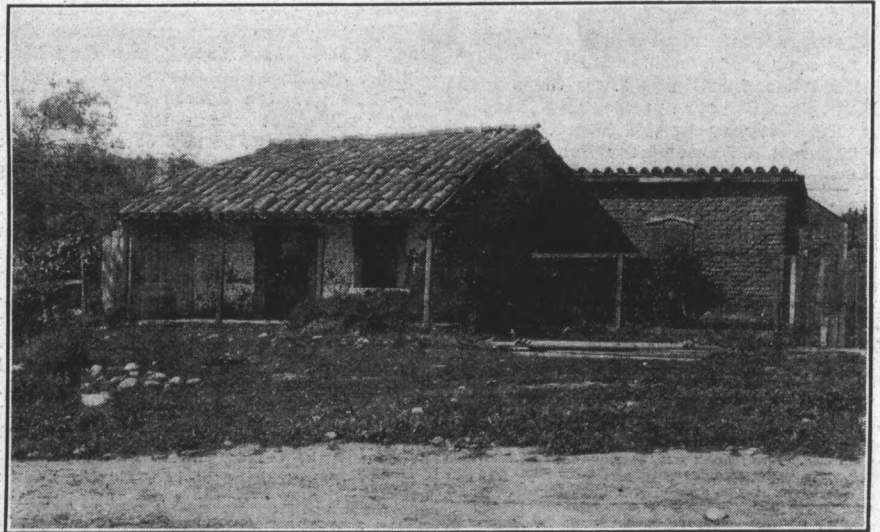


Mixing Adobe Preparatory to Making into Bricks.

nia and New Mexico, and the Pueblo Indians have whole villages constructed of it.

As a matter of fact, adobe is too valuable as a building material to be overlooked or given up. In sections where there is but little rain it gives great satisfaction; where the rainfall is heavy and long continued the clay gradually dis-

general one and two of the illustrations show men at work in a brick yard of this character. The clay is made wet and mixed on a small platform with handles, on which it is carried to the molds. After being molded the bricks are spread out in the sun to dry. They are commonly made in two standard sizes, 18x9x4 and 16x12x4. From one to two weeks of exposure to



An Ancient Adobe House Having a Tile Roof.

tion have concrete foundations, which provide adequate protection against rats and mice, the rodents never working in the walls. The adobe is not made into bricks but built up in layers, work on all the sides being done at the same time.

The process is interesting, for the plains farmer who desires to erect a new house, or barn, or shed, simply plows up suffi-

rate of a layer from six to twelve inches thick a day. When a layer is in place on all four sides, a board is placed on top and the overlapping adobe trimmed off with a hayknife. The trimming has to be done before the clay has hardened.

• When the weather is warm and dry the workmen get along pretty rapidly, but in late fall and early spring there is much



A New Mexican Indian Building an Adobe House.

solves and one finds his house melting away.

Among the Mexicans, and the Indians farther north, adobe bricks are made in very crude fashion, being shaped in wooden molds, earthen jars being employed to carry the water needed. To smooth the tops the bare hands are used.

Often only the walls are adobe, the roof being thatched with straw or similar ma-

the sun is required, and the bricks must be turned every other day so that they will be properly baked on both sides. When they are hard enough, they are stacked away under cover until needed.

Adobe is commonly used in the west even as far north as Colorado, especially on the plains, and a few years ago the Colorado agricultural experiment station issued a bulletin on adobe as a building

cient ground, wets the soil and proceeds to transform it into adequate building material. First the foundation is laid. Then posts are set at each corner and at intervals along the proposed wall, care being taken to have them perfectly plumb, for they are to serve as guides.

Next a patch of prairie land, where the grass is thin and tall, is selected and a thin sod plowed. The sod is hauled to an

delay. Often it is deemed wise to wait two or three weeks before resuming the work. The frames of windows and doors are set in place as the work progresses and the mud walls are built firmly against them. If effect is considered, the walls may be covered with cement when finished and then marked off into blocks.

Sometimes the adobe houses of the plains have iron roofs, and occasionally



Placing Adobe Bricks in the Sun to Bake.



## BEGAN YOUNG

Had "Coffee Nerves" from Youth.

"When very young I began using coffee and continued up to the last six months," writes a Texas girl.

"I had been exceedingly nervous, thin and very fallow. After quitting coffee and drinking Postum about a month my nervousness disappeared and has never returned. This is the more remarkable as I am a Primary teacher and have kept right on with my work.

"My complexion now is clear and rosy, my skin soft and smooth. As a good complexion was something I had greatly desired, I feel amply repaid even though this were the only benefit derived from drinking Postum.

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"I changed from coffee to Postum without the slightest inconvenience, did not even have a headache. Have known coffee drinkers, who were visiting me, to use Postum a week without being aware that they were not drinking coffee."

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Postum comes in two forms.

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A big cup requires more and some people who like strong things put in a heaping spoonful and temper it with a large supply of cream.

Experiment until you know the amount that pleases your palate and have it served that way in the future.

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shingles are used. Adobe or sod roofs are common, however, and with a little care may be made perfectly tight. In California adobe houses with tile roofs may be found.

Adobe houses may be plastered within, divided into as many rooms as deemed desirable and be quite as cozy and comfortable as houses made of other materials.

## Robert's Promotion.

By Janet T. Van Osdell.

The sound of a boy's cheery whistle floated upon the still summer air. Mrs. Childs smiled as she heard it and, stooping forward in her chair, she drew aside the white curtains of the cottage window that she might better watch her boy's approach. Ah, there he was, and already he had seen her, for he was waving his cap in greeting. And he must be in a merry mood for now he was tossing the cap up and catching it as he ran. Entering the gate, Robert threw another quick salute at his mother, turned a rapid succession of handsprings, followed by half a dozen somersaults, and landed upright at the steps of the porch.

"Ten dollars a week, mother," he cried before he had fairly entered the cottage. "Now what would you say to that? Oh, you wouldn't say, would you? You'll just let your eyes shine like stars and do the talking. Well, then, talk all right and I can see you won't do any crying over my leaving a job that pays \$4.50 a week for one that pays \$10. Oh, no you won't."

"My dear boy, that seems so incredible that I can't say much," answered Mrs. Childs. "Who in this town would pay a boy like you ten dollars a week? Not that you're not worth it, but business men don't see it. They count so much on years."

"Well, this job is just as good as got, though I'm not put on the pay-roll yet. And it isn't in this town either, though it's most as good. It's in the State Bank of Ashton. They're willing to pay ten dollars because only a boy who can furnish the best recommendations and can put up a cash bond can have the job. Mr. Morris says he will go bond for me and I sent recommendations from Mr. Schmidt and Mr. Curtis. This morning I got a letter from Mr. Pettingill, the president of the bank, telling me to call tomorrow at two o'clock sharp. Mr. Curtis knows Mr. Pettingill's ways to a T, because years ago they were in the grocery business together, and he says two o'clock means two o'clock with Mr. Pettingill and if it was one minute after two when I got there the job would be canned for me. But no such chance! I'll be on the bank steps at five minutes before two, at four minutes of I'll walk up the steps, at three in the door, at two minutes up to Mr. Pettingill's private office, at one minute I enter and at two o'clock sharp I bow to the president. I'm just starved, mother."

"Yes, I know, dear, and I have everything ready. Just hand me my cane and I'll go out and dish things up."

"Dish nothing! You'll sit down in your chair at the table and I'll do the dish-ing."

Mrs. Childs complied readily enough, for since her illness following upon her husband's death she had been far from strong and was able to get about only with the aid of a cane. During this time Robert had been the sole means of support. Before his father's last illness he had worked in Mr. Curtis' grocery store out of school hours. But when he saw that he must become the provider for the home he gave up school and took a full-time position with Mr. Curtis. It was a small store in a little town and held no prospect for the future. So Mr. Curtis, knowing of the responsibility that had been placed upon Robert's young shoulders, advised him to keep a lookout for something better in Ashton, a thriving young city about six miles distant from Colegrove. Robert followed this advice and the result was his present prospect of a better position.

There was a hard shower during the night but the next day dawned clear and cool. Robert was grateful for this, as he was planning to ride his wheel over to Ashton. The shower would have settled the dust and beaten down the sandy pike into prime shape for a wheel. Then, too, after a cool and dustless ride he would be more presentable when he appeared before Mr. Pettingill than after a hot, dusty six miles. Though ordinarily no more particular about his appearance than are most boys of his age, on this

occasion Robert was most anxious to look his best that he might make a good impression on Mr. Pettingill, as every boy can understand who has seen the likelihood placed before him of stepping from a futureless, poor-paying job into a promising, well-paying position.

Robert was up early. After doing the chores about the house he spent half an hour tinkering with his wheel putting it in good shape. Then he dressed in his best suit. He wished to start for Ashton at twelve o'clock which would amply allow for any delay that might occur and make certain of his being before Mr. Pettingill at two. So he planned to have a lunch of crackers and cheese at the store and leave from there instead of coming home to lunch.

"When you see me again, I'll know for sure, though for that matter I just as good as know now," he said as he mounted his wheel and rode away.

The morning passed slowly enough, for Robert was anxious to get the matter settled. At a quarter of twelve he weighed out half a pound of crackers and a quarter of a pound of cheese for his lunch and dropped eight cents in the cash drawer in payment. These strictly business-like ways of Robert sometimes amused Mr. Curtis a little, but they also pleased him and led him to place the strictest confidence in the boy. It was the strength of his recommendation that had given Robert the encouraging letter from the bank.

While Robert was eating his lunch Mr. Curtis had a telephone call from his wife, urging him to come home at once, as Betty, the three-year-old baby, had swallowed some poison.

"I'll have to go right up, Rob. You just hold down the business until Nathaniel gets back. Oh, you had that engagement with Mr. Pettingill, too. Well—"

"Don't bother a second about me, Mr. Curtis," cried Robert. "Just you hurry home to Betty. Nate'll get back in time and my wheel's in fine shape and so are the roads."

It was one o'clock when Nathaniel returned from dinner and so Robert was fully an hour later in starting than he had planned. He rode away without any misgivings, for he was sure of himself and of his wheel.

He was within a mile of the limits of Ashton when he saw some distance ahead of him, the figure of a boy or young man headed in the same direction as himself. He paid little attention to it, however, except to notice that the pedestrian was going along at a rapid gait. About a quarter of a mile farther on a roadster whirled past Robert. So quickly did it approach, and so close upon him was it when it gave a honk, that Robert barely saved himself by swerving so suddenly to the right that he was thrown from his wheel. Neither he nor the wheel were injured and he remounted and rode rapidly on. Then he gave a cry of horror for he had looked up just in time to see the big car ahead knock the walking figure to the side of the road and then tear on without stopping.

Filled with indignation, Robert put on all speed and in a moment dismounted by the side of the prostrate form.

"If it isn't Lute Rundell. Lute Rundell of all fellows!" And he looked scornfully enough at the boy lying before him. Many a taunt had come from those now-still lips as the dandy of Colegrove had met Robert on his errands for the grocery store. The jeers had ceased after Robert had had an impressive interview with him in a deserted alley, but Lute still assumed high airs when he came in contact with Robert at his work.

The accident had taken place near a bridge, and Robert knew there was a spring of water just to the side of the viaduct. He looked at his watch. Ten minutes of two and he was still half a mile from Ashton! Well, he certainly didn't owe any good turns to Lute Rundell! He would draw him to one side of the road and ride on to Ashton and have his interview with Mr. Pettingill; then if

no one had taken care of Lute meanwhile, he would help him as he came back. He mounted his wheel and started, but it was only to circle and come back. No, he couldn't leave anyone, not even his old enemy, lying there helpless by the road.

He set his wheel against the bank and went to the spring, whence he returned with a can of cold water which he dashed on Lute's face. It brought the boy to instantly and he sat up, sputtering.

"Hello, Lute," said Robert. "Got knocked down, didn't you? Get up and see whether you've got any broken bones."

Lute got upon his feet. "Just weak, I guess," he said, after trying his limbs rather unsteadily. "How'd you get here, Rob?"

"Just riding back of you on my wheel and saw the whole thing. That crazy driver came near getting me, too, but I dodged just in the nick of time. All right now?"

"I guess so if only I had a drink of water. Would it—"

But before Lute could finish his sentence Robert was off for the drink.

"Oh, I guess the fall hasn't hurt me any," said Lute after he had drunk some of the water. "But what does hurt is that I had an appointment in Ashton at 2:15. I was going after a position. I had a chance at a big opening, one that you'd give your eyes for, I bet."

"It's five minutes after now," said Robert and he swallowed a big lump in his throat as he said it, for he had planned that at this time he would be coming down the bank steps with the position secured. The coincidence of Lute's being so near missing an appointment regarding a position, just after he had missed his own, gave Robert a kindlier feeling toward his erstwhile enemy than he had ever known before. At last he said, "You couldn't make it walking, but you could on my wheel. You can take it and I'll walk in. I'm late anyway, and ten minutes more or less won't make any difference now."

Lute rode away and Robert sat by the roadside for several moments pondering what he should do. Finally he decided to go on to Ashton. There was just a possibility that Mr. Pettingill himself had been delayed in some way, or perhaps he might give him a chance anyway if he understood the reason for his delay. He quickened his steps to a run, almost wishing that he had kept his wheel and let Lute do the sprinting. He arrived at the bank steps, warm and perspiring, just in time to see Lute swing through the big door and come down the steps.

"Hello, hobo," he called as he caught sight of Robert. "I nailed it all right. I am now a member of the staff of the State Bank of Ashton and earning more in one week than you do in nearly three." "You got that job!" cried Robert. "That's mine by every right and I gave it up to help you."

"Easy, now, easy! Just you trot on in and ask Mr. Pettingill what his opinion is of a young man who can't keep an appointment. Much obliged for your wheel. Anne Lee is going to drive over this afternoon and I'll ride home with her."

Robert, so angry he could scarcely see, mounted his wheel and rode away. And the last item of news did not tend to lessen his anger, for Robert would have given more for a smile from sweet little Anne Lee than from all the other girls in Ashton and Colegrove combined. It was not until many months later that Robert learned that Lute had heard by accident that Anne was to drive over and had simply resolved to ride home with her.

The real secret of the popularity of merry Anne Lee, with her mop of curly hair, her rosy cheeks and her freckled snub nose, was that she was a good friend to every boy of her acquaintance and she was wholly unconscious of the fact that she was popular. The girls who smirked and coquetted, consciously proud of their monstrous bunches of hair piled up high on their little heads, their powdered and sometimes painted faces, their thin waists, their silk stockings, were sure they were very modish indeed, and wondered why the boys so willingly turned from all their charms to that little Anne Lee, who still wore her curls tied back with a bow of ribbon, who had never owned a silk stocking nor a high-heeled slipper and who wasn't the least bit of a young lady even though she was nearly seventeen.

As Robert neared Colegrove he strove to put Anne and Lute both from his mind and tried to get full control of himself



before he must meet Mr. Curtis and his mother. To the former he said as soon as he entered the store, "How's Betty?" "Oh, she's coming on all right now. But we certainly did have a scare. And I suppose you're a young banker now?" "No, sir," answered Robert, measuring out two-pound packages of sugar with assumed indifference. "An accident kept me from getting there in time, and you know Mr. Pettingill."

"You bet I do! But pshaw! if you hadn't had to wait for Nathaniel to get back you'd have been off at twelve o'clock and that would have allowed for any accident, seems to me. Pshaw! to think of my standing in your way like that when I wanted so to see you get ahead."

But it was his mother whom Robert dreaded most to meet. He lingered as long as there was any excuse for so doing at the store, but at last he was compelled to start homeward. No whistle announced his approach tonight and he was already within the gate before Mrs. Childs saw him. He kissed her soberly and then came to the point at once.

