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Bee-Keeping for the General Farmer

By F. E. MILLEN, State Inspector of Apiaries

ON the majority of farms, bees occupy but a small part in the work and profits of the farmer. The bees are usually relegated to some out of the way location where weeds and other things grow up and shut them from view, and when out of sight the attention they receive is negligible.

A few colonies of bees, say five, require but little work, not more than a few days throughout the entire season and this work could easily be split up so that only an hour or two need be given them at any one time during the busy months when other farm work is rushed.

All the supplies necessary for the increase, in swarms, and the storing of surplus honey can be prepared in late winter or early spring, so that when needed there is no delay. If farmers, and many that are not farmers, who keep bees, would prepare their supplies in the early spring they would be surprised at the small amount of work necessary to return more than a fair profit on their labor from a few colonies of bees.

Honey is one of the purest sweets that nature supplies, unadulterated, and free for the harvesting. Children almost always prefer honey to butter or preserves and nature's sweet seems to agree with them without exception. Honey should be found on all rural tables during the fall and winter months and if eaten moderately becomes almost a necessity.

The aim of this article is not to make bee-keepers where there is neither inclination or interest, there are far too many people keeping bees today who would be better off if they disposed of their bees entirely. Bee-keeping is one of those peculiar agricultural industries that requires special qualities before one can be a successful beekeeper. Patience and observation with one hundred per cent of interest are needed all the time. Remember, too, that you cannot learn all there is to know of the management and care of bees in one or two seasons. Men have spent years at the work and still find there are new methods and shorter cuts that help make for greater success. While it takes years to learn the finer points of management, anyone with one colony of bees can soon become master of the main fundamentals and with these as a foundation, one can attain more knowledge as time passes.

We all know that white and alsike clovers are usually good honey yielders, yet the knowledge will avail us little, if, when we see clovers in blos-

som, we neglect to put on supers for the bees to store honey in. Probably the reader might doubt me when I say that about 25 per cent of the colonies of bees in the hands of farmers never see a super all season. Bees are among the most wonderful of all our insects, but they must have a chance to show what they can do. Give them a square deal and they will surprise you with their toil.

Location of the Apiary.
Before placing the bees outside, in the spring, carefully choose a location that is suitable and at the same time conveniently situated near the building in which the bee supplies are kept. I always like to see bees kept in the open or but partially shaded, each hive on its own stand, and far enough apart so that one can get all around and examine the colony from any angle and yet not disturb the next colony.

If the colonies are kept in the open, without natural shade, then during the warmest part of the summer, shade boards should be supplied. These can be made from shingles or barrel staves; also give plenty of ventilation at the entrances. Avoid placing the hives so near together that when you examine one colony, the colonies on either side are also disturbed. Never keep the colonies under a low shed during the summer, so that you have to bend double to get to them and even then cannot examine them properly. It is colonies that are kept under such conditions that are usually so vicious that they seem to be possessed. If you put your bees in such a shelter for the winter move them out in the spring, so that they

are in the open, you will be surprised how much more pleasant it is to handle them in the new position.

In placing the hives on their summer stands, be sure they are level from side to side, and a trifle lower at the front than at the back, so that water or excess of moisture will drain away from the entrances.

Necessities for a Farmer Bee-keeper.

Oftentimes when visiting a small bee-keeper, we are told that the bees will sting us badly if we attempt to examine them. The reason bees get cross is almost always due to the bee-keeper and his method of handling.

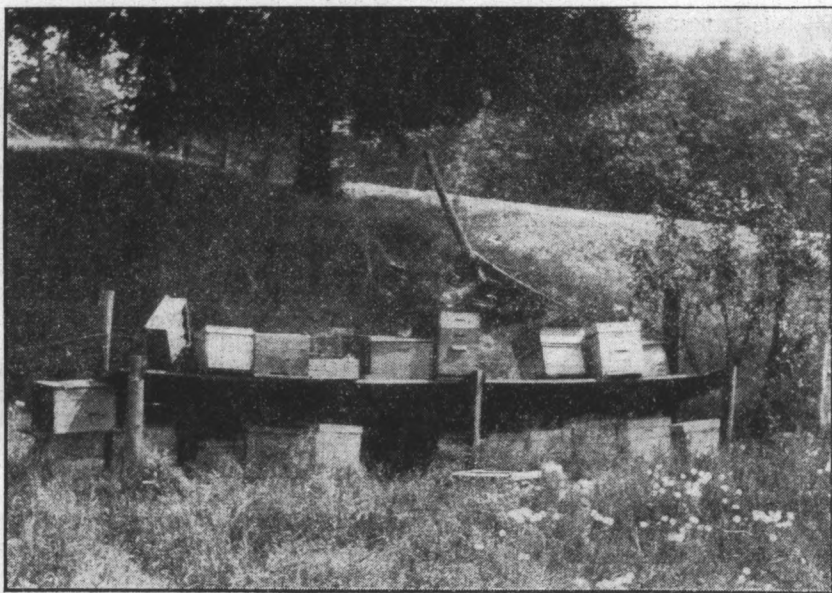
Of course, we know bees are more liable to be cross directly after the close of a honey flow, and on very dull and rainy days, knowing this we can leave them alone at such times.

Some bees we find are vicious at any time, and with these it is usually a question of bad handling. Avoid the mistakes mentioned under "Location of the Apiary," then before beginning an examination of the bees, have your smoker filled and emitting a dense smoke. Gunny sack, rotten wood, shavings, dry hard wood, excelsior, cedar bark, or chips are among some of the substances that will answer well. Once the smoker is well alight, chips of dry hard wood will last a long time. A hot smoke is not needed, a dense white smoke is not so harmful to the bees and at the same time it makes them fill themselves with honey more quickly. This is the reason we use the smoker, so smoke the bees just sufficiently to make them run for the honey.

Besides the smoker, a good bee veil, always with black net face, and some kind of a hive tool are necessary. With these three articles one can manipulate any movable frame hive with some amount of confidence.

One other point so noticeable among the smaller bee-keepers is that

there is a lack of uniformity in the hives and bee supplies they use. The hives will be of various shapes and sizes and the supers of other sizes. If there is any one thing that causes trouble it is this lack of uniformity. The bee-keeper can never be sure whether a certain super will fit a certain hive body; the result is confusion, loss of time, and when supers fit badly robbing is often commenced. Always choose a good standard make of hive, one that you can easily get supplies for, and then discard all others. You will know then at all times that whatever you are using can be used anywhere in the apiary (Continued on p. 646).



Do Not Keep Bees Under Low Sheds, Move in Spring, Place Farther Apart.



A Bee Yard that is Pleasant to Look at, Neatness and Order show a Careful Bee-keeper.

The Michigan Farmer

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DETROIT JUNE 5, 1915.

CURRENT COMMENT.

Postal Savings Bank. An important change in postal savings bank regulations has been announced by Postmaster General Burleson to go into effect July 1. This announcement relates to an extension of the service through permitting persons living in communities not adjacent to a postal savings bank to open accounts by mail. This plan was worked out by Governor Dockery, third assistant postmaster-general, who has direct supervision of postal savings, and who was so impressed by appeals from all over the country for the inauguration of a plan of this kind that the announced change was worked out upon a feasible basis.

Under the plan adopted an intending depositor residing where there is no regularly designated postal savings bank may apply to his local postmaster who will attend to the preparation of necessary identification data and forward same to a nearby postoffice authorized to accept deposits. The patron may then forward his deposits by money order or registered mail to the postmaster at the banking point where receipts and certificates will be issued for same. Withdrawals of any part or all of his savings account, together with such interest as may be due may be made by mail on demand. Under the new regulations any person ten years or over may open an account in his or her own name; an account may be opened by a married woman free from the control or interference of her husband, and postoffice officials are forbidden to disclose to any person except the depositor the amount of any deposit made. A leaflet printed in English and also in many foreign languages and explaining all details of the modified postal banking plan may be obtained of any postmaster before the change goes into effect.

In this connection the growth of the postal savings business during the past year is of interest. According to a circular just issued by the postoffice department, there was a net gain in deposits during the eight months prior to April 1, of \$19,000,000 as against \$8,000,000 for the same months the year before. More than 500,000 depositors now have accounts in the postal savings system, and among them are represented every nationality and almost every known occupation. The majority of the depositors however, are wage earners, and of this class the foreign born wage earners predominate. The census of depositors taken by the postoffice department shows that approximately forty per cent, or 200,000 of the depositors in the system are foreign born citizens and that

this class own more than fifty per cent of the total deposits.

It will thus appear that thousands of accounts have been opened and millions of dollars deposited which have brought to light hidden savings and turned same back into the channels of legitimate trade at a time when there was more than ordinary demand for every dollar of available currency.

National Dairy Council. A meeting of the organized life associated with dairying was recently held in Chicago for the purpose of bringing about a closer affiliation between those engaged in the various dairy pursuits for the better promotion and protection of the whole dairy industry. The result of this meeting was the organization of the National Dairy Council. The officers elected for the ensuing year were: President, Dr. H. B. Favill; vice-president, H. O. Alexander; secretary, W. E. Skinner; treasurer, R. A. Woodhull. A board of directors were elected to represent the various dairy interests affiliated in this organization, viz: dairymen, milk dealers, cattle associations, the ice cream industry, butter industry, cheese industry, machinery industry, and one director at large who was also elected president of the organization.

The object of the organization as set forth in its constitution is "to advance the cause of dairying in America by promoting the dairy cow and all interests dependent upon her through co-operation and united effort." Realizing that the whole problem of dairying from the farmer's standpoint is quality with quantity for better profit, and to the end that this desirable result may be promoted, a campaign to replace unprofitable cows with those of better breeding is to be pushed by this council. The membership of the council is limited only to those engaged in any character of business related in any manner with the dairy cow; the membership and support is purely voluntary.

This organization is the natural outgrowth of the round table conference idea worked out during the National Dairy show for 1913. This first round table conference was attended by delegates from thirty industrial and educational branches of dairy activity. From this conference was evolved an organization to meet each year at the Dairy Show and called the Council of the National Dairy Show. While this council has served a more or less useful existence, the important economic problems which have confronted the dairymen during the past year, such as the ravages of the foot-and-mouth disease, the European war, etc., have induced those interested in the movement in the re-organization of the council along broader lines as above indicated. Organization is always beneficial to the industry affected where all interests connected therewith work together for the common good, and this organization should be no exception to the rule.

Preparing for Future Improvements. When one is building new buildings upon the farm or remodeling old buildings, it is a wise plan to figure on possible future development and provide for same so far as it is practical and economical. For illustration, if one is building or remodeling a house it is a wise plan to figure on future convenience in heating and lighting same. Perhaps the builder may not feel able to at once equip his house with a furnace, but this is no excuse for not carefully studying the heating proposition before the house is built or remodeled, to the end that provision may be made for the cheap and satisfactory installation of a heating plant at some later date. If a regulation hot air furnace is to be used it will pay to install hot air flues while the construction work

is going on, because it can be done so much more cheaply and much more satisfactorily than at any future time. Whatever kind of heating plant is contemplated, the chimneys should be so built as to facilitate the installation of such a plant without subsequent alterations. Further than this it will be difficult to go in making plans along this line for the future, unless the builder has studied the heating proposition and decided on the type of heating plant which he desires to install.

If such a study has not been made by the man who is engaged in building or remodeling his buildings or who contemplates such a task in the near future, it would be well to secure literature from the manufacturers of the various types of furnaces from the standard hot air furnace and the so-called pipeless hot air furnace, to the hot water and steam plants, studying the question with a view of determining the adaptability and advantages of these several types of heating plants and the particular heating problem involved. Such a study will enable intelligent preparation for the future installation of a modern heating plant at a minimum of cost.

Likewise it will be profitable to wire houses which are being constructed or rebuilt for the future installation of electric lights. It is true that electric current is not now available upon many farms, but there is no doubt that in the not distant future it will be available upon the great majority of farms in Michigan. The cost of preparing for its use when building or repairing old buildings will be much less than will such an installation after the building has been completed. Many other similar illustrations might be given as to how a little time and thought devoted to the problem of preparing for future developments will prove a wise investment for every farmer.

BEWARE OF THIS FAKER.

A person signing his name at times, Geo. D. Barnes, Geo. Barnes, E. C. Earl, and G. D. Davis, has been taking subscriptions for the Michigan Farmer and offering in combination with it, Today, McCall's Magazine, and other papers—is a fake. He does not turn in to the office the orders he takes but keeps the money. We know nothing about them until we get a complaint from the victim.

He is described as being about five feet ten inches in height, American in appearance, and weighing about 140 pounds. At first he used one of our receipt books, (evidently stolen from some Michigan Farmer agent); later he used receipts of his own.

He tells different stories about having been in our office, working outside for his health, on his vacation, working to get money to go to school, etc. Any person having given him their order can have him arrested and sent to jail, or he might be held on suspicion and searched.

Do not subscribe for the Michigan Farmer if it is offered at less than the regular price, or if premiums or other papers of any kind are offered with it at the subscription price or lower, unless you know the solicitor.

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for \$1.00, or sent free for a club of three subscribers at 50 cents each.

Send all orders to the Michigan Farmer, Detroit, Mich.

HAPPENINGS OF THE WEEK.

Foreign.

The European War.—The general situation has changed but little from last week. In the western war zone violent fighting continues between Arras and the Belgian coast. Neither side appears to have made any material advance. In northern France the French forces have been active and at a few points they forced the Germans back small distances. Everything appears to be quiet in the northern portion of the battle front between Germany and Russia. However, in Galicia the Austro-German troops have been active and are forcing the Russians back so as to threaten Premysl, the city captured by the Russians late in the winter after a long siege. To the south the Italians have thrown their troops across the frontier into Austria and captured several small places. The battleships and land forces are still working to rout the Turks from along the Dardanelles with more or less success. However, the British have suffered the loss of two battleships, they having been torpedoed while bombarding the forts along the coast and covering the landing of additional troops. During the week German aviators raided Southend, a port on the lower Thames while French aviators succeeded in destroying a huge chemical plant at Ludwigshafen on the Rhine. Two more steamers, one British and one Danish have succumbed to the German submarine blockade of the British Isles.

Because of friction with Winston Spencer Churchill of the British ministry, Admiral Fisher has resigned his office as first sea lord of the admiralty. Admiral Jackson, former chief of the war staff and commander-in-chief of the Mediterranean has been appointed to fill the vacancy.

President Manuel DeArriga, of Portugal, has announced to the Portuguese congress his determination to resign his office. The congress is now considering the political situation, both as to the president's resignation and the recent revolution.

Military officers in command of the seventh district of Ontario have issued an order to saloon keepers prohibiting the sale of intoxicating liquors to soldiers except between noon and 8:30 o'clock in the evening.

The army of Gen. Villa appears to be between two Mexican armies of opposing political faith on the north and another on the south. Food sent from the United States to relieve sufferers in Mexico city is claimed to have been confiscated by troops of the warring factions.

National.

A conference between delegates of the different countries of the western hemisphere has just been held at Washington. The purpose of the congress was to open the way for closer commercial relations between the several countries represented. Not only were matters of credit discussed but the advantages and possibilities of establishing steamship lines between different ports of North and South America was given special attention.