"Mother, will you be dreadfully disappointed when I tell you that I didn't get the bank position? I want to tell you just how it happened. I didn't explain everything to Mr. Curtis, but I want to tell you."

"I'm prouder of you because you felt you couldn't have done anything else than if you had been made president of the State Bank," said his mother when he had finished his narrative. "And now I wish to tell you that I have found a way of helping out a little with the income. Myra Nelson stopped in this afternoon on her way from the postoffice and brought me a letter from Uncle Aaron. He says that he does so well in the horse-radish business that he doesn't see why I can't make a little right here at home putting up the radish for market, and he sends advice as to how to do it, saying that you can probably give me a hand at it, too. We've got a lot of it growing down at the end of our yard and it's growing all over the neighborhood."

"That's a good idea, all right, mother," said Robert, forgetting his own trouble in the new idea. "There wouldn't be much of a market for it here in Colegrove, but there would be some, for there are always a few people who would rather buy anything ready prepared than to get it ready themselves, and then we'll try to make ours such a good relish that it will be the best in town. There will be a good market for it in Ashton I am sure and Mr. Curtis will let me take the store wagon a couple of evenings a week so I can drive over there and deliver orders."

Thus it came that Robert soon supplemented his wage at the grocery store with a neat sum from the horse-radish business. The combined income was more than he would have had at the bank though he put in longer hours. Twice a week he borrowed the store wagon and drove over to Ashton where he delivered supplies to the hotels and stores. It was dusk one evening as he was returning from one of these delivery trips. Just beyond the edge of the town he saw a stylish turnout approaching Ashton. He recognized in the rig Lute Rundell and Anne Lee. Had he not been so near that he was sure they had already seen him, he would have turned back, for his old working clothes and the rattling delivery wagon were a combination which made him dread a meeting with his young companions in their best clothes and stylish equipage. For the moment he failed to remember that Anne Lee never noticed clothes, good or bad, and that he didn't really give a continental what Lute thought of him. They were still several rods apart when Anne's clear voice rang out in greeting.

"Hello Robert! Are you going right back to Colegrove?"

He heard, but heeded not, Lute's "Ah, there, peddler! Sell all your wares?" Instead he answered Anne.

"Yes, Anne, I'm going right home. Can I do anything for you?"

"Yes, you can take me along. I must go home, and Lute has an engagement in Ashton."

"Anne Lee—" began Lute angrily, but Anne paid no attention to him and, with Robert's aid, jumped nimbly from the buggy to the wagon.

"I'll get even with you for this you can just believe, Rob Childs," called out Lute angrily as he lashed his horse and drove rapidly away toward Ashton.

"Whatever made you do that, Anne?" asked Robert.

"He did," answered Anne, indignantly.

"I couldn't have stayed in his buggy another minute and I'll never ride with him again, and you won't blame me either when you know. What do you think, Rob? That whole business of the accident was planned that day when you had the appointment with Mr. Pettingill. Lute found out in some way that you were the one who had first chance at that position. Mr. Pettingill wrote him that it was only in case you failed to appear that there was any chance for him. Judge Kenyon's chauffeur is a chum of Lute's and Lute fixed it up with him that if he'd queer the game with you he'd pay him ten dollars. The plan was to knock you down as he rode by. If he failed he was to brush up against Lute so that you following behind couldn't help but think that Lute had been struck. Lute wasn't even stunned. He was just pretending all the time. Of course they chose a time when there wasn't anybody else in sight on the road and you fell in with their plan and did exactly what they hoped you would do."

For a long while Robert said nothing. Then Anne became alarmed at the silence and at what she could see of Robert's white, tense face. At last she touched his hand to arouse him and said softly, "You aren't angry with me are you, Robert?"

"No," he said. "But such things make a fellow feel as though he never wanted to go out of his way to help anyone again."

"Well, you're not responsible for Lute's lying and deceiving, and you won't have to take his punishment for those. You did the right thing just as it showed itself to you at the time and you couldn't have done anything else and been true to your best self. Just don't regret for a second that you did what you did. Anyway, you wait until you get home to your mother and you'll learn of something better than two bank positions. I've told part of a secret, I know, but I couldn't stand the look on your face, and not another word will you get out of me, sir!"

Robert burst in on his mother like a young tornado. "What's the news, mother?" he cried. "Anne Lee told me that it was something wonderful!"

"I'll let you decide what to call it," said his mother, smiling fondly upon him. "Mrs. Lee and Anne called on me this afternoon and they stopped to bring my mail just as so many of the kind neighbors do. The letter was from Uncle Aaron. He says that telling us to go into the horse-radish business was really his plan to get us ready for something else. Uncle Aaron is quite an old man now and for a couple of years he has been thinking of turning over his little horse-radish factory to someone else. He longs to spend the rest of his days pottering about among his roses and his fruit trees. He thinks that now you understand the business well enough to run it for him. Upon his death the business will be yours. While he lives you are to turn over 50 per cent of the profits to him, but he says it clears never less than two thousand a year and there's a chance for a young man to extend the business. That's your end of it. Mine is this. Uncle Aaron's daughter Minna is to be married, so Uncle wants us to make our home with him in that charming little bungalow, and I'm to superintend the house with a little Japanese to do all the hard work. But he says that most of the time I'm to spend just getting well among the roses. And what seems to so beautifully complete our plan for going is that Mrs. Lee and Anne will go to California at the same time we do. If the climate agrees with Mrs. Lee they will live with her sister in a town less than fifty miles from Uncle Aaron's. Mrs. Lee has been wishing to go for the last year but dreaded to start on the trip. But with us for company she seems delighted at the prospect. Now, is it wonderful?"

"Oh, mother!" was all that Robert could say. But the mother understood—understood perhaps far more than the boy himself could, and she was satisfied.

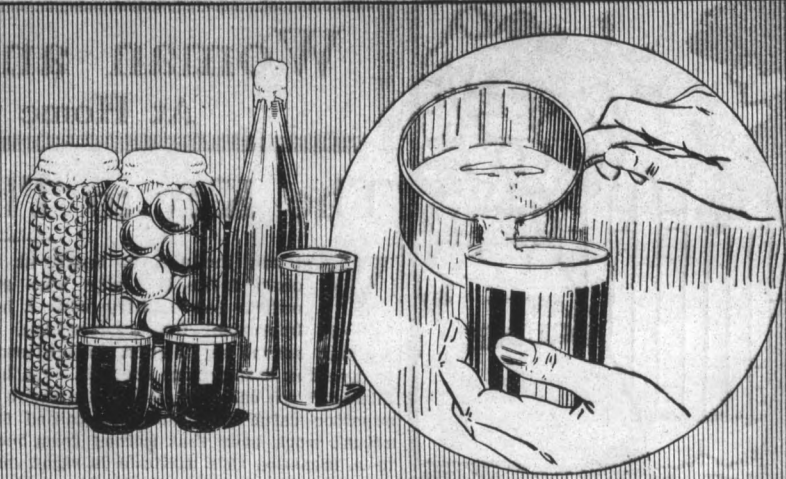
"Here I am," said the returned wanderer, "back with the fortune I said I would make, and ready to pay the mortgage off the farm!"

"Ef that ain't hard luck!" exclaimed the father. "As times are goin' now that mortgage ain't botherin' nobody. I'd a heap ruther have seen you broke an' ready to do regular work for wages."

"Every time I meet that fellow he tells me a hard-luck tale."

"The same old story?"

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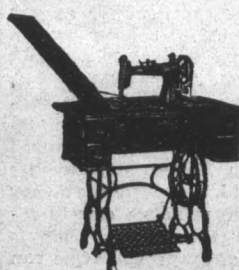
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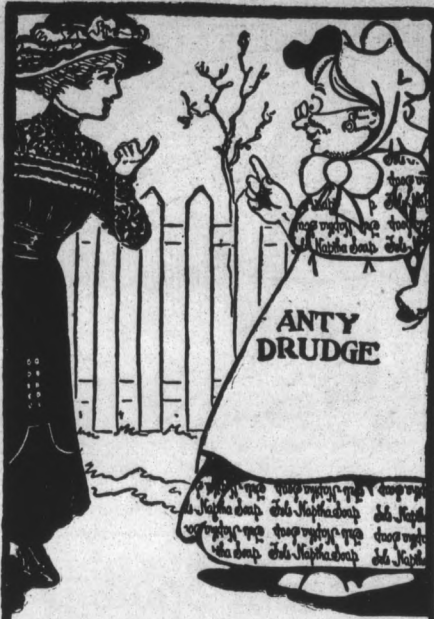
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## Woman and Her Needs.

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**W**E are inclined to laugh at the chap from the city who goes out to the country with a head full of theoretical farm knowledge, but without actual experience, and attempts to wrest a living from the soil. "A book farmer," we call him, and talk about the superior value of knowledge gained from actual work over that gained from books. In a measure this attitude is right, mere theories never get you anywhere if you haven't the muscle and horse sense to apply them. But farming with the head as well as with muscle brings in more money than muscle alone. It is the judicious combination of brawn and brain which gets the greatest success.

I talked the other day with a prosperous man of 55 years. He has just sold a \$10,000 apartment house in the city and has a \$15,000 farm in Oakland county, besides various and sundry other gilt-edged investments which he has earned unaided. His experience is worth passing on.

"I was one of a large family," he said, "and my father always had a hard struggle to get on. He owned two acres of land when I was born, oldest of the family of 10, and he never owned any more. We were poor, of course, not so poor that we ever went hungry or naked, father always managed to get enough to feed us and clothe us well enough to go to school, but he didn't get ahead. Every cent he made was by hard, grinding, manual labor."

"As my brother and I grew into lads we began to watch other people. We saw that the farmers around us who got ahead were the ones who used their brains. They studied conditions and planned how to meet them. They were always studying farm bulletins and market reports when they had an odd moment, trying to find out what was wanted and the best and cheapest way to supply the want. They kept up with the times and some even went ahead. Father was content to do just as his father had done,

to rise at four o'clock, sometimes even at two o'clock in the morning, and work till late at night, never looking around to see if there was not an easier way.

"Brother and I decided to emulate the neighbors. We were willing to work, but we were determined to work with our wits as well as our hands. My first business venture was such a success it encouraged me to keep on. Uncle gave me \$1.50 and I bought a sheep. I let it out to double and in three years had \$25 all my own from my original capital. The interest was so good I reinvested the whole in sheep, and by the time I was old enough to set out for myself I had a snug little bank account to back me.

"That policy of wise investing I have followed through life and it has been a good one. It isn't the farmer with the most muscle who makes the most money. It is the one with a well-trained mind who is willing to profit by the experience of others that gets ahead."

A little Polish girl in the city schools had the same idea. Her young friends were dropping out of school in the fifth and sixth grades to be cash girls, dish-washers, or factory girls. They were large enough to make a few dollars a week and the money looked big to them and their parents.

"I'm going to stay in school and learn, oh, so much," she confided to her teacher. "You know much and you get big money now and have an easy time and pretty clothes. You not scrub floors and wash every day. The ones that know, they the ones that get money and not work. That's what I'm going to do."

And while the teacher would not agree that she had an easy time and no work, yet she had to admit that the child had the right idea. The ones who know are masters of the situation. Not mere book-learning, but knowledge, is the magic key that unlocks the door of success.

DEBORAH.

#### FOODS THAT ARE MEDICINES.

BY ELISABETH R. LITTS.

**F**EW people pay enough attention to the kind of food they eat, especially in cases where mothers are run down and half sick and where children are delicate, yet not actually needing medicine. If a little more consideration was given to the daily meals it would have a great effect in building up the system and setting nature right, doing away with the taking of so many harmful drugs, which more frequently stimulate than cure.

Children and grown people as well, often rebel at taking drugs but are not aware of the medicinal value they are getting from what they eat. Many mothers do not know the different properties contained in what they serve upon the table, and do not stop to consider if they do.

The onion, that insignificant little vegetable, disdained by many, is one of the most valuable of medicinal foods. A great physician once said, "If everyone would make a practice of eating onions at least three times a week there would not be half the sickness there is." People who are troubled with weak digestion should not eat raw onions as the juice is too strong for the stomach. When they are boiled until well done, and served with a milk dressing, they are most palatable, although there are dozens of ways of cooking this vegetable. Onions are soothing to the nerves, cleansing to the blood and are a general tonic to the system. They will help to produce sleep and are valuable in breaking up colds. A syrup made from covering sliced onions with sugar and simmering them the back of the stove is excellent for coughs and colds of all kinds.

Celery is said to be a nerve builder and the roots are especially beneficial.

Pineapples are known as the most easily digested of fruits, but the real medicinal values are just becoming realized in this country. In Hawaii experiments have been made which proved that they contained a digestive principle closely resembling pepsin in its action. This is often used in cases of dyspepsia. One can

easily prove its digestive powers by taking a thin piece of raw beef and placing it between two slices of pineapple and observing the change which takes place within a few hours.

In diphtheritic sore throat and croup, pineapple is very valuable, and is often given as a medicine. The false membrane which causes the closing of the throat, seems to be dissolved by the acid of the fruit and relief is almost immediate. It will also act as a preventive in diphtheria and where a child is taken with it suddenly, and a doctor cannot be procured quickly, it will frequently save the life of the child, if given at once. I know of a case where a six-year-old boy had died with this disease and the undertaker told the mother if she ever had a case of diphtheria in her family again to get pineapple and feed it to the child, not matter what the cost of the fruit. It is a good policy to can several quarts of them, when they are in season, and keep them in the cellar for just such emergencies. Pineapple also acts as an appetizer and will coax an unwilling appetite to more readily relish food.

Hot milk is a nourishing food and a glass of it sipped when one is greatly chilled and fatigued will warm the body quickly and revive the strength. Milk should always be sipped slowly, not swallowed hastily, as it is liable to form in curds in the stomach and become almost indigestible. For those suffering with insomnia, a glass of hot milk taken before retiring is soothing to the nerves and will produce sleep. It is claimed that milk will make flesh if taken regularly and systematically every day.

Some people never serve carrots at all upon their table, never realizing that they are spurring a good blood purifier and beauty giver. Carrots drive out impurities and cleanse the whole system. They make a smooth, clear skin and give the complexion a healthful glow. Many object to the taste and therefore they are not cooked, but there are many different ways in which they can be prepared so that the strong flavor is lost. A woman famous for her beautiful complexion said she used carrots in some way every day. A jelly form she found most delectable.

Spinach and all kinds of greens act as cleansers to the body and are very beneficial, especially in the spring.

Apples are considered good for the nerves, a splendid cathartic, and useful in carrying off waste matter. It is said if you eat an apple every day you will have no need for a doctor. They are especially good when taken at bedtime, and are supposed to help produce sleep.

While bananas have a certain amount of food value and some flesh producing qualities, they are hard to digest and should seldom be given to children, as we in the United States seldom get them in a proper condition.

The much despised and ridiculed prune is also a blood purifier and producer and is considered most healthful by all physicians. Grape-fruit will take malaria out of the system and is good in all fevers and bilious cases. Black currants contain a peculiar acid which is good in doctoring a cold. The English housewife keeps several cans of the cooked currants on hand and uses the juice as a drink when any of the household is afflicted with a cold.

Few people know the many medicinal values that are contained in that commonest table supply, salt. Almost every day we hear of some new use for it. Where one is troubled with a weak throat, having sore throat frequently, the practice of gargling salt water would strengthen the throat a great deal and the soreness would be much less frequent. Weak and inflamed eyes are soothed quickly by washing them with a mild solution of salt water. In the case of dry and inflamed lids this will prove a great comfort, as it supplies the necessary brine which the inflamed tear duct refuses to give.

For nasal catarrh there is nothing better than salt water to keep down the irritation and keep the head passages clear. Use it either in a nasal douche or a syringe daily to obtain best results.

A pinch of salt placed on the tongue will often settle an upset stomach and relieve nausea. Salted popcorn sometimes keeps a person from getting seasick or car sick.

Common rock salt, pulverized and mixed with an equal part of spirits of turpentine will cure a felon, it is said, if a cloth is soaked with this solution and kept wrapped about the afflicted parts.

Another cure for a felon, which is very simple, yet certainly effective, is to take a fresh, raw egg, break away enough of the shell to allow the finger with the felon on to stick down in the egg. It will be felt to draw almost immediately and within a few hours the egg will congeal and harden around the finger. When this takes place withdraw the finger from the egg and after thoroughly cleansing it place it in another fresh egg. The second one is generally sufficient to draw all the poison and soreness from the felon. I have seen very bad felons completely cured in this manner in from 15 to 24 hours.

#### HOME QUERIES.

**Household Editor:**—When should the heartiest meal of the day be eaten, at noon or at night?—M. C.

Most people who have to work hard find that they feel better if they take the heavy meal at night. There is then more time and the food is not so apt to be "bolted," a great cause of indigestion. Besides, one can rest for awhile after the meal, giving the stomach a better opportunity to act. People who do mental work find it very hard to work in the afternoon if they take a hearty meal. The mind is sluggish and the victim feels drowsy and inert.

**Household Editor:**—How do you make kitchen bouquet?—Cook.

By tying a few herbs in a bit of cheesecloth and cooking in the dish to be flavored. Of course, remove before serving. A bay leaf, bit of marjoram, a few cloves and parsley may be used.

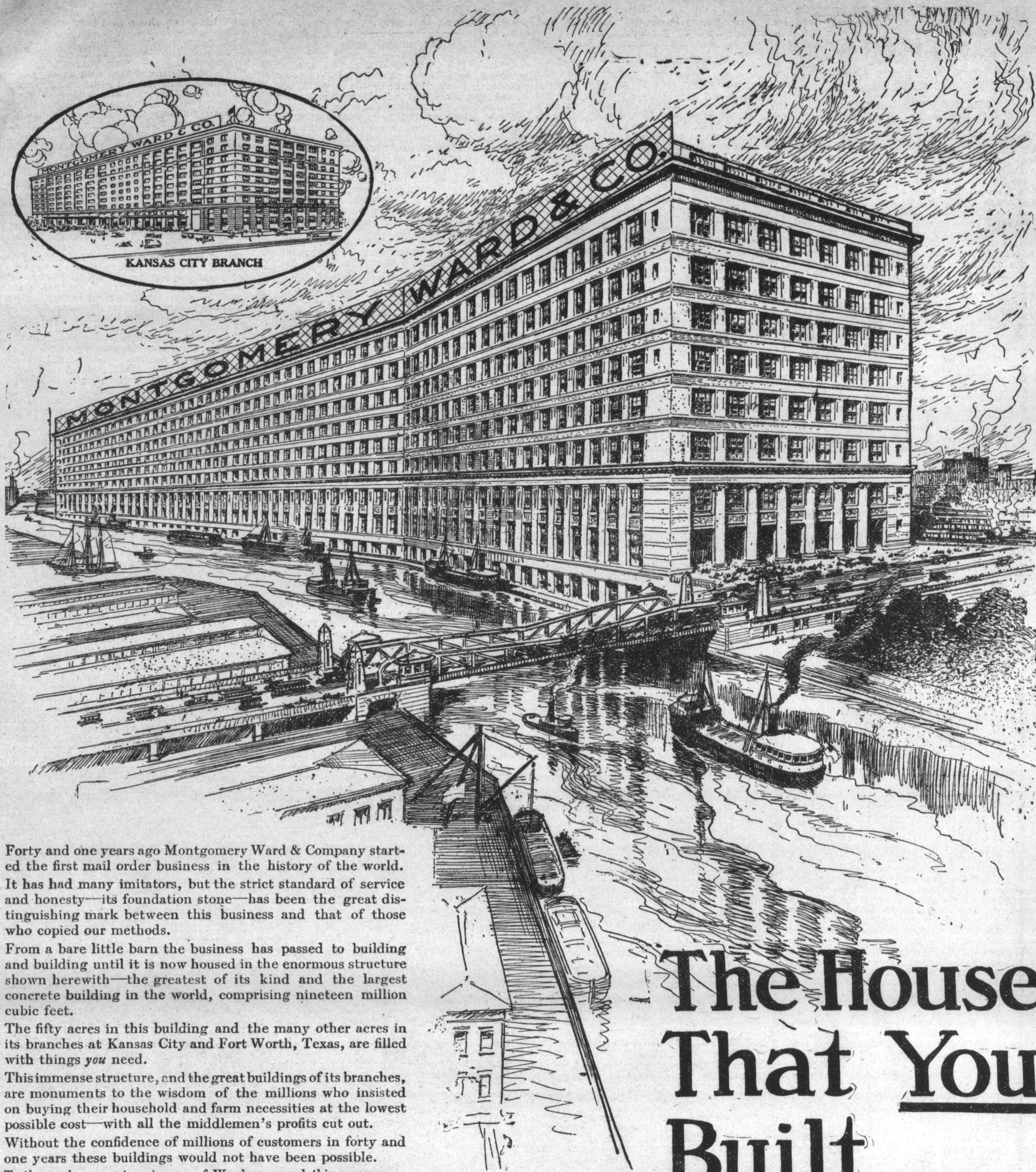
**Household Editor:**—Can you tell me how to make dandelion wine with cold water instead of hot?—Mrs. L. E. F.

**Household Editor:**—Will someone please tell me how to color cotton goods with sumac berries and also tell just what color it will be?—Mrs. M. E. H.

**Household Editor:**—I am a reader of your paper and enjoy it so much; I get so many helpful hints. I would appreciate very much if some reader would suggest how to fix an inexpensive outdoor sleeping tent. Would it be more economical than to buy one?—E. C.

**Household Editor:**—I would like to ask how to put quicksilver on the back of a mirror. I have a large one and part of the quicksilver has come off in some way.—Mrs. F. W.





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# Markets.

## GRAINS AND SEEDS.

June 18, 1913.

**Wheat.**—The decline in wheat values was checked a week ago, since which time prices gradually advanced until Monday. Weather conditions are the important factor in molding present prices. Both the winter and spring wheat sections were beginning to feel the effect of a lack of moisture and in many of the important wheat producing states as well as in Canada the crop was on the decline; general rains, however, on Monday night and Tuesday, over certain portions of the spring wheat belt, created an easier feeling and caused the first reaction in prices since starting on the upward trend. Other bearish features of the trade were favorable crop conditions in Europe, heavy receipts at some of the larger markets in this country, especially Chicago, and a number of cargoes awaiting orders from abroad as well as a decline in the inquiries for forward shipments. On the other hand, the decrease in the visible supply was large, and unless rains are abundant their effect on prices will probably be only temporary. One year ago the local price for No. 2 red wheat was \$1.11½ per bu. Local quotations for the past week are:

	No. 2	No. 1	Red.	White.	July.	Sept.
Thursday	1.04	1.03	92½	92½		
Friday	1.04½	1.03½	93½	93½		
Saturday	1.04½	1.03½	93½	93½		
Monday	1.05	1.05	94½	94½		
Tuesday	1.05	1.04	92½	93½		
Wednesday	1.05½	1.04½	93	93½		

Chicago, (June 17).—No. 2 red wheat, \$1.02@1.06; July, 91½@91½c; Sept., 91½c per bu.

New York, (June 17).—July, \$1.01½; Sept., \$1 per bu.

**Corn.**—Corn has repeated the history of the previous week by advancing in spite of the decline in wheat on Tuesday. A total of nearly 3c has been added to the quotations during the week. The position of the market is made strong by the fact that the rains affecting the spring wheat sections did not reach the corn belt where continued hot weather and lack of moisture are making the outlook for this crop less hopeful than it has been. Besides, the cash situation is favorable to advances, supplies being restricted and the demand urgent. One year ago the price for No. 3 corn was 76½c per bu. Quotations for the past week are:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	59½	61½
Friday	61	63
Saturday	61	63
Monday	61½	63½
Tuesday	62	64
Wednesday	62	64

Chicago, (June 17).—No. 2 corn, 62½c; No. 3 yellow, 62½c; July, 63½c; Sept., 64½c per bu.

**Oats.**—Although there was a slight reaction in this market on Tuesday due to the lower values prevailing in the wheat department and also to the increase in the receipts at different grain centers, the cereal has enjoyed a bullish week, prices having advanced over three cents during the period. The crop is suffering for lack of moisture over a wide area and already growers are of the opinion that permanent damage has been done in many sections. This condition has urged many houses to take hold of the deal, while the current demand is good and absorbs the receipts readily at nearly all times. One year ago the selling price for standard oats on this market was 55½c per bu. Quotations for the past week are as follows:

	Standard.	No. 3
	White.	White.
Thursday	41½	40½
Friday	43	42
Saturday	43	42
Monday	44½	43½
Tuesday	44½	43½
Wednesday	44½	43½

Chicago, (June 17).—No. 2 oats, 40½c; standard, 42½@43½c; July, 41½c; Sept., 42c per bu.

**Beans.**—The nominal prices for beans at Detroit are the same as those published a week ago. For prompt and June shipment the figures are \$2.05 per bu. and for August, \$2.10. There appears to be an abundant supply of beans, while the demand is light.

Chicago, (June 17).—No changes have been made in bean quotations at this point and conditions appear to be the same as those prevailing for several weeks past. Pea beans, hand-picked, are quoted at \$2.35; choice, \$2.50; prime, \$2.20; red kidneys, \$2; white kidneys, \$2.50 per bu.

**Rye.**—There is a fair demand for this cereal on the Detroit market while offerings are light. The price remains the same as a week ago, No. 2 rye being quoted at 64c per bu. The Chicago price has improved slightly during the week, now being 61c for cash No. 2.

**Barley.**—Practically no change is made in quotations for this grain. At Chicago the range is from 50@65c per bu. and at Milwaukee 58@68c per bu.

**Clover Seed.**—Both common and alsike seed have improved in price at Toledo during the week. October is now quoted at \$8.30, which is a 50c advance, and December at \$8.25. October and December alsike are 5c higher and are quoted at \$9.30 per bu.

**Timothy Seed.**—At Toledo prime cash timothy seed advanced about 18c during

the week and is now quoted at \$2.15 per bu. August seed is quoted at \$2.42½ and December at \$2.30 per bu.

## FLOUR AND FEEDS.

**Flour.**—Jobbing lots in ½ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.70; 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, \$21; cracked corn, \$25; coarse corn meal, \$22.50; corn and oat chop, \$21 per ton.

**Hay.**—Market rules easy at unchanged prices. Carlots on the 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.—The trade is easy at last week's reduced values. Choice timothy, \$16@16.50 per ton; No. 1, \$14@15; No. 2, \$12@13; No. 3 and clover mixed, \$7@11; clover, \$8@12; 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.

Chicago.—Higher and firm. Rye straw \$9.50@10; oat, \$7@7.50; wheat, \$6.50@7 per ton.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—There has been little change in butter since this time last week. Elgin advanced on Monday but the local market is steady with former quotations ruling. Detroit jobbing prices as follows: Fancy creamery, 27½c; firsts, 26c; dairy, 22c; packing stock, 20c per lb.

Elgin.—Market steady at 28c.

Chicago.—No change in this market except in packing stock which is lower. Quotations are: Extra creamery, 27½c; extra firsts, 26½c; firsts, 25½c; seconds, 25c; dairy extras, 26c; firsts, 24c; seconds, 22c; packing stock, 12@21c as to quality.

New York.—Firm and unchanged. Quotations: Creamery extras, 28@28½c; firsts 27½@27¾c; seconds, 26@27c; state dairy, finest, 27@27½c; good to prime, 26@27c; common to fair, 24@25½c; packing, 20@21½c as to quality.

**Eggs.**—The egg market in general is steady under heavy receipts. Local quotations show no change, current offerings, candled, being quoted at 18½c per dozen.

Chicago.—Good grades steady at practically unchanged figures. Miscellaneous receipts, cases included, are quoted at 16½@17½c; do., cases returned, 16@17c; ordinary firsts, 17½c; firsts, 18c; storage packed, firsts, 22c per dozen.

New York.—Steady and unchanged. Fresh gathered extras, 22@23c; western gathered, whites, 20@23c per dozen.

**Poultry.**—Offerings in the local market fairly liberal this week with sales largely at last week's figures, ducks alone being quoted lower. Quotations are: Live—Broilers, 27@28c; hens, 17@17½c; No. 2 hens, 17@18c; old roosters, 11@12c; turkeys, 12@18c; geese, 12@13c; ducks, 15@16c per lb.

Chicago.—Spring chickens, ducks and geese lower, while turkeys are quoted higher. Quotations on live are: Turkeys good weight, 15@17c; others, 10c; fowls, good, 16c; spring chickens, 23@24c; ducks, 12@12½c; geese, 9@9½c; guinea hens, \$4 per dozen.

**Cheese.**—Steady. Wholesale lots, Michigan flats, new, 13½@14c; old, 16½@17c; New York flats, new, 14½@15c; old, 17@17½c; brick cream, 14@14½c; limburger, 18@19c.

**Veal.**—Fancy quoted ¼c higher. Fancy 13½@14c; common, 10@11c.

Chicago.—Fair to choice, 80@110-lbs., 13@14c; extra fancy stock, 14½c; fair to good chunky, 12½@13c.

## FRUITS AND VEGETABLES.

**Apples.**—Supplies are scarce and values are firm. Detroit quotations are: Fancy, \$4@5; ordinary, \$3@4 per bbl.

**Raspberries.**—Red, \$4.75@5 per 24-pint case.

**Strawberries.**—Recent frosts have damaged the crop and prices are higher and firm with average stock going at \$4@4.50 per bushel. The prospects are that this fruit will not be very low during the season.

**Potatoes.**—The decline in potato values has been quite as sensational as the recent advance. Prices are now lower than they have been at any time this spring. Michigan stock now selling at 25@30c per bu. in car lots.

Chicago.—Potatoes were sold in this city at less than 20c per bushel the past week. The low values have moved many of the spuds, thus helping the situation to clear up a little which it has done. The regular sales now rule from 20@25c per bu., but the trade seems demoralized.

## WOOL.

Boston.—The sales of wool to manufacturers have considerably increased during the past week, although the volume of the business is yet too small to allow any general conclusions with regard to the trend of the market at the present time. There appears, however, to be an impression among dealers that the situation has slightly improved from the sellers' standpoint largely because these manufacturers are taking hold of the trade more freely. Prices have not changed sufficiently to note. Dealers in the fleece states, which includes Michigan, are paying producers from 18@20c for medium wools. Sales in Boston since January 1 have aggregated 20,419,300 lbs. of domestic wool and 7,997,000 lbs. of foreign wool, or a total of 28,416,300 lbs.,

as against 73,964,000 lbs. for the corresponding period last year.

## GRAND RAPIDS.

Of the 300 loads of farm and garden produce and fruit offered on the city market Tuesday morning there were not to exceed 70 loads of strawberries and the fruit went readily at \$1.75@2.50 per crate. The berry crop in this section is very light on account of frosts and dry weather. Cherries are just beginning to come in, with about 25 crates in sight Tuesday, which sold for \$2.25. First home-grown peas of the season sold for \$3 per bushel. The few old potatoes brought on the market brought 35@40c. Asparagus sold at 80c@1; spinach at 50c. Two local hucksters were suspended and denied market privileges for buying and reselling on the market, a violation of the rules. Old hay is higher, selling from \$12@15. The new crop of hay will be very light here. Eggs are worth 17c; dairy butter 22c.