It was early reported that the American boat Nebraskan was torpedoed by a German submarine shortly after it left Great Britain for America. Later reports indicate that the vessel may have struck a mine. The matter is being inquired into by the government at Washington.

A disclosure has been made through the use of X-rays in examining cotton bales and resin barrels, of a well laid conspiracy to defraud the United States by false manifests on shipments of rubber to Germany. A grand jury has indicted a lieutenant of the German army and other men of the fraud.

A bulletin published by the Michigan station asserts that 75 per cent of the field beans grown in this country come from the farms of Michigan.

It is estimated that hog cholera has cost Michigan farmers the present year fully \$1,000,000. An effort is being put forth in St. Joseph, Kalamazoo and Branch counties to eradicate the disease. Branch is reported as having made considerable progress already.

Three hundred and thirty-two persons were killed and 2,584 others injured on railroads in Michigan during 1914. There was a total of 2,383 railroad accidents reported for that year.

The reports of underwriters state that fire losses in the United States for 1914 amounted to \$221,000,000. This sum has been exceeded only twice, the totals of both 1904 and 1906 being greater.

The Illinois legislature defeated a bill limiting the work day of women to nine hours.

Potatoes and Their Culture

ONE of the most important considerations in growing potatoes is the soil. A loam or a sand loam is what we need for potatoes and it needs to be well drained and well supplied with organic matter, such as clover turned down. Clay was never intended for potatoes and when grown on such soil they will fall short in yield, in quality, and in shape. But potatoes grown on a sand loam will be bright and clean and of a desirable shape, which is a point worth considering, for they will have to be put on the market.

The average yield of potatoes for Michigan is 100 bushels per acre. From this it will be seen that some farmers grow more than the average and some less. The man who does not want to be one of the farmers who are keeping the Michigan average down must know something about the crop and its requirements; he must be interested in it; he must give it a show; he must feed the soil so that the soil can feed the crop; he must plan to give the growing plants all the moisture he can, which can to a great extent be done by preparing early. My plan is, as soon as seeding is done, to cover the ground with manure, if this has not already been done, then plow, harrow once then roll, then work at intervals while preparing for other crops.

Right here I will say that where the manure was put on with a spreader the yield was better than where it was put on with wagons last year. Too much manure causes blight, when the weather conditions are not the best. Some farmers are indifferent as to the time of plowing and think that any time will do, and that as long as they get them in ground nature will do the rest. But this is not so; you will have to co-operate with nature to raise Michigan's average yield. Plow early—I have tried it both ways in my short experience and found that late plowing is next door to failure, because the potatoes on late plowing are a long time coming up with a little or no moisture to aid them; results—a poor stand, sickly plants, yield 50 bushels per acre. Ground plowed early, will have moisture to start the young plants; manure and clover has passed through the heating stage and is ready for plant food; results—an even stand, healthy plants, yield 150 bushels per acre, average yield 100 bushels.

But you may say that the 1914 crop was so large that the price paid was below cost of production, wage paid and rent of land considered, and we will all agree that it is low. But if the man that grows 150 bushels per acre is playing a losing game, what about the man that grows 50 bushels per acre? If you can furnish enough manure to cover the ground it is better plowed in the fall.

Seed is Important.

Your potato seed is the next in importance. If you have not got good seed, better try and get it, for without it you are handicapped. Color and shape are two important things. Hill selection is a good way but it never appealed to me very strong. I think a better way is to select 100 or 500 potatoes that measure to your ideal for seed and plant each potato in four hills so that each four hills can be dug and weighed separately, retaining the best hills by weight. It has been proven time after time that whole potatoes will give better yields than cut seed, but when seed is high the increased yield is not sufficient to pay for the extra seed. But when seed is cheap, use plenty of it.

Potato scab can be controlled by soaking the seed in half a pint of formalin to 30 gallons of water for two hours. (One pint to 30 gallons is generally recommended.—Eds). Blight is another disease of the potato that

caused considerable damage last year in different localities, and it can be controlled by spraying with Bordeaux mixture three or four times during the growing season and at little expense. Experiment stations estimate that 80 cents per acre will spray them. This includes time and material. As an illustration, blight attacked one of my fields (six acres) which was not sprayed and the yield was shortened 200 bushels at a low estimate lost. At 26 cents per bushel this was a loss of \$52. The cost of four sprayings at 80 cents an acre would have been \$3.20, or \$19.20 for the six acres. With interest on investment and depreciation of sprayer added, the total cost of spraying the six acres would have been \$26.40. This would have resulted in a saving of \$25.60 with potatoes at a low price. So it is plain that it is a business proposition just as much as rodding your buildings against lightning and we will have to come to this part of the business just as the orchardist did who is after the whole crop and not a percentage of it.

Some may think my illustrations are not fair, that blight is not present every season. Neither does lightning strike your buildings every year, for which you have already paid for rodding besides paying insurance for their protection. Why not insure our potatoes against this disease? The experiment stations claim that even when there is no blight present, the yield is better when sprayed; the application in some way stimulates the plants and they are more free from sun scald.

Fertilization and Culture.

As to fertilizer for potatoes, I have not had much experience with it, but it is highly recommended by many successful potato growers, even in large quantities of a 4:7:10 analysis of which 500 lbs. is drilled before planting and 200 lbs. in the row. But it should not be overlooked that no chemical fertilizers will take the place of humus, or decayed organic matter in the soil.

Time of planting is from June 1 to 20; the first for quality and the last for quantity.

The marketing problem is a "horse race," but I think that the man that is near the market and with available help is a winner if he can get a fair price to sell from the field.

An Outlet for Surplus Tubers is Needed.

I am not holding out any argument that potatoes are a get-rich-quick crop but I will make the assertion that they are one of the best cash crops that are grown on our Michigan farms. And we might learn a lesson from Germany where the whole crop is not used for human food; where there are several thousand factories where they take out the fuel alcohol and the rest of the potato goes into stock food, and where they also have starch factories and many other ways of using the tubers as raw material.

I think that the Michigan Potato Association whose one cry is "make two bushels grow where one grew before," would do well to find an outlet for our surplus potatoes the same as Germany has done, instead of urging a policy which means producing below cost. But for this same reason there will be fewer acres of potatoes grown this year and beans and wheat seem to be the favorites. It will be good judgment on the part of the owner of good potato soil to maintain his acreage of potatoes in prospect of better prices next digging time. The general farmer should not let his plans be upset by the allurements of the high value of a single crop and should remember that potato growing is a business and that nothing was ever achieved in any line without an extra effort.

Tuscola Co. STANLEY STOKES.

LILLIE FARMSTEAD NOTES.

Preparing for the Spring Crops.

Too often we plant corn and beans and other intertillage crops too soon after the land is plowed. Let me state the proposition in another way. We do not take sufficient time in preparing the land after it is plowed, before we plant the crops. Stated another way, we do not give the weeds sufficient opportunity to germinate so they can be destroyed before these intertillage crops are planted. The result is that the weeds usually have the same chance as the crop, and they generally beat the crop in germination and early growth and after the crop of corn or beans, etc., is planted it costs more than double to destroy these weeds.

In fact, if weeds get into the hill or row early, nothing but hard hoeing will subdue them and as we all know this is too expensive for this day of high wages. So much hard labor takes the profit all out of the proposition.

This hard labor can largely be avoided if we take the time and understand just how to do it. Where one has so much to do that he is behind all the while, letting the work crowd him instead of his crowding the work, it is difficult to do things right. Such conditions will occur with us all sometimes, and then we must do the best we can. But if we are up with the work, get our ground plowed early or have it fall plowed, then we can kill the weeds before we plant the crops and have the crops well on their way before any weeds interfere. In fact, we can subdue the weeds before planting so there will be very few, if any, during the crop growth; and this makes nearly ideal conditions.