## DETROIT RETAIL QUOTATIONS.

Eastern Market.—There was a good market on Tuesday, considering the season. While supplies did not cover a wide range of varieties they were offered liberally but to a comparatively large buying audience. Lettuce was retailing at 60c per basket; carrots at 20@25c per dozen bunches; beets, 30@35c per dozen bunches; asparagus, \$1 per dozen. Strawberries of fair quality were offered freely at \$3.75 per 24-qt. case. Potatoes, 55c per bu. for best grades. Loose hay \$13@16 per ton.

## THE LIVE STOCK MARKETS.

### Buffalo.

June 16, 1913.

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

Receipts of stock here today as follows: Cattle, 155 cars; hogs, 100 double decks; sheep and lambs, 30 double decks; calves 1600 head.

With 155 cars of cattle on our market here today, and 18000 reported in Chicago, all cattle weighing from 1200 up sold from 25@40c per cwt. higher than last Monday, and in some instances where the cattle showed prime quality 50c per cwt. higher. All dry-fed butcher stuff sold strong 15@25c per cwt. higher, and in some instances 35c higher. Quite a number of grassy cattle showing up; while they showed some advance over last week, there is a wide range between them and the dry-fed kinds, and we are looking for them to sell lower from now on unless extra good and fat. Stockers and feeders and cow stuff sold just about steady with last week's prices. At the close of the market, everything was sold and the market closed strong.

We quote: Best 1300 to 1500-lb. steers, \$8.75@9; good to prime 1200 to 1300-lb. steers, \$8.50@8.75; good to prime 1100 to 1200-lb. steers, \$8.25@8.50; coarse and plain weighty steers, \$7.50@8.15; good to choice handy steers, \$8.25@8.40; medium butcher steers, \$8@8.25; light common butcher steers and heifers, \$7.50@8; best fat cows, \$6.50@6.75; good butcher cows, \$5.75@6.25; light do., \$5.25@5.75; trimmers, \$4@4.25; best fat heifers, \$7.50@8; medium butcher heifers, \$7.50@7.75; light and common heifers, \$6.50@6.75; stock heifers, \$5.75@6.25; best feeding steers, dehorned, \$7.50@7.65; light and common stockers, \$6.50@7; prime heavy bulls, \$7.25@7.50; best butcher bulls, \$6.50@7; bologna bulls, \$6@6.50; stock bulls, \$5.50@6; best milkers and springers, \$7.50@9; common kind do., \$5@6.00.

Receipts today about like last Monday—100 double decks. Market was but little changed from the close of Saturday; bulk of the mixed and medium grades selling for \$9.15, with a few lights and closely sorted lots at \$9.20@9.25; roughs, \$7.50@8; stags, \$6.50@7.25. Trade closed a little slow and late sales were a little bit lower than the opening.

The sheep and lamb market was active today, but prices about a quarter lower than the close of last week; most of the choice handy yearling lambs selling at \$7.40@7.60; spring lambs, \$8.50@9; best wethers, \$5.75@6; ewes, \$4.25@5, owing to weight and quality. Look for about steady prices the balance of the week.

We quote: Choice spring lambs, \$8.50@9; cull to fair do., \$6@8; yearling lambs \$7.25@7.60; bucks, \$3@4; wethers, \$5.75@6; handy ewes, \$4.75@5; heavy ewes, \$4@4.25; cull sheep, \$3@4; veals, choice to extra, \$10@10.50; fair to good, \$7@10; heavy calves, \$4.50@6. We advise caution buying heavy calves, buyers discriminating against that kind.

### Chicago.

June 16, 1913.

Cattle. Hogs. Sheep.  
Received today ..... 18,000 45,000 23,000  
Same day last year.. 22,543 45,375 16,454  
Received last week.. 41,950 148,170 90,127  
Same week last year.. 34,193 152,956 86,134

This is a notable Monday in the hog market as, according to all accounts, more dead hogs were taken from the stock trains arriving here than ever before, great numbers succumbing to the extremely hot weather. Some of the cars contained from 45 to 60 dead hogs, and losses were enormous. Hogs were in much poorer demand than usual, largely because of the extreme heat, many hogs dying after being unloaded, and prices were 5@10c lower, with the poorest to the best going at \$8.25@8.90, with the exception of a car of hogs taken at the opening at \$8.95. The hogs received last week averaged 248 lbs., against 244 lbs. a week earlier, 236 lbs. one year ago, 238 lbs. two years ago and 242 lbs. three years ago. Cattle are active, with a moderate Monday run, and prices are firm to a dime higher, butcher stock being the most active. Packers had 1000 Kentucky

distillery cattle consigned to them direct. With large sheep and lamb receipts at other western and eastern markets, demand here was very poor, and prices were mostly 50c lower, although some sales were called not more than 25c lower. The best spring lambs sold at \$8, and up to a late hour no fed lambs had gone higher than \$7.50. Omaha received the first shipment of Idaho range lambs, and a railroad feeding station near Chicago received about 5,000 Washington yearlings.

Cattle have undergone wonderful and unexpected changes of late, the former dullness and weakness in prices giving place to active general buying and frequent advances, until desirable kinds are on a materially higher basis. Last week witnessed the best market seen in a considerable period, with \$9 paid for prime heavy beefs, as well as for choice yearlings, for the first time since the middle of May. By the middle of the week beef steers were selling chiefly at \$7.90@8.75, the best class of heavy steers selling at \$8.75@9, while the common offerings of light steers brought \$7.50@8, a few scattered sales at \$7.10 and over cutting no particular figure.

Fair to middling steers brought \$8.10 and over, with sales of good steers at \$8.40@8.65, common to prime yearlings going at \$7.50@9. Butcher cows and heifers were in lively request and participated in the upward movement, selling at \$5.10@8.65, while the cutters brought \$4.50@5, canners \$3.50@4.45 and bulls \$5.60@7.75. There was no break in the demand for stockers and feeders, but advancing prices resulting from limited offerings of desirable kinds and competition for the better class of heavy feeders from packers resulted in curtailing transactions a good deal. Stock steers brought \$6.35@8, while feeders carrying much weight sold for \$7.35@8.15, and there were a few sales of prime yearling feeders that averaged from 615 to 772 lbs. at \$8.25. Sales of stock cows were made at \$5.25@6.25, and as many feeding heifers as could be purchased were taken at \$6@7.15. Light stock steers that sold at \$7.50 were only fair in quality. Calves brought \$5.50@7 for the cheaper class of heavy ones, while the better class of light vealers sold at \$9.50@10.75. Milch cows sold fairly at \$5@100 per head, and prime Holsteins were scarce and worth up to \$125. The week's advance in cattle of various kinds was 15@35c, with sales of plain to good lots largely 40@50c higher than a fortnight earlier.

Hogs, like cattle, have changed remarkably in the way they sell, former depression having given way to brisk general buying and frequent good advances in prices. The demand has shown improvement so far as the best hogs weighing around 200 lbs. are concerned, and these have been selling at top prices, averaging higher than prime lighter weights, although the call for the latter was good also. The spread in prices was very wide and promises to be even greater with increasing offerings of big, fattened, heavy, lard sows as the summer advances. Hogs are selling far higher than in past years at this season, 1910 excepted, and stockmen who own healthy young hogs should make them prime before marketing, as every one will be needed. The greatly depleted stocks of provisions in western packing centers is a powerful bull argument for both hogs and products, and there is all the time a very large call for hogs of the lighter weights, as well as for pigs, for the fresh pork trade. Prime hogs have sold at \$9 for the first time since April, with closing sales of rough heavy packing hogs at \$8.35@8.45 and the better class of medium weights at \$8.90@8.95, light hogs bringing \$8.65@8.85. Prices closed on Saturday 25@30c higher than a week earlier, pigs bringing \$6.75@8.45 and throwout packing sows \$7.95@8.35. Boars brought \$4@5.

The main feature of the sheep and lamb market last week was the greatly increased supplies of spring lambs consigned direct from Louisville to the big Chicago packing plants, removing that much demand for offerings on the open Chicago market. However, much smaller receipts than a week earlier made a much better show for sellers, and good advances brought out larger supplies later, but too many of these comprised poorly fattened stock that was discriminated against by killers. More spring lambs are expected in the near future, and Idaho will soon begin shipping its lamb crop. Spring lambs closed Saturday at \$5.50@8.50 per 100 lbs., while fed clipped flocks sold as follows: Lambs, \$5.25@8; yearlings, \$6@6.50; wethers, \$4.85@6.25; ewes, \$3.25@5.60; bucks, \$4@4.25.

Horses were in fairly large supply and in quite moderate general demand last week, with scarcely any outlet for undesirable ones, even at shaded prices. In the auctions the most active sellers are good 1400 to 1500-lb. horses. The cheaper class of thin animals are quoted at \$85@120 per head, while few of the best class of heavy drafters that sell for \$300@350 are offered. Farm horses are largely nominal at \$125@225, while medium grade drafters are fairly active at \$185@235, with good ones selling between \$240 and \$300.

The recent course of the hog market was an agreeable surprise to stock feeders after the previous bad breaks in prices, an excellent demand in the Chicago stock yards bringing about good advances. On some days a falling off in average quality of the hogs was observed, and slaughterers found so comparatively few strictly prime lots of the lighter and medium weights that they paid an increased premium in order to fill their buying orders. It will not be long before the run of big, fat, heavy lard sows will be on, and by that time a large spreading out in prices between these and the better class of bacon hogs may be expected.



## THIS IS THE FIRST EDITION.

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

## DETROIT LIVE STOCK MARKETS.

## Thursday's Market.

June 12, 1913.

## Cattle.

Receipts, 1162. Market active at Tuesday's and last week's prices. We quote: Best dry-fed steers and heifers, \$8.25; steers and heifers, 1000 to 1200, \$7.90@8.15; do. 800 to 1000, \$7.50@8; grass steers and heifers that are fat 800 to 1000, \$6.75@7.50; do. 500 to 700, \$6.75; choice fat cows, \$6.50@6.75; good do., \$5.75@6.25; common cows, \$5@5.50; canners, \$4@4.50; choice heavy bulls, \$6.50@7; fair to good bolognas, bulls, \$6@6.50; stock bulls, \$5.50@6; choice feeding steers, 800 to 1000, \$7@7.70; fair do., 800 to 1000, \$6.50@6.75; choice stockers, 500 to 700, \$6.50@7; fair do., 500 to 700, \$6@6.25; stock heifers, \$5.50@6; milkers, large, young, medium age, \$6@7.50; common do., \$3@4.00.

Roe Com. Co. sold Mich. B. Co. 22 steers av 1140 at \$8.15, 1 bull weighing 1370 at \$7; to Parker, W. & Co. 39 steers av 1120 at \$8.25; to Sullivan P. Co. 3 bulls av 1023 at \$6.60, 2 do av 785 at \$6.30, 2 cows av 1000 at \$5.75; to Bray 2 do av 945 at \$5.25, 1 do weighing 930 at \$5, 3 stockers av 460 at \$5.50, 1 steer weighing 1000 at \$6.60, 3 canners av 690 at \$4.75; to Mich. B. Co. 1 bull weighing 970 at \$6.25; to Newton B. Co. 2 heifers av 485 at \$6.25, 13 butchers av 662 at \$5.50, 12 do av 720 at \$6.75; to Kamman B. Co. 17 do av 865 at \$7.25, 9 do av 964 at \$7.60, 3 cows av 1007 at \$6.50; to Wyntess 2 canners av 760 at \$3.75; to Breitenbeck 6 cows av 983 at \$6, 2 do av 1055 at \$5, 12 steers av 312 at \$7.65; to Kamman B. Co. 17 do av 891 at \$7.50; to Hammond, S. & Co. 11 do av 1173 at \$8; to Parker, W. & Co. 28 do av 970 at \$8; to Grant 6 cows av 960 at \$6.10, 2 do av 955 at \$4.50; to Sullivan P. Co. 2 steers av 1240 at \$8.

Bishop, B. & H. sold Hammond, S. & Co. 3 cows av 953 at \$5.75, 1 bull weighing 900 at \$6.25; to Sullivan P. Co. 1 cow weighing 920 at \$6.25, 2 heifers av 705 at \$6.85, 1 bull weighing 990 at \$6.50, 1 heifer weighing 700 at \$6.85, 2 steers av 1020 at \$7.60, 3 bulls and heifers av 883 at \$6.25; to Newton B. Co. 24 steers av 1266 at \$7.90, 10 do av 1090 at \$8.10; to Anderson 2 bulls av 930 at \$5.50, 3 cows av 853 at \$5.60, 2 do av 915 at \$5.50; to Kamman B. Co. 14 steers av 1100 at \$8; to Mich. B. Co. 1 bull weighing 1500 at \$6.70, 1 do weighing 1490 at \$6.75, 3 cows av 900 at \$5.50, 4 heifers av 665 at \$6.50; to Sullivan P. Co. 1 bull weighing 1210 at \$6.50, 3 cows av 1100 at \$6.60, 3 do av 1147 at \$5.50, 1 steer weighing 910 at \$7.60, 4 cows and bulls av 1017 at \$6.60, 1 bull weighing 1270 at \$7, 1 do weighing 1510 at \$6.75, 3 cows av 1120 at \$6.50, 5 do av 802 at \$5; to Newton B. Co. 2 do av 930 at \$6.40, 1 do weighing 1210 at \$6.60; to Converter 2 do av 740 at \$4.75; to Hammond, S. & Co. 2 canners av 1000 at \$4.50; to Breitenbeck 13 steers av 920 at \$7.75, 1 heifer weighing 720 at \$6.75; to Anderson 12 cows av 982 at \$5.75, 2 steers av 900 at \$7.50; to Bresnahan 2 canners av 610 at \$4.25, 2 heifers av 485 at \$6; to Kamman B. Co. 4 steers av 875 at \$7.75; to Mich. B. Co. 1 cow weighing 1080 at \$6.

Haley & M. sold Snow 2 stockers av 590 at \$7; to Sullivan P. Co. 4 butchers av 935 at \$6.25; to Newton B. Co. 3 steers av 763 at \$7.25, 8 butchers av 807 at \$7, 1 bull weighing 1640 at \$6, 1 cow weighing 770 at \$4.25, 6 butchers av 800 at \$7, 1 canner weighing 760 at \$3.75; to Bresnahan 7 heifers av 674 at \$6.75, 3 bulls av 557 at \$5.50; to Kull 4 steers av 760 at \$7, 2 do av 825 at \$6.10; to Mich. B. Co. 2 bulls av 1150 at \$6.75, 12 steers av 1046 at \$8; to Heinrich 5 do av 1024 at \$7.75, 19 do av 846 at \$7.85; to Schuman 13 do av 973 at \$8; to Hooper 3 stockers av 523 at \$6.50; to Mich. B. Co. 1 bull weighing 1150 at \$6.50, 1 do weighing 730 at \$6, 2 do av 1190 at \$6.65; to Snow 2 stockers av 625 at \$6.50; to Hooper 5 do av 446 at \$5.50, 11 do av 415 at \$6; to Sullivan P. Co. 10 butchers av 1014 at \$6.35, 1 steer weighing 1010 at \$7.75; to Bresnahan 8 butchers av 644 at \$5.90.

Spicer & R. sold Breitenbeck 1 cow weighing 810 at \$5.50, 1 do weighing 930 at \$6.75, 6 butchers av 663 at \$7, 2 do av 920 at \$7.40; to Newton B. Co. 4 cows av 1030 at \$6.25; to Mich. B. Co. 2 bulls av 825 at \$6.50, 2 do av 1215 at \$6.75, 4 do av 732 at \$6.40, 1 do weighing 1110 at \$6.75, 17 steers av 880 at \$7.40; to Sullivan P. Co. 2 do av 915 at \$7, 2 cows av 1060 at \$5.50, 3 do av 960 at \$6.50; to Baldwin 2 stockers av 590 at \$5.50; to Willmore 2 cows av 765 at \$5.25; to Bresnahan 8 butchers av 466 at \$5.50, 4 do av 700 at \$6.70; to Snow 4 feeders av 837 at \$7.25, 2 stockers av 705 at \$6.90; to Heinrich 10 butchers av 782 at \$7.25; to Hammond, S. & Co. 8 do av 485 at \$6, 4 cows av 920 at \$6, 2 steers av 945 at \$7.50, 10 do av 760 at \$7.25; to Sullivan P. Co. 6 cows av 1033 at \$5.85, 12 do av 1102 at \$6.35.

## Milk Cows.

Bishop, B. & H. sold Bresnahan 3 cows and calves at \$225, 2 cows and one calf at \$100, 5 cows and calf at \$325, 1 cow at \$55, 2 cows and calves at \$110, 2 cows and calves at \$100.

Same sold Converter 2 cows and calves at \$120, 1 cow and calf at \$45, 3 cows

and calves at \$200, 2 cows and calves at \$120.

Same sold Hely one cow and calf at \$48.

## Veal Calves.

Receipts, 349. Market steady with Tuesday; 25c higher than last week. Best, \$9.75@10.25; others, \$5@9.50.

Bishop, B. & H. sold Sullivan P. Co. 6 av 150 at \$10, 13 av 130 at \$9.50, 4 av 155 at \$10.25, 5 av 135 at \$9; to Hammond, S. & Co. 3 av 155 at \$10, 7 av 165 at \$10.50, 21 av 130 at \$9.75; to Sullivan P. Co. 5 av 160 at \$10, 4 av 155 at \$9.50, 3 av 190 at \$7.50; to Nagle P. Co. 12 av 145 at \$10, 17 av 145 at \$10; to Thompson Bros. 5 av 120 at \$8.50, 15 av 140 at \$9.50; to Parker, W. & Co. 46 av 135 at \$9; to Hammond, S. & Co. 5 av 150 at \$10, 4 av 150 at \$8; to Friedman 4 av 100 at \$7, 3 av 115 at \$8.50; to Mich. B. Co. 8 av 155 at \$10, 8 av 135 at \$10, 18 av 140 at \$10; to Applebaum 21 av 150 at \$9.90, 26 av 155 at \$10; to Newton B. Co. 9 av 150 at \$10; to McGuire 32 av 155 at \$10.25; to Goose 16 av 150 at \$10.

## Sheep and Lambs.

Receipts, 1779. Good lambs steady with Tuesday; sheep 50c lower. Best dry-fed lambs, \$7@7.50; fair lambs, \$6@6.50; light to common lambs, \$5@5.50; fair to good sheep, \$5@5.25; culls and common, \$3.50@4; spring lambs, \$8@8.75.

Bishop, B. & H. sold Woss 15 spring lambs av 60 at \$8.50; to Hammond, S. & Co. 9 sheep av 150 at \$5.25, 12 do av 130 at \$5.25, 6 av 115 at \$5, 3 spring lambs av 60 at \$8.50, 12 sheep av 115 at \$5, 4 do av 105 at \$4; to Sullivan P. Co. 7 lambs av 100 at \$6.75, 6 do av 90 at \$6, 96 sheep av 70 at \$5.50, 11 do av 80 at \$4.50, 11 lambs av 50 at \$7; to Parker, W. & Co. 293 do av 73 at \$7.25; to Harland 10 spring lambs av 48 at \$8, 16 sheep av 100 at \$4.75; to Hammond, S. & Co. 20 do av 120 at \$5, 6 do av 85 at \$3.50, 21 do av 115 at \$5; to Harland 14 do av 105 at \$4.50; to Hayes 18 spring lambs av 55 at \$7, 7 do av 57 at \$8; to Fitzpatrick 141 sheep av 83 at \$5, 33 do av 105 at \$5; to Rattkowsky 3 bucks av 180 at \$4.50; to Fitzpatrick Bros. 29 spring lambs av 58 at \$8.50, 17 do av 55 at \$8; to Youngs 10 do av 61 at \$7, 41 do av 68 at \$6.50.

Spicer & R. sold Mich. B. Co. 30 sheep av 90 at \$5, 5 do av 100 at \$4, 41 do av 110 at \$5, 11 do av 95 at \$5, 15 spring lambs av 55 at \$8.

Smith sold Newton B. Co. 5 spring lambs av 75 at \$8.50, 15 do av 55 at \$4.50.

## Hogs.

Receipts, 4075. Market 5c higher than on Wednesday.

Range of prices: Light to good butchers, \$8.80; pigs, \$8.80; light yorkers, \$8.80; stags one-third off.

Bishop, B. & H. sold Parker, W. & Co. 2600 av 180 at \$8.80.

Haley & M. sold Hammond, S. & Co. 580 av 180 at \$8.80.

Sundry shippers sold same 450 av 150 at \$8.80.

Roe Com. Co. sold Sullivan P. Co. 225 av 200 at \$8.80.

Sundry shippers sold same 210 av 180 at \$8.80.

## Friday's Market.

June 13, 1913.

## Cattle.

Receipts this week, 1387; last week, 1031. Market steady. Best dry-fed steers and heifers, \$8@8.25; steers and heifers, 1000 to 1200, \$7.90@8.15; do. 800 to 1000, \$7.50@8; grass steers and heifers that are fat, 800 to 1000, \$6.75@7.50; do. 500 to 700, \$6@6.75; choice fat cows, \$6.50@6.75; good do., \$5.75@6.25; common do., \$5@5.50; canners, \$4@4.50; choice heavy bulls, \$6.50@7; fair to good bolognas, bulls, \$6@6.50; stock bulls, \$5.50@6; choice feeding steers, 800 to 1000, \$7@7.50; fair do., 800 to 1000, \$6.50@7; choice stockers, 500 to 700, \$6.50@7; fair stockers, 500 to 700, \$6@6.25; stock heifers, \$5.50@6; milkers, large, young, medium age, \$6@7.50; common milkers, \$3@4.00.

## Veal Calves.

Receipts this week, 1123; last week, 1405. Market strong. Best, \$10@10.50; others, \$7@9.50.

## Sheep and Lambs.

Receipts this week, 2616; last week, 2323. Market dull at Thursday's close. Common spring lambs and fat sheep very dull. Best lambs, \$7.25@7.40; fair to good lambs, \$5.50@6; light to common lambs, \$4@5.25; fair to good sheep, \$4@5; culls and common, \$2.50@3.

## Hogs.

Receipts this week, 6162; last week, 7057. Market 5c higher. Light to good butchers, \$8.85; pigs, \$8.85; light yorkers, \$8.85; stags one-third off.

The Chicago and other prominent sheep markets of the country are receiving large supplies of grassy stock, the demand for which is extremely poor, and slaughterers purchase these flocks under protest, insisting upon and receiving liberal concessions in prices. Sheepmen who pursue this policy are making a serious mistake, for they are cheating themselves out of good profits that they might derive by holding on until these grassy muttons became properly matured. Inferior mutton is a menace to the mutton consumption, since it causes buyers in the retail markets to fight shy of mutton after having poor stuff worked off on them a few times. The Chicago market has been getting its sheep and lamb supplies recently largely from the surrounding country, and probably 50 per cent of its receipts have come from home territory. The stock from feeding barns being far better as a rule than the country fed stock, which was very apt to be grassy and only half fat. The packers are receiving southern spring lambs from Louisville in increasing numbers, but the early supplies have been much under expectations. Heavy fed lambs, as well as heavy yearlings are bad sellers, and heavy native ewes have in recent weeks undergone a slaughtering of prices.

Owing to belated grass early lambs in Idaho and other parts of the northwest have done poorly, many dying. Raising lambs on grass is not a success, milk being needed.

## CROP AND MARKET NOTES.

Lapeer Co., June 14.—The frost of the first of the week that did considerable damage to gardens, early potatoes, oats, and some early beans, was followed by a temperature of 90 degrees yesterday and today. Wheat and rye look good, but the acreage is small. There will be about the usual amount of beans and potatoes planted. Alsike and timothy very short. Alfalfa was badly damaged by the ice storm the last of March. Fat cattle and hogs scarce and high. Spring pigs are in good demand.

Genesee Co., June 12.—Cold weather is retarding the growth of field crops. Frost as late as June 10 have nipped tender plants, including early potatoes and corn. Some gardens have suffered severely from this cause. Some hay is being marketed but the bulk of Genesee's crop has been sold earlier in the season. It brings about \$12. Old potatoes are mostly out of producers' hands. What remain are slowly moving at 40@50c per bushel. Dairy products are keeping up well. Dairy butter brings 30c, and scarce. Veal is not over plentiful on the local market and commands 12c wholesale. Poultry retails at 20c and eggs at the same figure.

Emmet Co., June 10.—The weather for May was all that could be desired, so far as facilitating the progress of farm work, just about enough precipitation to maintain an equable supply of soil moisture, but the temperature was too low to promote the germination and growth of spring sown grain. Potatoes planted four weeks ago are just appearing above the ground. Corn is slow in germinating, in fact, all kinds of vegetation is making growth slowly. In spite of the numerous frosts, cherries and plums have set a satisfactory quantity of fruit, and apple orchards are full of bloom. Quite a little interest is being manifested in alfalfa growing. Rain is now needed.

Kalkaska Co., June 12.—Conditions have been very unfavorable all spring, quite heavy frosts occurring frequently. We are very much in need of a good warm rain. The hay crop will be short. Corn just beginning to show in the row. Potatoes about all planted, early planting coming up. Fall grain looking fairly well. Quite a number of horses have died and the price is almost prohibitive.

## New York.

Niagara Co., June 12.—Continued cool weather with cold nights. A scarcity of peaches and apples is predicted owing to weather. There were lots of blossoms but few set. Berries seem promising now. Tomatoes have been touched by frost. Several new state roads are under construction. Beans are selling at 1.95 per bu; corn, 70c; wheat, \$1; bran, \$23 a ton; middlings, \$27; calves, 9c; hogs, 8c per lb.

## Ohio.

Carroll Co., June 13.—We had several frosts this week which hurt some of the corn. The strawberry crop is rather light this year. Barley is growing fine. We need some rain now, as everything is getting very dry. The hay crop will be light. Wheat, \$1.05; oats, 42c; corn, 65c; butter, 26c; eggs, 16c. Nearly all the sheep are shorn, but no wool sold yet.

Hardin Co., June 16.—Corn planting has lasted well this spring; some still planting the 12th of June, yet I think the corn is making slow progress. Wheat is in the ground, too, and a good many poor stands of corn, too. Clover is going to make a good crop, the best in several years. Wheat and rye have come out wonderfully and will make a fair crop. We had some frost here a week ago and froze some corn and potatoes, but think they will come out all right. Butter, 18c; eggs, 17c.

## LIVE STOCK NEWS.

In a short time the crop of southern spring lambs grown in Kentucky and Tennessee will be moving in steadily increasing numbers to northern markets. Louisville is always the great primary receiving market, and the Chicago packers every year station their buyers there for the purpose of purchasing large numbers of the lambs for shipment to their packing plants. This means the elimination of middlemen to some extent, and it always acts against the interests of other sheepmen who are in the habit of having consignments of lambs on the Chicago market at that time of the year.

Recently J. F. Miller, of Atlanta, Mo., marketed 20 head of steers that averaged 1,139 lbs. at \$9 per 100 lbs. in Chicago. They were grade Herefords coming two-year-olds, having been purchased last July in Omaha. They were fed about 10 months, running on grass for the grazing period and fed out on ear corn and cottonseed meal, with plenty of timothy hay. The cattle made a highly satisfactory gain and made a good profit for the owner.

The average quality of the hogs now being marketed in Chicago and other packing points is extremely good, and the great bulk of the offerings sell within a narrow range, going near top quotations daily. The packers are exercising increased discrimination, however, and in many instances they insist upon having the rough, heavy sows thrown out of the cars before buying the remainder of the hogs. Packers have no reason to complain about the high prices they are forced to pay for hogs, as their profits in recent weeks have been running as high as from \$1 to \$2 per hog.

Reports come from the western central portion of Indiana that there is a normal supply of cattle on feed. Some of them are ready for marketing now, and others will be shipped from this time up to the last of August. Fat hogs are rather scarce, and the pig crop is below an average, cholera having destroyed many herds of hogs last fall, while many stockmen had hard luck with their spring litters. Fed sheep have been mostly mar-

keted. Stock farmers are looking at stock cattle prices with wistful eyes and are disposed to wait in hopes of lower prices later on.

Muddy feed lots are held in great measure responsible for recent excessive receipts in the Chicago market of poorly finished cattle, and as they were wholly undesirable for slaughtering, while farmers were only limited buyers of stockers and feeders, the prices paid were extremely low in all cases. Farm work has been exacting since real spring weather set in and farmers have had little time to devote to other matters. Besides, the work of tariff revision by Congress has helped to complicate the situation and to deter purchases. It cannot be denied furthermore that recent prices asked for a high grade of cattle adapted for feeding for the future market were relatively much higher than the prices paid for choice, finished, corn-fed steers, and conservative farmers have not thought it prudent to take such chances. There are always some who will try their luck, no matter how high the price may be, but of late the average buyer has preferred to take chances on medium-priced feeders or stock steers. There has been a large demand for well-bred heifers and cows for feeding, farmers having made good profits in this way for a long time past, but very few are now offered on the market. As it is, there are more than these every good breeding heifer or cow should be kept on the farm for breeding purposes. Fortunately, the number of farmers who realize this fact is increasing all the time, and from various parts of the middle west and west there is a constant call for female cattle, as well as for high-grade bulls. To restore the supply of beef cattle of this country to normal proportions will require years.

There is a large demand for choice bacon hogs in the markets of the country, and it shows every promise of continuing through June. Naturally, light-weight bacon hogs command a good premium at a period when a season of great abundance of low-priced feed tends to make owners make most of their hogs fat and heavy. As the summer advances light hogs are likely to become much scarcer, particularly by the time when the old sows that have weaned their litters of pigs become fat and ready to market. Lard hogs are expected to become plentiful later on, as is the yearly custom, and in all probability light lots will bring a larger premium than ever. A Chicago live stock paper says: "As the summer works along featherweights promise to be even more scarce than at present and only slight increase in eastern demand will make the hog market a two-sided affair. By the time the summer run of 'grass widows' sets in a dollar spread between prime light and lard hogs is not improbable. Demand for bacon is broad and insistent, as indicated by activity on the part of small houses which cure it. The present heavy movement of eastern hogs will subside in June—in fact, there is evidence of it in increasing shipping demand now, and speculation will get better action. There is much difference of opinion in market circles as to what June will develop, but nine years out of ten the low spot is uncovered between the 10th and 20th of that month. There is some skepticism that the rule will work this year, although the trade knows of a lot of fat hogs to come during the next 30 days."

Patrick Cudahy, of Milwaukee, the widely known packer, is still a believer in higher prices for provisions. He says the cash trade is good, with a big export business, and while hog receipts may be liberal for a time, there will be a steady outlet for the manufactured product at good prices. He expects to see light stocks by the first of next September.

Late reports from the region in South Dakota west of the Missouri river state that more cattle will be summered there than for years, and their quality will be excellent. Grass was never better, and already fair numbers of young cattle are being marketed.

John Kelley, of Illinois, appeared in the Chicago stock yards recently with a car load of hogs and two cars of cattle. He reported a fairly large supply of matured stock throughout central Illinois and did not look for any improvement in either cattle or hog prices in the near future.