Have the land plowed so it can be harrowed every week for three or four weeks before planting and the weed seed will all be brought to the surface, germinate and be exterminated before planting. It is much easier to kill them before planting than after. Besides this system will prepare the land so we are much more apt to get a good crop. The older our soil gets the more tillage is necessary to make the plant food available and put it in good physical condition.

Late Planting.

This year we have been crowding our work, and it is something unusual for us. Many times we are behind. We had corn ground prepared May 10, so we might have planted, but the weather was not favorable and we harrowed this land twice since then and will harrow again before planting. My observation is that corn should not be planted until the soil is warm, so it will germinate at once, and grow. If cold weather delays the growth the corn does not do so well. My judgment is that it will pay to delay a whole week, even if the weather is suitable, and harrow or disk the land once more to destroy another crop of weeds before planting. The corn will develop enough more rapidly to pay. It will be a better crop and mature about as soon as though planted a week or ten days sooner and has to fight weeds all its life.

Cutting Alfalfa.

I am quite certain that we have never cut the first cutting of alfalfa soon enough. It has been necessarily delayed on account of the great amount of work to finish and the result is that the first cutting has been a little woody and did not make as fine quality of hay. Cutting the first crop too late does not give the second cutting a fair show and the result usually is a light cutting. The first cutting should be cut just as soon as one can see the new growth has started at the crown. Usually this is when only a few blossoms are seen on the plants. Don't wait for all the plants to blossom. You are injuring the quality of the hay and shortening the second cutting. Of course, if you haven't got your corn or beans or potatoes planted, then you must choose between

two evils and take the less. This will mean plant the corn, or beans or potatoes as soon as possible and then get at the alfalfa as soon as possible.

Cutting Clover.

Common red clover is usually allowed to get too ripe before cutting. Some give one reason and some another for not cutting it on time. The only reason this is permissible is the lack of labor, and being ready when the crop is ready. All of us find at times that it is impossible to do things just on time. It is a physical impossibility. When such is the case then, as I have said, we can only do the best we can. Thousands of dollars are lost every year because things on the farm can not be done just when they should be done.

Red clover should be cut before any of the heads turn brown. That is when it is in full bloom. Some farmers don't think so, but they are wrong. That is when it makes the best quality of hay. Cut then, you don't have to feed the cows so much grain. They can get the food nutrients from the clover hay. It is more digestible and more palatable. It requires a little more patience to properly cure it but if you can do it it pays and pays well. Besides if you cut it early you stand a much better chance of getting a second growth for seed or another cutting of hay or a green manure crop to plow under. If you have a large acreage begin to cut before all the plants are in full bloom, so you can finish before the crop gets too ripe. Many times we do not give common red clover half a chance. We starve it, to begin with; we ask it to grow in a sour soil and then we cut it so late it does not give satisfactory results. On good land, with a favorable season, red clover is about as sure of producing two crops of hay if cut on time as alfalfa is to produce three cuttings.

COLON C. LILLIE.

FARM NOTES.

Seeding Clover in Corn.

I have seven acres of mixed soil, gravel, clay and sand that I intend to plant to corn. Field is some rolling; soil is somewhat run. Do you think I could get a catch of June clover by sowing in August? Would it pay me to sow to alfalfa or sweet clover? When is the best time to plant late potatoes?

Oakland Co.

W. N.

When soil and weather conditions are right clover or alfalfa can be very successfully seeded in corn. Unless alfalfa has been grown on this land before, clover would be more certain to succeed than would alfalfa. We have seen some very good stands of clover secured in this way, but more failures where the plan was tried. If favorable weather conditions prevail at any time in July, the experiment is worth a trial. It is essential to have sufficient soil moisture to bring the seed up quickly and get the young plants started and an even distribution of moisture which will carry them through successfully until the corn is harvested. No one can foretell these conditions, even when a favorable opportunity comes to sow the seed. The chance for success will be much smaller if the seed is sown later than August 1.

The Best Time to Plant Potatoes.

There can hardly be said to be a best time to plant late potatoes. It is the consensus of opinion among growers that the first half of June is, one year with another, the best time to plant for maximum yields. Some growers plant early to get the benefit of the early market, while others plant still later to avoid the ravages of the potato beetle.

"Try-a-bag" of fertilizer. Our brands are soluble and active, and not only increase yield, but improve quality and hasten maturity. Agents wanted. Address American Agricultural Chemical Co., Cleveland, Cincinnati, Detroit or Baltimore.—Adv.

Efficiency on the Dairy Farm—4

IN applying efficiency methods to the dairy farm and buildings as well as the arrangement of the fields and pastures so as to avoid lost motion and unnecessary hauling one finds an interesting field for study and investigation. Some farms present greater difficulties than others, owing to the size of the fields and the general lay of the land. However, as a general proposition the buildings should be situated as near as possible to the geographical center of the farm and not too far from a public thoroughfare.

Another factor that saves time and annoyance in handling the herd is to have the yards and pastures so arranged that the milking herd and the young stock are kept apart. Young stock thrive better when kept away from the older animals. Dry cows also thrive better and are less liable to be injured when kept in separate pastures and have separate yards to exercise in during the stable season. The running in and out of the barn and crowding through gates and doors with the other stock does them no good, and it requires a lot of extra work to clean up after they have tracked in and out of the barn.

Cow Comfort Necessary for Best Results.

To produce maximum yields of milk the cows must have clean and comfortable stables and an abundance of fresh air and light, and be given all of the exercise within reason. Compli-

is situated so that it can not be drained effectively it is best to pave a portion of it with bricks or concrete. Such a yard will afford the cows a place to stand or lie down on pleasant days. If one has plenty of straw and corn stover a large quantity may be worked into manure by bedding the paved portion of the yard and allowing the cows to spend a few hours outside when the weather is warm and sunshiny. When the straw or stover becomes soiled and damp it should be hauled to the compost heap and clean litter scattered in the yard. Some dairymen feed roughage in the yards and the cattle seem to enjoy spending a few hours outside munching straw and stover which they would throw over the mangers if fed to them in the stable.

Well Arranged Yards Facilitate Work.

The yards should be arranged so as to facilitate handling the herd easily and without danger of injuring the animals. By having the yards subdivided one can turn out two bunches of cattle without having to mix them up and separate them again. The dry stock and young animals may go in and out without annoying the milking herd or injuring themselves. Little things these are, but some lives seem made up of little things, little bothers and aggravations like the ones avoided on the well-planned farm. Chore time can take on an annoying length of time, not because speed is lacking but because efficiency is not there.



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—Farmer Onswon.

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—Farmer Onswon.

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For Maximum Results Other Feed Should Supplement Pasture.

cated buildings that cost thousands of dollars are unnecessary; intelligent stabling is an essential of success. The location of the milk room so as to save time, energy and money is an important item in increasing the efficiency of the men who do the milking. The same thing applies to the numberless details of feeding, cleaning and bedding the cows. The dairy farmer who studies the problem of efficient herd handling will find it possible to effect a big saving in labor charges during the year and derive more pleasure and satisfaction from his work than the thoughtless worker.

Next to clean stables, perhaps, the most important factor in producing clean milk and increasing the efficiency of the labor force is that of keeping the cows in sanitary, well-drained yards. If the cows have to wade through muddy yards and huge heaps of manure while going out to drink and exercise they can not produce clean milk. If there is anything that will disgust a hired man more than sitting down to milk a cow with her belly, udder and teats plastered with mud and manure, it is to have the cow in the next stall give him a healthy wallop across the cheek with a tail that has been dragged through mud and filth in the yards. Is it any wonder that self-respecting hired men refuse to work on dairy farms where such conditions prevail. If the yard

Efficiency means making a given amount of time and effort go farther and accomplish more.