The Chicago packers have advanced round steaks two cents a pound since the first of January, raising the price to 13½c, while they have lowered the prices for the best ribs of beef and the best loins. This is explained by the general curtailment in the demand for the higher priced cuts of beef in the retail meat markets because of their unusual dearthness, while the cheaper cuts are in much greater relative demand. Best ribs wholesale for 16c per pound and best loins for 18c, the former being seven cents cheaper than on January 1 and the latter eight and a half cents lower. Meanwhile the retail markets maintain prices where they were at the beginning of the year. This tends to lessen the consumption of beef materially, and to a great extent eggs are eaten as substitutes, being low-priced.

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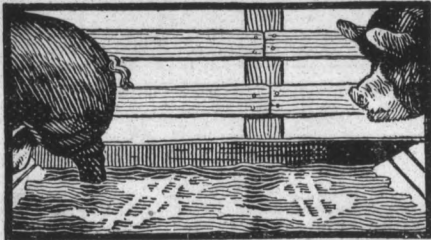
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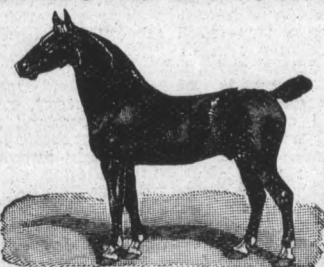
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# Farm Commerce.

## Developing a Co-operative Community.

A CERTAIN community in a small New England town has evolved a scheme of co-operation which, when fully developed, will, we have no doubt, make it one of the most prosperous in the country. As yet the system planned is only partially in force but the results have already been so obvious that everyone is enthusiastic to continue and extend the system to other lines.

This community is a collection of 15 or 18 small farmers engaged in diversified farming, situated some four miles from a thriving village. The village affords a good general market but in the past much of the produce used there has been shipped in from some distance. As one of the farmers stated, "While our fruits and vegetables were rotting on the ground, the same kinds of produce were brought in on the trains to supply the demand."

The idea of co-operation in marketing was born in the brain of one of the farmers' wives. She talked the matter over at the sewing circle, with the result that a "gentleman's night" was arranged. Meanwhile the husbands had been "approached" on the subject, so when the meeting was called to order by the chairman of the board of selectmen, a mutual benefit and co-operative society was immediately formed, with every farmer in the community a member.

### Dairying is Improved.

There was one man in the community who sold milk in the village every day. This man could handle more milk than he could produce on his own farm, consequently he readily agreed to take the milk of his neighbors' herds and sell it in the village for a small commission. He insisted that every quart he sold should test up to a certain standard, with the result that the milk business, from being a side line of doubtful profit, has become a thriving industry. He now handles ten times as much as he formerly handled and the commission he receives from his neighbors enables him to hire help to carry on the business properly; while several who formerly allowed much to go to waste now receive a considerable income from the few cows they keep. Another result has been the introduction of better blood through the co-operative purchase of a thoroughbred bull.

### Fruit Growing Prospers.

One fruit grower in the community had attempted to introduce modern methods into his orchard. That is, he had purchased a hand sprayer for his hundred trees and was producing apples of much better quality than his neighbors. This matter was discussed at one of the meetings, with the result that a power sprayer was purchased, each member paying in proportion to the number of trees he had to spray. The men who did the work were paid a regular daily wage. Approved methods of pruning and cultivation were discussed in the meetings and now, in only two seasons, every orchard in the community is in first-class condition. No one member had more than 100 trees, some less than 50, and no individual could afford to purchase a power sprayer, but by wise co-operation, the same care the large orchardist gives his trees were available to the owner of 50. Where but one man was producing fruit of good quality, 18 are now selling in the best markets. This one man, too, handles all the apples grown, selling for the other members on a commission basis. All are sold to the retail trade of the nearby village and top-notch prices are the result. A year or two ago the most of the apples raised were of such poor quality that there was practically no market for them.

### Vegetables Are Handled More Economically.

It was the practice formerly for each farmer who raised vegetables to drive into town two or three times a week with a small load and sell to the dealer for any price offered. Now two men are making a business of selling their own and the products of their neighbors' gardens. Nothing is sold to the stores, but the better class of buyers in the village look to these two men for their daily supplies. Their teams may be seen almost daily throughout the year heavily laden with vegetables, a large part of which is handled on commission. Instead of ten men and ten horses, perhaps, two

men and four horses now do the same work with much better results.

Last spring the matter of co-operation in seed buying was brought up in one of the meetings with the result that each one made out a list of his requirements. Prices were obtained from several reliable growers and the seed finally purchased at wholesale prices, making a considerable saving to each member. Another item of saving was in the freight. Fertilizers were purchased in the same way. It is proposed to extend this matter of co-operative buying to embrace feed for stock, many of the groceries for household use and may ultimately mean the establishment of a co-operative store.

As yet the plan is only fairly launched but all are enthusiastic to extend it to embrace many other lines of buying and selling. One result has been to obtain for the individual farmer almost all the profits of his labor, instead of giving the lion's share to the middleman. It has also reduced the cost of marketing in certain lines to a minimum and has raised the standard of production to a considerably higher level. Ultimately it will mean the still further raising of these standards, if the plan is continued.

Each member of the organization is an experienced farmer and is vitally interested. There are no side issues, or outsiders, to divert the attention of the mem-

deal with several at once than with one at a time. In working together in marketing a great deal will be learned as to the needs of the market.

The fruit growers of the west, when they began to co-operate in marketing, soon learned the demand of the market and sent out only the fruit that was up to standard. In some cases where orchards had been planted to inferior varieties the growers were compelled to destroy them and put in varieties that were up to standard. In this way a reputation was made for the locality. The same can be done with potatoes, hogs, cream, or any other product as well as with fruit.

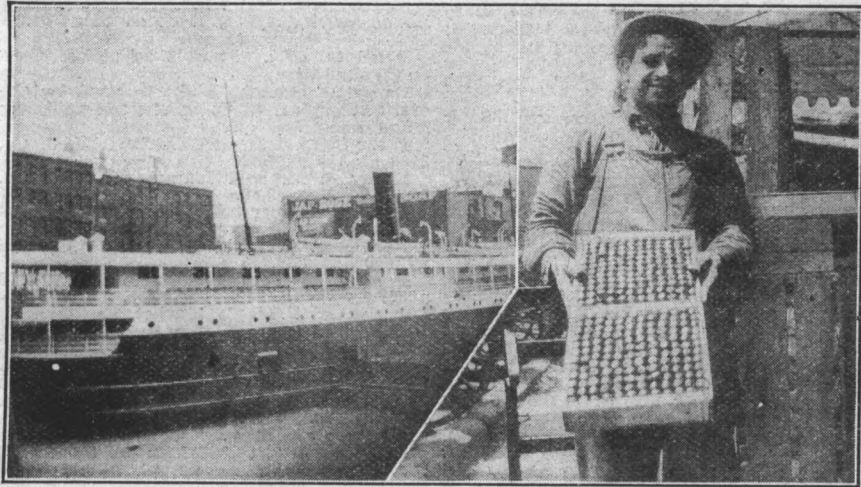
A start must be made. The way to make the start is to begin working with one or two neighbors. More will join when they see you do something. When several small beginnings have been made a large organization will be possible. The small beginnings must come first—and don't wait for the other fellow to start. Do that yourself.

North Dakota.

W. C. PALMER.

## MICHIGAN HAS THE PRODUCTS AND THE MARKETS.

The accompanying picture combination—cherries and steamboats—holds out a wonderful future for the great Wolverine state. Thousands of acres of the former in the upper end of the lower peninsula are now being cultivated and in season will be transported over a water route to the great markets of the Great Lakes without incurring a cent of expense for refrigeration and at lower rates than rail rates. Compare the promise with the situation in which the far distant orchards now supplying middle western



This Combination Picture Illustrates two Elements that Count Much for the Prosperity of Northwestern Michigan—Steam boats and Cherries.

bers from the main object. At each meeting something is discussed which means dollars and cents to the members. Some such plan as this adopted in many communities of small farmers would mean better methods, more profits, and might, perhaps, change the wail of so many that "farming does not pay."

New Hampshire. C. H. CHESLEY.

### BUYING AND SELLING.

The person who lets the other fellow set both the selling and buying price, is not getting his fair share. The farmer is in just about that kind of a fix. How can it be remedied? Labor was in just that fix until they organized. When organized in unions they could bargain as to the thing they had to sell—their labor. The farmers will have to co-operate if they want to have something to say in fixing prices. The fruit growers of the west have become prosperous through the fact that they are organized. They no longer put their whole fruit crop on the market the day it ripens and so glut the market. They hold their fruit until the market needs it. In this way they get a good price all the time. They do their own selling so no one can manipulate the market.

Some seem to think that a big organization is necessary. It is advantageous but the beginning must needs be small. Three or four farmers can very well start co-operating. They can grow the same kind of hogs and market together. They can buy their groceries together from the grocer. It will be worth the while of the grocer, the hardware dealer, the machine agent, the banker, to make some concessions when dealing with several persons at once, whether it be buying or selling. Three or four working together can do better than each one alone. It will be cheaper for the business men in town to

markets are required to ship their product in iced cars over a haul of two or three thousand miles. It ought to be an interesting picture to every citizen of the big fruit raising state of Michigan.

Illinois.

J. L. GRAFF.

### THE SPIRIT OF CO-OPERATION.

Had I the power to build an ideal rural neighborhood I would place every man on a good farm, not too large, and on every farm I would put a good dairy herd. I would induce them to build a co-operative creamery, and form a breeders' association, and a cow testing association. In every home I would have a good dairy and farm paper. I would ask them to come together twice each month in some sort of farm organization, to study their business and its relation to life. With this good start they would build the school and the church. They would place in their homes those modern conveniences that make life easier for the family, and would develop a love for the pure and the beautiful in nature and art. Life would mean vastly more to them than to those who have never learned the meaning or the worth of true co-operation, and who, living for themselves, find the objects of their toil ever eluding their grasp.

Oceana Co.

W. F. TAYLOR.

The undertone of the Chicago hog market in recent weeks has displayed unmistakably firm symptoms, and it is no longer possible for anyone to doubt the anxiety of the packers to get hold of every hog possible. The situation is such that owners of thrifty, healthy young hogs should use the utmost pains to finish them off in first-class shape, as there is every reason to expect continued high prices for months to come. The stocks of provisions in western warehouses are still unusually low, and the work of restoring them to normal proportions has been of the slowest, last month's increase being trifling.



# 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.

**Umbilical Tumor.**—Have been a subscriber to your paper about five years and don't see how I could get along without it. Would be pleased to have you inform me through the veterinary column what to do with bunch on the navel of a two-year-old colt. I do not believe it a rupture, for bunch is not soft and this swelling has not always been quite as large as it is now. G. M. P., Bear Lake, Mich.—You will obtain fairly good results by applying one part iodine and eight parts fresh lard every day or two. If it is a case of hernia the bunch would be soft and pressure would crowd sack into abdomen.

**Contagious Abortion.**—Have a cow that has dropped her three calves, either the seventh or eighth month of gestation—has never gone full period. The calves die. She is a thoroughbred Jersey and I believe would be a good cow if she would carry the calf full period. Is there anything I can do for her? H. B., Berrien Springs, Mich.—Contagious abortion in dairies is almost as serious an ailment as tuberculosis. It is no easy task to clean up a herd, for there is no certain remedy. From now on your cow will perhaps carry her calf full period. If she has any vaginal discharge or even if she has none, I advise you to inject her carefully with a tepid lotion made by dissolving 1 dr. permanganate potash in a gallon of clean boiled water. She should be treated every day for a few days, then every two or three days, for not less than three or four weeks. If you keep other cows, mares, sows or ewes, your stables should be thoroughly disinfected and cleansed; this, of course, you understand how to do.

**Swollen Leg—Pin Worms.**—Some two weeks ago my mare cut leg on barb wire; I applied blister; since then leg swells considerably. I have been afraid of this leg remaining thick. I have also noticed that she has a few pin worms. L. A. G., Shelby, Mich.—You made a mistake in applying blister to wound. Dissolve 1 oz. acetate of lead, ½ oz. carbolic acid in a quart of water and apply to wound and swollen leg two or three times a day. Also give him a teaspoonful of powdered nitrate of potash at a dose in feed once or twice a day. He should have daily exercise. Boil one pound of quassa chips in a gallon of water for an hour or two, then inject some of this tea into bowel three times a week.

**Lumbago.**—I have a sow that was all right until I weaned her pigs; since then she wabbles behind and sometimes drags her hind parts. C. E. D., Ashley, Mich.—Feed less corn and if you feed her grain give her a few oats, oil meal and a grain of strychnine and a teaspoonful of cooking soda at a dose in feed three times a day. Apply one part turpentine, one part aqua ammonia and four parts olive oil to back and hind quarters every day or two.

**Deafness.**—A gun was discharged by a young man who was riding a horse and since then the animal has been deaf. The horse accidentally turned his head just as the gun was fired; consequently the explosion was very close to his ears. W. H. C., Grant, Mich.—I am inclined to believe that your horse will always be deaf; however, by dropping 30 or 40 drops of olive oil into ears two or three times a week, his hearing might be partially restored, but it is doubtful.

**Swollen Glands—Incipient Heaves—Abscess.**—Have an eight-year-old mare that has a very bad cough, am inclined to think she is coming down with heaves; her glands are swollen some, has no nasal discharge and is working every day. I also have a turkey gobbler one year old that has a soft bunch under wing which is soft and flabby. Mrs. L. G., Attica, Mich.—Feed your mare no clover or musty dry fodder; grain and grass is the best feed for her. Give her a dessertspoonful of glyco-heroin (Smith) at a dose in feed three or four times a day. Also give her a dessertspoonful of Fowler's solution at a dose two or three times a day. Open abscess and allow its contents to escape, then apply one part bichloride of mercury and 1000 parts of water twice a day.

**Sprained Knee.**—I have a two-year-old Shetland pony that dislocated knee joint which I have put back in place, but since then he is very lame and dislikes to move joint, but stands with considerable weight on it. W. F., Columbiaville, Mich.—Your pony sprained ligaments of knee, but did not dislocate joint. Apply one part iodine and ten parts fresh lard to joint three times a week. You had better turn him out to pasture nights and cloudy days.

**Leucorrhoea.**—Whenever my mare is worked hard she has a heavy mucus discharge from vagina, but when rested this discharge lessens. Would you advise me to breed her? N. A. F., Paw Paw, Mich.—Your mare will not get with foal until she is pretty much cured of leucorrhoea. Give her a teaspoonful of powdered sulphate of iron and a tablespoonful of baking soda at a dose in feed two

or three times a day. Dissolve 1 dr. of permanganate of potash in a gallon of clean boiled water and inject her with some of this lotion at tepid heat once a day. Remember it is easy to injure a mare while making these applications.

**Septic Infection.**—Had a colt which was foaled May 28, and died ten days later. Twenty-four hours after birth I noticed colt breathing short and heart was beating rapidly and he became weaker and weaker until he died. Do you think death resulted from a weak heart, or what was the trouble? A. E. E., Romulus, Mich.—I am inclined to believe that your colt died from septic navel infection and perhaps colt also had a weak heart.

**Injured Stifle.**—One year ago my four-year-old horse dislocated stifle; I put it back in place; kept him in box stall for several months and he seemed to recover. Lately he handles the leg much like a horse that has stringhalt. H. G., Marlette, Mich.—Apply one part turpentine, one part aqua ammonia and four parts soap liniment to stifle once a day.

**Bunch on Knee.**—A bunch appeared on knee of horse last winter, is now the size of a hen egg and has never produced lameness until lately. A. H. H., Kingsley, Mich.—Apply one part red iodine of mercury and eight parts lard to bunch every few days.

**Foot Lameness.**—I have a ten-year-old horse that I have always owned that has a soft bunch on top of withers which is painless, but he shows a little lameness. He is flat-footed in front, was lame several months ago and is now inclined to point foot and show a little lameness. A. E. L., Coleman, Mich.—Apply tincture of iodine to bunch on withers daily. Also apply one part red iodine of mercury and ten parts cerate of cantharides to coronet in front every five or six days. During hot weather it will help his feet to stand in wet clay for two hours a day.

**Acidity of Stomach.**—My three-month-old calves do not care to eat dry hay; they seem to be fond of licking and gnawing wood, are fed skim-milk and prepared calf meal. I have not yet turned them out to grass. A. G., Forsyth, Mich.—Give your calves a teaspoonful of baking soda with each dose of skim-milk and feed them green grass or fresh cut hay, instead of dry fodder.

**Septic Navel Infection.**—I have two sows that were kept in clover and alfalfa pasture all spring until within a week of farrowing, then they were fed slop and middlings. When the little pigs were about five days old sores came on their forelegs, then around eyes, ears and nose and later spread all over their body. These pigs acted dumpy, shivered a great deal, some of them died when eight days old and others when 13. I applied stock dip and have only four living out of 12. C. A. E., Morley, Mich.—Wet pigs with one part bichloride mercury and 2000 parts clean tepid water two or three times a day and keep the sow and little pigs as clean as possible. You should have applied a healing remedy to navels. If they are yet sore apply boracic acid twice a day.

**Indigestion.**—I would like to know what to give my cows to prevent them eating wood and bones. G. H. DeW., Zeeland, Mich.—Mix together equal parts gentian, baking soda and salt and give each one of your cattle two tablespoonfuls at a dose in feed twice a day.

**Scrotal Hernia.**—I have a colt a week old today that is ruptured and the bunch is in scrotum. Is there any cure for this young colt? A. M., Kenton, Mich.—If your colt suffers no pain or inconvenience from this hernia, leave him alone until next November, then have him operated on. He should be castrated at same time that hernial operation is performed. Remember, he can be operated on in two or three weeks, provided the testicles are in scrotum.

**Weakness—Worms—Enlarged Glands.**—Our eight-year-old mare has a good appetite, eats plenty of food, but is inclined to tire in the middle of the afternoon. We have another horse with enlarged glands, the result of distemper. J. F. Lake City, Mich.—Give 1 dr. ground nux vomica and 1 dr. fluid extract digitalis at a dose in feed three times a day. You should avoid over-working her. Apply to enlarged glands one part iodine and ten parts fresh lard every ten days. Also give him 1 dr. potassium iodide at a dose in feed twice a day.

**Gout.**—Our colt was born May 27, and has under the skin on each side of its throat a movable lump about the size of a small hickory nut. What are they and how should they be treated? R. B., Harrisville, Mich.—Give colt 3 grs. potassium iodide at a dose once or twice a day, then the lumps will soon disappear.

**Cow Gives Stringy Milk.**—I have a nice heifer giving stringy, lumpy milk and I would like to know what can be done to improve the quality of the milk. W. A. G., Lansing, Mich.—A change of food and water should be made, then you may remove the cause. Give a teaspoonful of powdered nitrate of potash in feed twice a day and dissolve 2 drs. of hypo-sulphite of soda in a pint of water and inject some through teat canal into udder twice a day, after milking.

**Cow Gives Bloody Milk.**—I have a cow that gives bloody milk; she came fresh last October and is apparently in good health. C. C., Monroe, Mich.—Your cow has bruised her udder and will soon recover if she is milked carefully. Apply one part tincture arnica and four parts water to bruised udder twice daily.

**Diseased Chickens.**—We have a peculiar trouble among our chickens, the first symptom noticed is a swelling on right side over thigh and this swelling is puffy, filled with air and soon spreads over most of body. Whatever the ailment is, it runs its course rapidly for it produces death in some cases in 24 hours. These chickens are about six weeks old incubator hatched, and have a large run. I feed cracked corn and wheat screenings mixed. I have never had anything

like this ailment attack my chickens before and the hens are all healthy as far as I can tell. Mrs. A. S., Mt. Clemens, Mich.—You do not furnish me with sufficient symptoms before and after death in order to assist me in arriving at a correct diagnosis. I suggest that you clean and thoroughly disinfect their roost, also feed them some ground ginger, gentian, and bicarbonate of soda in their feed two or three times a day. It is possible that those which die have never been perfectly healthy.

**Sow Does Not Come in Heat.**—I have been benefited greatly by what I have read in veterinary department, and as I have a sow that does not come in heat, would like to have you tell me what to do for her. F. J. M., Petersburg, Mich.—Feed your sow plenty of grain and give her small teaspoonful of powdered capsicum and a dessertspoonful of whiskey at a dose in feed two or three times a day.

**WANT TO BUY** Registered Holstein heifer calves of good breeding. W. H. H. WERTZ, Wooster, Ohio.

## BREEDERS' DIRECTORY.

### CATTLE.

#### 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 size 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.

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

I have 2 Reg. Guernsey bulls left. Ready for service, the very best breeding, cheap if taken soon. Guarantee satisfaction. John Ebels, R. 10, Holland, Mich.

**HEREFORD BULLS FOR SALE** Also Poland 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.

**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.

**FOR SALE**—Two reg. Holstein bull calves, 1 & 7 months old from good A. R. O. dams. Fine individuals. Price reasonable. Floyd F. Jones, R. 3, Oak Grove, Mich.

**"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.

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

**Service Bulls and Bull Calves** Sired by Johanna Corcordia 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.

L. E. CONNELL, Fayette, Ohio.

**Bigelow's Holstein Farms** Breedsville, Mich.

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

Send for circular.

**HOLSTEIN COWS FOR SALE** Bred to a bull that is more than a half brother to the World's record cow Bonessine Belle De Kol. This is an opportunity for some one to start in Registered stock at a moderate cost.

ED. S. LEWIS, Marshall, Michigan.

**THIS HOLSTEIN BULL** Waterford by best son of PONTIAC BUTTERBOY. Dam has official record of 24 lbs. and 7/8 cwt. milk a day. Price \$100. C. D. WOODBURY, Lansing, Mich.

**REGISTERED HOLSTEIN** Bull 2 months old sire of Grand Son of DeKol 2nd, greatest producer of 30-lb. cows. Dam traces twice to Paul Beete DeKol, M. A. R. O. daughters. \$50 delivered. Hobart W. Fay, Mason, Mich.

**HATCH HERD HOLSTEINS**—Choice sires from onable prices. HATCH HERD, Ypsilanti, 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.

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

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

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

**JERSEY HEIFERS**—giving milk. Bulls old enough for service. Yorkshire hogs, Hampshire sheep. A. B. ATHERTON, Wellston, Mich.

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

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

**Dairy Shorthorns**—Large Cattle—Heavy Milkers. No stock for sale at present. W. W. KNAPP, R. No. 4, Watervliet, Mich.

## SHEEP.

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

**IT PAYS TO BUY** thoroughbred sheep of PARSONS. "The Sheep Man of the East," R. I. Grand Lodge, Mich. (Write for descriptive price list.) I pay express charges. Oxford, Shropshires, Rambouillet, Polled Delaine.

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

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

## HOGS.

**Durocs & Victorias**—A Desirable Bunch of Sows of Either Breed due April and May. M. T. Story, R. B. 48 Lowell, Mich. City Phone 65.

**BERKSHIRES**—Male and female from one to 2 1/2 mos. Registered or eligible, served and ready for service. Some fine well bred young hogs ready for service. F. D. & H. F. HOVEY, Imlay City, Michigan.

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

**A Yearling Sow**—bred for July farrowing, also a choice lot of Spring Pigs for sale. Either sex. A. A. PATULLO, R. No. 1 Deckerville, 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's**—A FEW BRED SOWS FOR SEPTEMBER FARROW. GEO. P. ANDREWS, Dansville, Ingham Co., Mich.

**O. I. C. SWINE** Write me for price on Spring 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." C. S. BENJAMIN, R. No. 10 Portland, Mich.

**O. I. C's**—all gold. Orders booked for April and May pigs of the choicest breeding. C. J. THOMPSON, Rockford, 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's**—All ages, growthy and large. Males on young stock. H. H. JUMP, Munith, Mich.

**O. I. C.**—March pigs ready to ship, the long growthy kind with plenty of bone, at farmers prices. A. NEWMAN, R. 1, Marlette, Mich.

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

**DUROC JERSEYS**—Fall Gilts bred or open. Spring pigs pairs not akin. F. J. DRODT, R. No. 1, Monroe, Michigan.

**MALES ALL SOLD BUT ONE**—Fancy fall gilts for sale. JOHN MCNICOLL, Station A, Bay City, Mich. Route 4, Box 81.

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

**DUROC JERSEY SPRING PIGS** of either sex for sale. Pairs not akin, also 2 Reg. Percheron mares, 2 years old, both grays. M. A. BHAY, Okemos, 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 hogs, 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 R. P. Rocks, \$1 per 15. ROBERT NEVE, Fierston, 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 livery. W. E. Livingston, Parma, 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, Saline, Michigan.

**350 BIG TYPE MULE FOOT HOGS**—All ages for sale. Prolific and Hardy, Best Bred for Michigan. J. DUNLAP, Williamsport, Ohio.

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

**FOR SALE**—Yorkshire boar pigs, will be ready for fall service. WATERMAN & WATERMAN, Meadowland Farm, Ann Arbor, Michigan.

**Lillie Farmstead YORKSHIRES** Spring bred gilts all sold. Gilts bred for next August farrow. September pigs either sex, pairs and trios not akin. Orders booked for spring pigs.

COLON C. LILLIE, Coopersville, Mich.

## DOGS.

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

**FOX AND WOLF HOUNDS** of the best English strains in America; 40 years experience in breeding these fine hounds for my own sport. I now offer them for sale.

Send stamp for Catalogue. T. B. HUDSPETH, Sibley, Jackson Co., Mo.



# Horticulture.

## CULTIVATING AND HARVESTING ONIONS.

Will you please tell me how to cultivate onions, i. e., do you hill them up, work the earth away from the onions, or do you keep the earth level? How do you harvest them?

Kalkaska Co.

I. D. W.

To keep the soil of the onion field in condition for the best development of the onion plant requires exacting cultural methods. Because the crop is usually grown on expensive land, where it is desirable and economical to place the rows close together, hand cultivation is generally followed instead of horse cultivation. Then, too, the tendency of the roots of this plant to grow near the surface of the ground necessitates that the cultural tools will run shallow, which, too keep the soil so it will accommodate the plants with the maximum of moisture that falls upon the land, demands that the cultivations be frequent. Another condition, and that the one specifically requested in I. D. W.'s inquiry, is that the soil should be worked away from the plants under most circumstances. Onions do best where the bulbs can develop on top of the soil, and wherever there is a tendency for them to grow beneath the surface the soil should be gradually worked away so that the bulbs will develop above the ground. Pulling the soil away should start when the bulbs begin developing. On muck and alluvial soils the onions should be cultivated from eight to a dozen times, depending upon the season, while on sandy soil fewer cultivations will do.

The usual method of harvesting the onion crop in the north may be briefly stated as follows: After the plants are matured, the tops and the outer skin are dry, providing the season is such as to allow them to get in such condition, they are pulled. This is usually done by hand, but in the event that they have grown beneath the surface of the soil a one-horse plow may be used to loosen them after which men gather and throw them into windrows by hand. In these windrows they are allowed to remain for several days, being stirred occasionally with a common wooden rake to aid in curing. When the moisture has sufficiently evaporated the tops are removed by twisting, or by cutting with an ordinary pair of sheep shears, and the bulbs are put in crates for drying. These crates are frequently left stacked up in the field for some time where the free circulation of the air hastens the drying process, or they may be taken to some open shed and piled so that numerous air spaces will assist in bringing about the same results. When thoroughly cured they are sold, or put away in some dry storage place, with a comparatively low temperature but with provision made to prevent freezing.

## A TOMATO PATCH IN NORTHERN MICHIGAN.

Setting tomato plants in the field was completed May 30. There are something over 3,000 plants, set in rows four feet apart, with plants about 18 inches in the row. I should not consider it wise to risk setting this number of plants thus early in the season, if the location had not been sheltered from the wind, and the plants thoroughly hardened; but, as it is, the plants are entirely safe, unless a general frost should occur and this is not likely, after this time, in our locality, which is well protected by the close proximity of large bodies of water; anyhow, it seemed advisable to accept possible risks in this way, rather than to longer delay the work of transplanting to the open field, for many of the plants were crowding in the plant beds, making transplanting at once necessary. To re-transplant them in beds would not only have occasioned a great deal of extra work, but would have delayed the ripening period as well, and this meant lower prices with reduced receipts, so, all things considered, it was decided to take additional chances with the weather.

Taking the plants as a whole, and the conditions under which they were transplanted and the favorable condition of the soil at the time, the prospect for good results at harvest is very bright indeed. Nearly all of the plants show buds, and many of them blossoms. As the method of culture to be used will insure the setting of fruit with a large per cent of these, there seems to be no reason why

there should not be a considerable quantity of ripe fruit to place on the market at a time when the only competition will be hothouse products from Grand Rapids and Texas and other southern grown tomatoes. Prices realized on these early tomatoes are determined solely by the condition of southern crops, and the supply of shipped in hothouse fruit. In the season of 1911, the first tomatoes marketed was on July 8, which brought \$1.10 per 8-lb. basket. The plants that grew these tomatoes were set in the field May 26. The weather that prevailed at the time was much warmer than that which has prevailed during the last week of the present May, and the weather during June of that season was exceptionally favorable for the growth of the tomato plant. How results of the present season will compare with those of 1911 is largely problematical. The plants used this season are superior to those used in 1911, but it is extremely doubtful if weather conditions of the present season will equal in favorableness those prevailing during that season.

One of the first difficulties to contend with this season is the cutworm. The first morning after the plants were in the field, an examination showed 24 plants cut down. Twenty-two of the enemy were hunted out and destroyed. Daily, morning examination is the only means that will be used to combat this pest; but even with the most painstaking care, it seems likely that quite a few plants will be destroyed in this manner.

Emmet Co.

M. N. EDGERTON.

## CONTROL OF TOMATO FLEA-BEETLE.

Many farmers this spring have noticed a tiny dark colored beetle upon the tomato plants and later the leaves have taken on a shot-hole appearance due to the depredations of these beetles. They have also been found on other plants, such as the turnip, cabbage, radish, mustard, potato, and even strawberries, and are very destructive to young plants which are just coming through the ground. There are several different species of these beetles, all of which have different distinctive colors and nearly all of them are injurious to the same plants.

The flea-beetles which do so much damage in the grape vineyard by eating off the young buds are steel-blue in color and about one-fifth or one-sixth of an inch in length. On the tomato and potato and other related plants, we may find either a black flea-beetle or one which has a broad, wavy, dull-yellow stripe upon each wing-cover. This beetle measures about one-tenth of an inch long. He eats numerous little pits or holes in the thicker leaves of the plants and the young, or larva, are tiny white worms which feed either on the roots or mine in the leaf. When these tiny beetles are found on the plant and are disturbed, they jump off onto the ground and curl up their legs and lie still, somewhat in the same manner as the adult Colorado potato beetle. They chew or bite their food, hence they may be killed by poisons. It is a good plan when transplanting the plants which are attacked by the flea-beetle, to dip them in a strong solution of arsenate of lead. Bordeaux mixture liberally applied to the plants acts as a preventive and insures them against the attacks of these minute creatures. However, Bordeaux mixture does not kill the pests but merely acts as a repellent and drives them away. When the plants have grown larger, the beetles do not seriously injure them as the tiny creature seems to prefer more tender leaves.