Concrete floors, feeding alleys and standing platforms and iron stanchions come the nearest to meeting the sanitary requirements and permit the light to reach all parts of the stable. The side wall and ceiling should be smooth to prevent dust and dirt from gathering and dropping into the milk utensils and onto the cows. While the efficient dairy cow is the basis of successful dairy farming, she can not do her most efficient work unless she is placed amid comfortable and sanitary surroundings. So many types of stalls and stable equipment are available at the present time that the discriminating dairy farmer should find it comparatively easy to select the types best suited to his stable and pocket-book. Comfort and sanitation for the cows is economy for the dairy farmer. Food Most Important Factor in Getting Results.

Thinking men cannot avoid serious consideration of means to provide an abundance of food for the cows at all times of the year. No one factor contributes more toward maintaining the cows at maximum efficiency throughout the year than even, regular feed-be supplemented during periods of dry ing. Even the best of pastures must weather if enough animals are kept to consume the fresh and sweet herbage

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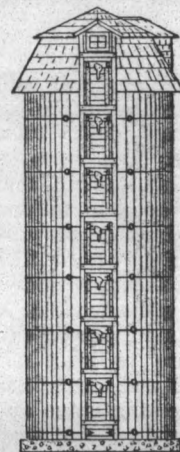
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in the spring and early summer. Of late dairy farmers are depending more and more upon the silo and green soiling crops as a means of avoiding the eccentricities of the weather and the cost of supplying expensive grain feeds.

It is a problem that must be in a large measure worked out according to local conditions of soil and climate. In Connecticut a prominent dairy farmer said to the writer: "Several years ago we tried to grow an acreage of corn sufficient to provide silage for our cows from one harvesting until the next crop comes, but as the demand for our milk increased we added more cows to our herd until the area of tillable land and the size of our silos made it necessary for us to adopt some other means of furnishing feed for the cows, so we hired pasture from our neighbors to help us out for summer feeding in connection with what crops we could grow. This proved unsatisfactory for no matter how large an acreage of pasture we had, the cows would fall away in milk yield and flesh condition, and with all the torment of flies and sun it was pretty hard work to produce enough milk to keep up our contract."

Peas, Oats and Clover for Silage.

"Just about this time we began to study the problem of preserving oats, peas and clover in the silo. We visited a dairyman in an adjoining county and found him feeding his cows a high quality of silage made from oats, peas and clover. It opened up new vistas of possibilities for us and led us to adopt a system that called for growing fewer acres of corn and more of these protein crops. We had been planting from 30 to 35 acres of corn each year for silage and it used up about all of our available land for this crop, and which made it necessary to plant corn after corn for many years, until there was a great decline in acreage production."

"We began in a moderate way, sowing eight acres of corn land with oats, peas and clover, with the result that we grew a fine crop. This was cut and run into the silo, and when we came to feed that silage it settled the matter for all time with us of the great value it possessed as a milk-producing food. The milk records showed it, the cows' appetites showed it and the quick, easy manner of harvesting the crop and getting it where it could be fed cheaply and conveniently showed it. Today we are growing more acres of clover, oats and peas and alfalfa than ever and fewer acres of corn than in years past, and we keep our cows and young stock in better condition and obtain better milk yields than we ever did with the corn silage system alone."

Summer Silage.

Mr. Gene Fahey, a successful dairy farmer of Wyoming county, New York, said: "Considered from every standpoint I find corn silage the cheapest and most efficient means of guarding against dry weather and failing pastures. I am keeping 30 cows, 14 heifers and 40 sheep on my farm of 180 acres. I raise from 40 to 45 acres of corn for silage and grain. With my system of feeding and cropping my farm is gaining in fertility and my corn and hay crops are growing better every year. I have never experimented with other silo or soiling crops to any extent because I can cut, store and feed for soiling purposes or for winter feeding."

In writing this series of articles it has not been my doubt that the average dairy farmer is not capable of keeping pace with the growth of the industry, but often it happens that the development of new phases catches him unawares, and he is face to face with new problems before he realizes the change. He may be master of cows and feedstuffs, and nobody doubts his ability to run with equal success a larger business, but as he branches out, keeps more cows, em-

ploys more labor and buys more chemical plant foods, he must instead of enlarging his business along present lines, develop a new type of organization and adopt better efficiency methods. The dairy farmer, however strong may be his prejudices, can no more escape the laws of efficiency and good business management than he can the laws of gravity, and furthermore his ultimate success depends upon his knowledge and application of these laws.

New York. W. MILTON KELLY.

SUGGESTIONS ON BUILDING CEMENT BLOCK SILOS.

I noticed in your issue of May 8 some questions from H. F., of Huron county, about silo building. I beg to differ with the editor of the Dairy Department in his answer. I have had some experience in silo building and believe there are more cement silos in this vicinity of Montcalm county where I live, than in any other part of the state. I would not build another of anything but cement blocks and would only use the continuous door.

A groove, one by two inches, can be made in the end of the blocks for the door. Take matched lumber and cut to fit door space two feet in width. Put them in as you fill, and as you use the silage, take one out at a time and put away for the next season's use. You will find this much cheaper and handier than the patent door.

For reinforcing I would use No. 0 wire. Use inch gas pipe for the ladder, two and one-half feet long to allow three inches on each end to go in the block. Put one in every other tier of blocks, 16 or 18 inches apart. Put two rows of wire in every other tier of blocks, running wire through the gas pipe. This will make the silo very solid and it can not give.

When the blocks are all laid, plaster well with one part cement to one and a half sand. Then get a barrel of coal tar, and boil down till a little placed on a board will harden. Before the staging is taken down on the inside, begin at the top and put a good coat of tar on while hot, with old brooms, or whitewash brushes.

You will then have a silo that no wind or fire can destroy, providing there is a good solid foundation. I would not advise building one less than 40 or 50 feet high.

Montcalm Co. JAS. EDGAR.

DAIRY ITEMS OF INTEREST.

It is hard to resist the natural temptation to have a round with the cow that kicks, but the best thing to do is to find out why she kicked.

The largest and richest milkers have the most sensitive udders and are also very nervous. Cold hands when beginning to milk, or a sudden fright will cause them to kick, even if they have been raised up with better manners. Kicking or scolding a nervous cow is sure to increase her nervousness and decreases the milk yield considerably. With a young cow, the habit of kicking may sometimes be broken by bathing the udder with hot water.

The best and cheapest way I know of in order to secure good cows, is to raise them.

The increasing demand for cream for family use, ice cream, and among the city restaurants forms a particularly desirable outlet for dairy products.

Being tied up with debts is worse than being tied down with cows. And think of the numerous by-products of dairy farming. If you would like to know the value of skim-milk, just grow a bunch of pigs to maturity on corn alone and then try again with corn and skim-milk. There is a good practical lesson in this for a man who wants to be successful. Try it.

Penn. H. W. SWOPE.



SEEING The Difference BETWEEN THE DE LAVAL AND OTHER Cream Separators

IT DOESN'T TAKE AN EXPERT knowledge of mechanics or a long working test to tell the difference between the De Laval and other cream separators.

ON THE CONTRARY, WITH A 1915 De Laval machine placed beside any other separator the difference is apparent at first sight to the man who never saw a separator before.

IF HE WILL THEN TAKE FIVE minutes to compare the separating bowl construction; the size, material and finish of the working parts, particularly those subject to wear and requiring to be occasionally taken apart and put together; the manner of oiling, and everything which enters into the design and construction of a separator as a simple durable machine, he will still further see the difference.

IF HE WILL GO A STEP FARTHER and turn the cranks of the two machines side by side for half an hour, particularly running milk or water through the bowl, he will see still more difference.

AND IF HE WILL TAKE THE two machines home, as every De Laval agent will be glad to have him do, and run them side by side in practical use, the De Laval one day and the other machine the next, for a couple of weeks, he will see still greater difference in everything that enters into cream separator practicability and usefulness.

THE MAN WHO TAKES EVEN the first step indicated in seeing for himself the difference between the De Laval and other cream separators doesn't put his money into any other machine one time in a thousand.

THE COMPARATIVELY FEW buyers of other separators are those who merely read printed matter claims or listen to the argument of some dealer working for a commission, and who do not think it worth while to see the difference for themselves.

THE WISE BUYER OF A CREAM separator today does see this difference when buying his first separator, while the unwise or careless one usually finds it worth while to do so when he comes to buy a second cream separator a year or two later.

EVERY DE LAVAL AGENT considers it a privilege to show the difference between the De Laval and other separators, and to afford every prospective buyer the opportunity to try out and prove the difference to his own satisfaction, if on first examination he feels the slightest doubt about it.

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Fighting Hog Cholera

I NOTICED an article in a February issue of the Michigan Farmer by Mr. C. D. Lyon, of Ohio, in regard to the way he was advising the handling of hog cholera in his part of the state. Mr. Lyon is eternally right in what he says in regard to importing hogs into a district for feeding, also feeding hogs on distillery slops and garbage. Mr. Lyon's remedy for the disease, in clearing a county of its entire hog crop and keeping hogs out for two years would of course stop the cholera, and also what profit might come from keeping hogs. What we need most is not a remedy as bad in its effect as the disease, but something to stop the disease, also to prevent it, preferably the latter. It would be a hardship on the man who had just succeeded in building up a good breeding herd to dispose of same every time cholera got within hearing; not as bad as to the man with but one or two brood sows it would not make as much difference. Suppose a dairyman was to sell his entire herd every time a case of tuberculosis was found in his herd or near it, and not buy in again for two years; his balance would be on the wrong side of the ledger.

In the matter of cholera, as well as the other diseases, we must practice some method which will allow the farmer, and breeder, to keep his stock and still feel assured that he will not have the results of a year's or more labor swept away from him in a few days.

As to preventatives of cholera, we have the single, or serum alone, treatment, and the serum-virus, or simultaneous treatment; of course, there are a great many "cures" on the market, and the whole bunch of them are not worth consideration.

As to the simultaneous treatment, I am hardly prepared to express any opinion, the past year visiting many herds where it had been used very successfully and other herds not so successfully. Many breeders complain that it renders many of their breeding animals sterile. In fact, one of the oldest breeders in the United States told me a few months ago that he had about as soon take his chance with cholera and have his animals breed, as to be safe from the disease and not breed. Another prominent breeder told me a few weeks ago that he would under no circumstances let his stock go without the simultaneous treatment, as in an extended trial of it he had lost but two runt pigs and his stock bred as good as ever. The general admission is that it will set back, for a time, the younger pigs. I would be pleased if Dr. Giltner would let us hear from him relative to this claim of "non-breeding" of immuned animals.

With past experience and what I have seen, I think I should agree with Mr. Lyon, that a good cleaning up and quarantining would be as good as anything.

Cholera annually causes more loss than the foot-and-mouth disease has, but it has excited no especial comment, outside of the ones who were losers; take, for instance, the season of 1912 with a hog loss in the United States of \$66,439,470.38; if that could have been prevented what a difference it would have made to the producer and the consumer.

Believe the cholera should be handled in about the same manner as the foot-and-mouth disease; a thorough quarantine and disinfection; from past experience would not bother with a sick hog but kill and burn at once. If the state would stand part would say, slaughter entire herd immediately upon outbreak and clean up. If disease was in the neighborhood, use serum treatment on your own herd and do not go to your neighbor's to "see how the cholera looks," if you do you will soon find out.

It has got so the farmer has got to fight for everything he has and this is no exception; no matter how well you care for your herd you are liable to get the disease in your herd and not know how it happened, so "eternal vigilance is the price of the hog," as well as some other things.

New Jersey.

J. W. CLAPP.

CONSTITUTIONAL VIGOR IN LIVE STOCK.

In any class of farm animals a good constitution is the most important feature. It is even more important than type or functional development, for without it these are of little avail, whereas an animal that possesses a strong constitution is almost sure to be capable of at least some degree of usefulness in its particular sphere.

Unless a strain of stock is possessed of a strong constitution it is capable of but limited accomplishments and must sooner or later become scrubby. It will not stand feeding for high development. It will not stand line breeding to fix a type or establish a tendency. It will not suit a great variety of conditions. It will not make the best use of its feed and it will not afford a sufficiently large number of strong individuals from which to select and breed for high development, because the judicious breeder will reject so many animals outright for lack of thrift and stamina, otherwise he might expect to find a large crop of defects, unsoundness, disease and culls among the progeny.

One obstacle in the way of placing adequate emphasis upon constitution is the difficulty of discerning it. It is commonly considered that ample heart girth, allowing liberal room for the vital organs, such as heart, lungs and digestive apparatus, guarantees a good constitution. But it does not, although animals of such build are more liable to prove robust for the common sense reason I have above indicated. While it is an important matter in determining the value of an animal to lay much stress upon these outward indications of constitution it is well

for us to bear in mind that mere size of the vital organs does not in itself insure vigor. Wide, deep-chested animals may have tuberculosis, though they are less prone to it than those of opposite conformation. On the other hand, among horses, cattle, sheep and swine, as well as among men, some of the spare, tough, wiry ones, with but very moderate capacity of trunk, possess a very high degree of vigor and stamina.

A strong constitution is not infallibly indicated by build. It is evidenced most surely by the health, vigor, thrift, breeding results and wearing qualities of the herd. These signs the experienced breeder knows better than anybody else, and it behooves us to observe them closely and to make all possible effort to preserve and increase them, for a good constitution is the chief cornerstone of success in animal husbandry.

Illinois.

W. M. HARDY.

THE FARM FEED MILL.

Would it pay the average farmer on 160 acres of land, keeping four to six milch cows and other young stock, feeding 50 to 60 hogs per year, with other necessary stock, to grind his own feed? Custom grinding costs eight to 10 cents per cwt. If so, when, why, and how?

Oakland Co.

L. S. N.

It will take some time for the cost of grinding to pay for a farm feed mill and the power to operate it, but from the start the saving will, I think, pay good interest on the money invested in the grinder and gasoline engine. A first-class outfit can be bought for \$350, and one that will do good work for much less.

When you buy an engine get one with sufficient power to do the business so it will not have to labor for all it is worth. If the outfit costs \$350 the interest on this at six per cent is \$21. It is well worth \$21 a year to have the outfit so you can grind when you want to and not have to haul your grain to town and back, many times just when you want to do something else, that is very important. The feed grinding ought not to be charged with interest on the entire cost of the engine, for the engine will be used for many other purposes.

Raising the Colts

THE main point to be observed in the raising of colts, is to begin proper feeding before the colt is born. Start with the mare, see that she gets good wholesome feed and plenty of it. One thing that has been noticed by many breeders, is the difficulty with which some mares breed when they are in poor condition. Mr. George Lane, of Texas, owns 120,000 acres. Upon this immense tract of land he keeps enormous numbers of horses. He has 450 pure-bred Percherons. During a six-year test Mr. Lane has proved to his own satisfaction that mares that are losing flesh are hard to breed. The percentage of mares that prove to be with foal is much greater among the mares that have lots of nourishing food.