Ingham Co.

I. J. MATTHEWS.

## BORDEAUX MIXTURE FOR GRAPES AND POTATOES.

During the past year or two, grape growers have met with serious losses from black-rot and mildew, and many thousands of bushels of potatoes have been destroyed by potato "rot" and "blight." All of these troubles are due to fungous diseases, but while they can be readily controlled by spraying with Bordeaux mixture, they cannot be held in check by lime-sulphur solution, which is generally used for spraying fruit trees.

As Bordeaux mixture will be used upon thousands of acres of grapes and potatoes, a few words of caution will be helpful at this time.



## More Wheat Per Acre

We cannot control the price of a bushel of wheat, because too many countries raise wheat. But we can increase the profit from an acre of wheat by reducing the cost of production per bushel. There is not much profit in 13 bushels of wheat per acre, which is the American average. There is good money in yields of 25 to 35 bushels. These can be obtained, if one prepares the land right, uses good seed and good fertilization.

## POTASH

Good fertilization means enough fertilizer of the right kind. With a good rotation 400 to 600 pounds per acre is enough, provided a reasonably high-grade formula such as 2-8-6 or 0-10-6 is used. The low-grade 1-7-1, 2-8-2 and 0-10-2 formulas are out of date and out of balance, and the plant food in them costs too much per unit. Urge your dealer to carry high-grade formulas or if he is stocked up with low-grade stuff get him to buy some potash salts with which to bring up the potash content to a high grade. One bag of muriate of potash added to a ton of fertilizer will do it.

If you prefer real bone or basic slag in place of acid phosphate try 300 to 400 pounds per acre of a mixture of 1600 pounds of either with 400 pounds of muriate of potash. You will find that **Potash Pays**.

These high-potash mixtures produce better wheat, clover, heavy grain and stiff straw.

We sell Potash salts in any quantity from 200 pounds up. If your dealer will not get potash for you, write us for prices and for our FREE booklet on Fall fertilizers.

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First, in preparing it do not fail to dilute the ingredients before they are put together. Thus, four pounds of copper sulphate and four or five pounds of lime are used to make 50 gallons of Bordeaux mixture. The copper sulphate should be dissolved and diluted to 25 gallons, and after the lime has been slaked it also should be diluted to 25 gallons, and the two solutions should then be poured together, stirring vigorously at the same time.

If this mixture is thoroughly applied from three to five times, at intervals of two weeks, beginning when the potato plants are eight inches high, and when the blossom clusters on the grapes first show, the various fungi can be held in check. It will generally be advisable to add two to three pounds of arsenate of lead to each 50 gallons for the first two applications, to destroy chewing insects.

The second point is, that Bordeaux mixture must be freshly prepared, as, if it is allowed to stand for a day or two, its efficacy is practically destroyed. While stock solutions of the ingredients may be kept for considerable periods, they should not be put together until they are to be applied.

For this reason, although the commercial brands on the market may be carefully prepared and of the proper strength, their use cannot be recommended. During the past season vineyards and potato fields upon which they were used suffered severely, while others sprayed with home-made Bordeaux at the same time and in the same manner gave crops practically free from fungous troubles.

L. R. TAFT,

State Insp. of Nurseries and Orchards.

#### CARING FOR THE GARDEN

I was very much interested in J. A. Kaiser's article which appeared in the Michigan Farmer for May 31, 1913, and he has clearly shown that a garden is worth while. Probably there is no spot on the average farm which pays better for the time and money invested in it than the garden. Probably there is no spot on the average farm which is more generally neglected than the garden, and still this spot, when properly cared for, proves a source of profit and pride. But in order to realize the greatest returns from the truck patch, there are two main points which should be kept in mind when caring for it.

#### Plant Food and Moisture Limit the Crop.

The limiting factors in growing a garden are plant food, moisture and temperature. These are of equal importance but one readily sees that we can not control the last factor. To a slight degree, the temperature of the garden spot may be controlled by the application of barnyard manure. Very early this spring corn was planted on a little spot near the Michigan College and it has attained a very good growth. Now under ordinary conditions this corn would not have grown at all but this spot had been heavily manured and this controlled the temperature of the soil to an extent that the corn grew very vigorously. With the factors of plant food and moisture we can exercise a greater control than over any other physical factors. The care of the ground in the garden will not control the plant food contained in the soil only to a very limited extent.

#### Kill Weeds Young—They Steal Water and Plant Food.

In regard to plant food, the gardener can only strive to make all of it available to the growing seedlings. We should keep the weeds from using up any of the plant food. The only food materials to which they are entitled to in our consideration is that which they have previously used in maturing their seed and if we are wise we will allow them to spend this in the growth of their young seedlings but when the weed seedlings call on the surrounding soil for food, then it is time to destroy them.

The best time to kill a weed is shortly after it has started to grow and when the young weed has spent the stored up food which was in the seed. If the plant is disturbed at this time, it dies very quickly and is of no more annoyance. A slight disturbance of the young growing roots throws the root hairs out of balance and the plant soon dies because there are so few root hairs and they are all needed in order for the plant to make a continuous growth. This injury to the root hairs soon starves the plant and kills it. It is very important that these weeds be killed before they have taken very much of the plant food from the soil and have made much of a growth, for the larger they are before they are killed, the more

food they have taken from the soil. Even if the dead weeds are left on the garden they will not decay sufficiently in a single season to furnish the young seedlings of the garden plants with any of the food materials which they have taken from the soil, and so the growing plants are deprived of a possible source of food.

Moreover, the loss of plant food which the weed takes from the garden soil is not such a serious menace to the growing truck as is the loss of water which the plants take up and which is very readily evaporated from the leaves when they are exposed to the drying effects of the atmosphere. This is an enormous loss for just as soon as a weed has attained sufficient growth to expose some of its leaves then what botanists call "transpiration" is continually going on. That is, water is continually being taken in by the root hairs of the plant, passes up through the stem and is evaporated from the leaves. In this way the weed is instrumental in assisting a great amount of water to pass from the soil to the atmosphere which might profitably be kept in the soil.

#### Have a Continuous Soil Mulch.

I have a small garden which helps very materially towards lessening the expenses of the table and I had this garden plowed early and thoroughly harrowed. It was raked free of stones and large clods of earth and the early crops, such as onions, lettuce and radishes were planted early. Since then I have been planting other truck at intervals so as to have lettuce, radishes, peas, and beans continuous throughout the season. This last is merely an item which I did not intend to mention in this discussion but the point I wish to make is that only a very small portion of the garden was planted as soon as the ground was plowed but after each rain and when the ground was dry enough so the soil would not puddle, I have gone and raked the garden over with a garden rake, thus destroying the young weeds and creating a soil mulch. The different rakings did not take more than an hour each and the results have already been very noticeable at this early date. At different times I have planted other seeds and now when hoeing it is very easy to notice the absence of weeds and greater growths of the truck which was planted on those portions of the garden which were raked over two or three times before planting.

The successive rakings seem to make the soil more moist, which is evidenced by the rapid growth of the seeds and absence of weeds. The last batch of seeds which I sowed are well up and there is hardly a weed to be seen. So I am thoroughly convinced that this early care of the garden will prove a great labor saver during the coming summer because not much hoeing will have to be done and I find it much easier to kill weeds with the rake before the garden stuff is planted than to try to kill them by hoeing between narrow rows of plants after the crops are in.

The early care of the garden, probably more than any other factor, answers the question of what the harvest will be and whether the garden will prove profitable or not. Kill the weeds—this saves plant food and moisture. Keep a soil mulch—this prevents losses of moisture and kills weeds. With the observance of these two rules and with sufficient heat, any garden in Michigan will be a great help to the family, provided it has been judiciously planted.

In this connection, I wish to state that I am keeping a strict expense and cost of production account with this garden and next fall, after all the truck has been harvested, I will make known through these columns the exact amount of profit or loss.

I. J. MATHEWS.

#### BOOK NOTICES.

"Sheep Farming in North America," by the late John A. Craig, Professor of Animal Husbandry at the University of Wisconsin and Iowa State College and Director of Texas and Oklahoma Experiment Stations, is a book of 300 pages, size 5x7, fully covering every phase of sheep farming and containing many illustrations showing desirable types of the different breeds. In addition to full details with regard to the care of sheep is also a chapter on diseases. Published by the MacMillan Company, of New York, price, \$1.50 net.

"Horse, Truck and Tractor," a book on the coming of cheaper power for city and farm, by Herbert N. Casson, Rollin W. Hutchinson, Jr., and L. W. Ellis, contains 200 pages 5½x8½ inches, and numerous half-tone illustrations of trucks and tractors adapted to many different uses. Comparative figures are given as to the expense in the use of horses and trucks or horses and tractors in the various uses to which these are adapted. Published by F. G. Browne & Co., Chicago, Ill. Price, \$1.50 net, \$1.64 postpaid.

## Grange.

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

#### THE JULY PROGRAMS.

##### State Lecturer's Suggestions for First Meeting.

Song, "Hail to the Harvest," No. 124, Grange Melodies.  
A new machine that interests me.  
Recitation.  
Common inconveniences about farm homes.  
Song, "Lightly Laugh and Gaily Sing," No. 180, Grange Melodies.  
A rural co-operative laundry.  
Reading, "Consumer—Producer."  
What qualifications should a rural school teacher have? Discussion.  
Roll call responded to by each member giving his experience with or observation of parcel post, or suggestion on its improvement.

##### Suggestions for Second Meeting.

Song, selected by Ceres.  
Review of one number of National Grange Monthly, by Secretary.  
Reading or declamation, "The country boy's creed."  
We have contests for blue ribbon corn, pigs and cattle—why not for "better babies?"  
Song, selected by Flora.  
What could the authorities of our nearest town or village do to make the town more attractive, or more convenient, or of more financial advantage to country people who trade there? Discussion.  
Are the town people or the farmers to blame for the late hours the stores are kept open on Saturday nights?  
"Chip basket," prepared by Woman's Work committee.  
Song, selected by Lady Assistant Steward.

#### GOGEBIC'S NEW POMONA.

For several years Gogebic county, at the western extremity of the upper peninsula, has boasted the largest subordinate Grange in the state. That Grange, too, known as Ironwood No. 1300, has been the only subordinate in the county for nearly six years, it having been organized by Deputy John Wilde about six years ago. It now claims a membership in the neighborhood of 500, and early in the present year Deputy Wilde returned to the county and organized subordinates at Montpelier, Bessemer, Wakefield and Watersmeet. He then completed the organization of the county by bringing about the formation of a Pomona Grange. Bro. Wilde has always emphasized the two Grange principles of giving the young people a working interest in Grange affairs and of having the sisters share the honors and responsibilities of office. In the new Pomona practically all of the officers are young people and the three principal officers are women. In the accompanying photo-engraving are pictured, reading from left to right, the Pomona's secretary, Tynne Nilkula; master, Minnie Vanderhaegen, and lecturer, Hilda Mars. The remainder of the officers of this new Pomona are: Overseer, N. D. Murphy; steward, M. Krall, assistant steward, Will Karding; lady assistant steward, Emma Lahti; chaplain, Mrs. M. L. Kane; treasurer, M. L. Kane; gate keeper, Hjalmar Randa; Ceres, Josephine Roberts; Pomona, Mrs. P. Donovan; Flora, Mrs. J. McGrath.

A Grange Ladies' Aid Society was organized by the sisters of North Kalamo Grange, of Eaton county, last week, the purpose being to raise money for building a new Grange hall. The society's officers are: President, Mrs. William Brundage; vice-president, Mrs. Seymour Hartwell; secretary, Mrs. Alfred Baxter; treasurer, Mrs. C. N. Leedy.

To Declare Offices Vacant.—Marion Center Grange, of Charlevoix county, at its last meeting adopted a resolution declaring that where any officer of the Grange is absent three successive meetings his office shall be deemed vacant and the vacancy shall be filled by appointment of the master. The Grange will give special attention to alfalfa at its next meeting.

#### COMING EVENTS.

##### Pomona Meetings.

Shiawassee Co., with Center Grange at the farm home of Mrs. Julia H. Henderson, Friday, June 20.  
Genesee and Lapeer Co.'s (joint meeting), at Thread Lake park, Flint, Friday, June 20. Picnic dinner.  
Eaton Co., with Northwest Walton Grange, Saturday, June 21.

## Farmers' Clubs

#### CLUB DISCUSSIONS.

Will Hold Basket Picnic in August.—The Rives and East Tompkins Farmers' Club met at the home of Mr. and Mrs. Frank Stringham, Sr., Saturday, June 7. Over 50 were present. The meeting was opened by singing "Pass Me Not," by the Club, followed by prayer by Rev. M. Andrews. It was decided to hold our August meeting at Pleasant Lake and to have a good old-fashioned basket dinner. A good literary and musical program was rendered. The program was concluded by a question box which brought forth many discussions.—Ina Stringham, Cor. Sec.

Beautify the Home Grounds.—The Thornapple Farmers' Club met June 5 at the home of Mr. and Mrs. Allan Pender. An interesting literary program had been arranged and an enjoyable supper was served at the close of the exercises. The topic for discussion was, "Beautifying our Farm Homes." The discussion was informal, all agreeing that a neatly kept lawn, a few nice shrubs and shade trees, added much to the looks of any farm. A few dollars expended for paint, often transforms an old shabby looking house into a nice "homey" looking residence. The roadside should be as free from weeds as the meadow, and under no circumstances should old tools—or new ones—be left lying about. A neat wire fence around the lawn would not detract from the looks, and would keep chickens from running around the door. No piles of old boards or rubbish should be tolerated around the barns, nor weeds be allowed to grow along the fences. Not only does it pay a farmer in dollars and cents when he beautifies and makes attractive his home, but it is a duty that he owes to his family.—Cor. Sec.

A Prosperous Club Season.—The Howell Farmers' Club has been gaining strength, interest and benefits. Being one of the few Clubs that do not meet for dinner, its results for social betterment and educational benefits cannot be estimated. At its annual meeting a banquet is held, this year the committee decided for less work for the ladies and it was



held at the Hotel Livingston in the village and several new members were added to the list. The April meeting was given over to the suffrage question. The anti's secured Miss Price, but on account of fixed dates she could not be present. In her place was sent Attorney A. B. Hall, of Detroit, Rev. Brooke, of the Presbyterian church, speaking on the suffrage side. The May meeting was also a very successful one, being given over to the discussion of the Farmers' Credit System and current events. The June meeting was held at the home of the president, A. M. Wells, in the village. Roll call was responded to by quotations and an excellent program of music, recitations and readings was given. The question box contained several numbers. Those of special interest were: "Is the philosophy of Henry George preferable to that of Karl Marx?" assigned to President Wells. Some did not favor either, while some thought that by these two men will be settled the land, labor and wealth questions. The California alien land laws were again up for discussion. Also the Roosevelt-Newett case in which all who discussed it thought Roosevelt justified. "Will future generations commend or condemn the business methods of Rockefeller and Morgan?" The ladies who discussed this question thought they might, while Mr. Wells believed the future generations would see more equal distribution of wealth. After the program committee and question committee were appointed, the Club adjourned to meet with Mr. and Mrs. Silas Munsell for the August meeting.—Mrs. Joseph S. Brown, Cor. Sec.



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### You Will Be Proud, Too.

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When the Detroit first appeared two years ago, manufacturers everywhere said we couldn't build the car for the price. They didn't take into consideration that the very quality of this car made the sale of it so easy that our sales expense per car is next to nothing. When you buy a Detroit you pay no heavy "selling overhead," just as you pay the lowest "factory overhead." Our net profit per car is less than many manufacturers expend in "selling overhead" alone. And so we did it—although the manufacturers said we couldn't.

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