Try and breed so that the mare will foal either in May or June. Some have their mares foal as early as March, but experience has shown that more danger is present for both mare and colt under those conditions. Injury is always less liable when the mare is on grass. The young foal needs nothing but the mother's milk except in rare cases. Where constipation is apparent it is advisable to give a little castor oil. In course of three or four weeks the colt will probably begin to eat grain along with the mother. At this time you should make a box that shall be in some accessible part of the stall beyond the reach of the dam, where may be kept oats and bran for the colt.

Don't let the colts run with the mares in the field at work. It is all

right to work the mares some soon after foaling but none of the good breeders allow the colts to run at the side. Many successful breeders have practiced turning their suckers out into a five-acre paddock located near the barn, during the day time while the dams are in the field at work. About nine o'clock in the morning the driver will come in from the field with the mare, if it is not too far, so that the colt can suck for a few minutes. This is repeated again in the middle of the afternoon. After four weeks this trip may be dispensed with and the colt allowed to nurse only at noon. The mares should run out with the colts at night. It is true that they will sweat more while at work the next day, but the benefits to be obtained far overcome the objections. The mares should have plenty of alfalfa hay and for their grain ration, nothing can beat a mixture of one quart of bran to three of oats.

After weaning time comes, the colts should have good pasture that is supplemented with a ration of grain fed three times a day. For the first winter this grain ration should consist of oats, bran and corn. Do not feed more than one-third corn and one-fourth would be better. A handful of oil meal fed twice a week will be a good conditioner, will help to keep the coat looking glossy and keep the bowels in a healthy condition.

(Excerpts from an address by Mr. Wayne Dunsmore before the Michigan Live Stock Breeders' and Feeders' Association).

WHEN TO FEED HORSES GRAIN.

When is the best time to feed a hard working horse grain, before he eats hay or should he eat some hay first? Cass Co. F. A. B.

Theoretically, it is better to permit the horse to eat some hay before feeding the grain ration. The horse has a comparatively small stomach for an animal of his size, and where grain is fed first there is a possibility that it may be forced out of the stomach into the intestinal canal before digestion has proceeded to the proper point. Also, where a practice is made of feeding grain when the horse is first put in the barn, founder is more likely to occur, and on this account the practice is undesirable.

LIVE STOCK NEWS.

The continued upward course of prices for cattle must prove conclusively to owners of cattle in preparation for the market that the scarcity so long talked of is a stern reality and that phenomenally high prices are going to be paid this summer and the following autumn. In short, the only thing that can check the advance will be the inability of consumers to pay further considerable marking up of prices for beef in the retail meat markets of the country. The recent sharp advance in cattle has enabled many stockmen to get back the money they put into their feed bills last winter, for cattle have been sold recently in the Chicago market fully \$2 per 100 pounds higher than their first cost when put in 100 days previously. High prices for stockers and deer feed make it necessary that stock feeders should obtain high prices for finished beefs in order to get living profits.

Farmers who finished their corn planting a short time ago have been shipping their hogs to market quite extensively, and some late big receipts in western markets caused sharp breaks in prices. The farming districts have been cleaning up supplies of swine that accumulated during the corn planting period, and increased shipments from eastern sections explain the smaller purchases made in the Chicago market by eastern shippers.

Following the recent boom in prices for everything in the live mutton line that landed prime fed Colorado lambs of medium weight in the Chicago market at \$11.65 per 100 pounds, breaking all high records in the history of the trade, several sharp declines took place in prices, as the packers and smaller butchers contended that the limit which mutton eaters could afford to pay had been reached and that such fancy figures would inevitably spoil their trade. Whether prices go higher or still lower from now on is a matter of uncertainty, but it is clear to everyone who is well informed about such matters that it is going to be a summer of extraordinarily high prices for desirable lambs and sheep, for their great scarcity is nowhere disputed.

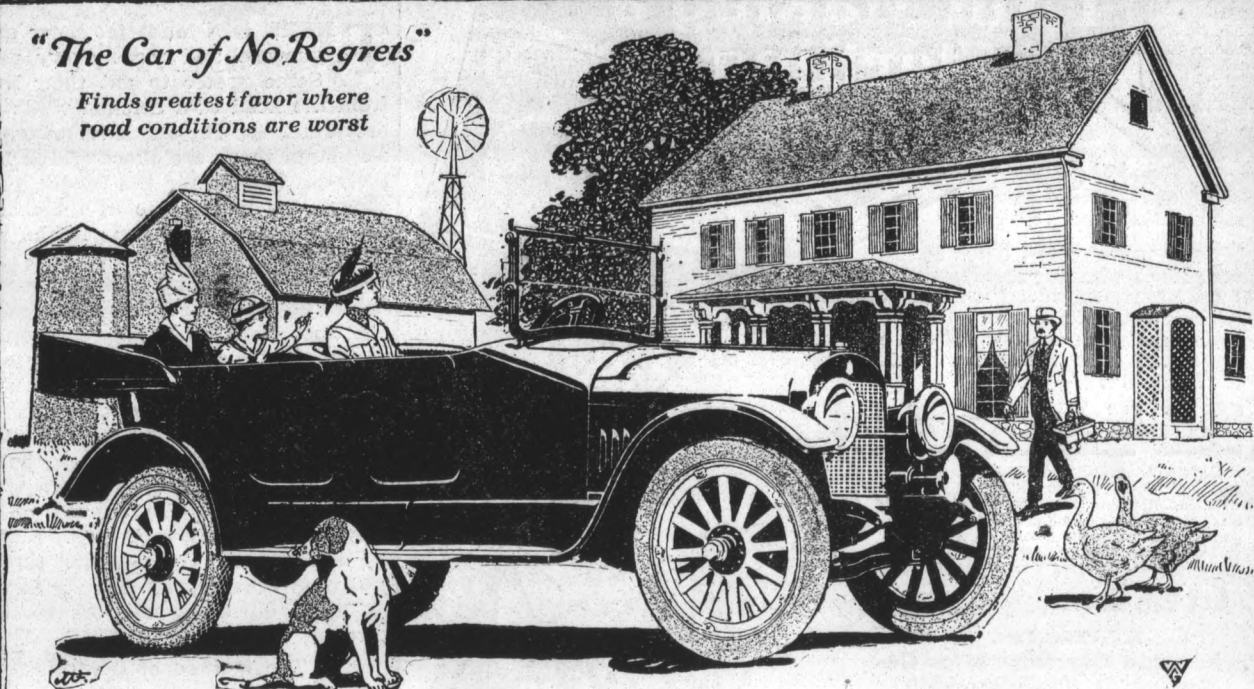
The Live Stock Report predicts a good summer market for fat cattle, and it believes that some of the hay-fed cattle that have been sent to the Omaha and Kansas City markets in recent weeks could have been fed corn on grass for the August, September and October markets to good advantage. It advises stockmen to turn their cattle on grass and feed them corn, rather than sacrifice them, as many did before the late boom in fat and medium cattle. Prior to the boom a short time ago, fat, heavy steers that had been on feed for eight to nine months and weighed up to 1600 pounds had to be sold at \$8@8.15 per 100 pounds.

J. C. Hill, of Iowa, arrived in the Chicago market on a recent day with two cars of cattle and three cars of hogs. He said that there is not much more than one-third of the dry-lot cattle left in his part of the state that there was a year ago, and hardly any of the feeders who are now parting with their cattle holdings are replacing them on grass. He predicted that extremely high prices will prevail for fat cattle during this summer and fall, and added that where stock feeders are compelled to buy corn at 70 cents per bushel to feed to their cattle, they are pretty sure to remain out.

Oscar A. Rice, who recently returned to Chicago from a week's visit to central and eastern Iowa, stated that the season is further advanced than it has been for years, and he added that there will be a greater acreage devoted to growing corn this season in Iowa than ever before. Hundreds of farms that have been used very extensively for other grains and for grazing stock have been planted in corn. Small grains had a fine start, and grass could not look better.

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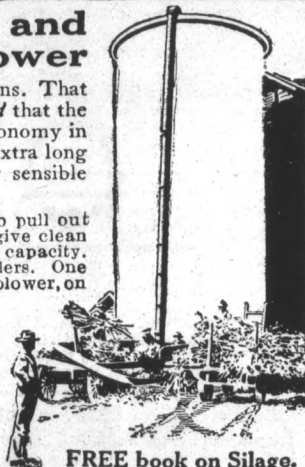
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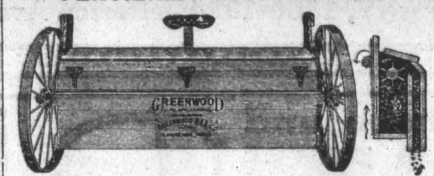


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Apple Aphids and Other Plant Lice

THERE is a louse for most every purpose and most every place. Some prefer to get their living from the head of a chicken while others prefer the shelter of its wing, and on plants there are those which have their preference for the tender young shoots, the under side of the leaf or the roots and the wounds in the bark of the tree. We also have them of all colors of the rainbow and of various habits of living. Some will appear on one host plant during the spring and early summer and then migrate to another for the remainder of the season. All plant lice are suckers, and as they get their living sucking sap, they have no mouth with which to chew, but instead a little beak or proboscis which they insert into the tissues of the plant in order to get the sap. Neither do the aphids have nostrils through which to breathe, but have a number of holes on each side of the body through which they take air.

The Method of Control.

As all lice are built on the same general plan, the method of controlling the different kinds is much the same. They cannot be killed through the use of stomach poisons and therefore the use of our common Paris green and arsenate of lead would have no effect on them. The means of controlling them must come through effecting their breathing system, and therefore the use of contact insecticides or those which kill by covering the insect and thus smothering it or clogging its breathing pores becomes effective. Among the common contact insecticides are commercial tobacco extract, kerosene emulsion, hellebore, pyrethrum powder and lime and sulphur. While lime and sulphur is probably the most commonly known insecticide we have on account of its efficiency in the control of scales, it is of little value when used in the control of the apple aphid. The lime and sulphur kills by absorbing the oxygen from the air and surrounding the scale, not by clogging the breathing apparatus as other contact insecticides do, and is therefore not effective in the control of the apple aphid, as the aphid moves from one place to another.

The cool, rainy weather we have had during the latter part of April and first part of May presented conditions favorable to the development of the apple aphid. In normal springs a parasite of the aphid develops fast enough to keep the aphid in check, but when the weather is unusually cold the parasite cannot develop. We may therefore expect that the aphid will be quite serious this year, especially in orchards of dense foliage.

Early Spraying Most Effective.

The prime object in the control of the aphid is to get the first few which hatch early in the season and thus prevent the development of the later brood. The most effective time for spraying therefore, is when the leaf buds are beginning to show green. If no remedy was used at that time another effective time would be just as the pink of the blossoms show. As both of these times are past, one can hope for fairly good results by thoroughly spraying after the blossom petals have dropped and before the aphids cause the leaves to curl. After the leaves curl it is of little value to spray as the spray material cannot come in contact with the aphids.

Of the various contact insecticides which would be effective in the control of the aphid the tobacco extract is without doubt the most effective and convenient to use. While its cost is higher than that of kerosene emulsion, it can be added to the regular sprayings and thus eliminate the cost of an extra application. It can be added to either lime-sulphur and arsenate of lead or Bordeaux mixture and arsenate of lead. As the extracts of the

various manufacturers vary in strength, it should be used according to their directions.

Some Contact Insecticides.

Kerosene emulsion is effective and economical, but one must use special care to have the kerosene well emulsified in order to prevent injury to the foliage. Even with the best of care there is occasionally free kerosene which, if used on the trees, would result in serious injury. Kerosene emulsion is made by boiling a pound of soap in a gallon of soft water, and then while the mixture is still very hot but removed from the fire, adding two gallons of kerosene and agitating the mixture vigorously until it is thoroughly emulsified. This should be diluted with three to four times its bulk of hot water. If the water is hard a little salsoda should be added. For spraying purposes one part of this stock solution should be used with ten parts of water.

Hellebore and pyrethrum powder are often used in the control of aphid on rose bushes and other smaller plants. On account of their expense they are not usually used in orchard spraying. Hellebore if used dry should be mixed with about four times its weight of flour or plaster. If used wet one pound of it should be used to 25 gallons of water. On account of its expense, pyrethrum powder is not used very often, but it becomes valuable when it is necessary to control the lice on edible plants, such as the cabbage, after it becomes dangerous to use something of a poisonous nature, as it is not poisonous. Pyrethrum loses its strength on short exposure to air and one must therefore use particular care in keeping the receptacle in which it is kept practically closed.

The above insecticides are effective in the control of any insects which suck, regardless of the plant which they attack. Beside the apple, the cherry and plum are often quite seriously affected by various leaf lice, and of the small fruits the gooseberries and currants are quite often seriously injured. For the control of any one of these pests one should use the contact insecticides which he considers most efficient and economical.

TROUBLE DEPARTMENT.

Hogs in the Orchard.

Are hogs pastured in an orchard injurious to it?
Oakland Co. W. N.

Allowing hogs in the orchard is not usually considered good orchard practice. In rooting up the ground the hogs do a job of cultivating which is really worse than none at all and in using the trunks of the trees for rubbing posts the result is not usually of any benefit to the bark. There are, however, exceptions to this general rule, and there are some men who are making a success of raising pork and apples from the same piece of ground. The most prominent exponent of this is Mr. Luther Hall, of Ionia county; he grows special crops in the orchard for the hogs to pasture. This pasture is so abundant, and he keeps the hogs otherwise so well fed that they never root for a living. His orchard soil is also so rich and full of humus that there is plenty of plant food and moisture to put a good growth on the trees and insure a good crop of apples.

The chief object in the care of the orchard soil is to make plant food available and to conserve the moisture in the soil. A conservation of soil moisture is especially important, as the apple is over 90 per cent water. If one has a system by which he can keep hogs in the orchard and still maintain the fertility and conserve the moisture there will be little injury done to the trees.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

FOR more than two years John Barrett and I had worked in adjoining offices in the city, and had become great chums. John was a year older than I, but he looked more than five years, probably because of his early environment. His people lived somewhere "up the state," and it was evident that he still longed for the broad fields and the life of the wilds. He was enthusiastic about the green woods and never ceased to talk of "getting back to nature."

The time had arrived when vacations became the principal theme of discussion. The three weeks' annual leave was an important matter to the workers in the hot city. I had voiced myself as preferring a quiet isolated spot where I might just rest and fish.

"Lake Lielanou is just the place!" exclaimed John Barrett. "It is the best in the country for black and green bass," he continued, "and in its clear waters the pike grows to great size." He followed his comment with an enthusiastic description of the big fish to be found in the lake, and then launched into a wonderful description of the picturesque country.

"Lake Lielanou is just the place for me," was my sole comment.

We made our camp on the eighteenth of July, and the place was all that John had described. The scenery was enchanting. A great hill at the back—the clump of evergreens—and the lake in front, with its cove into which our little hired gasoline launch poked her dainty nose—all were there.

The First Pike

(A Fishing Story)

By EARL ROBERT RICE

To me, the twelve by fourteen tent, with the usual camp fixings, nestling closely beneath the resinous pines and hemlocks, was irresistible. I prophesied for myself, at least, a most delightful vacation.

The first day, at five o'clock, we went out in the rowboat, carrying with us winged grasshoppers for bait, and were successful in catching plenty of black bass. For a week we kept up this program, having no difficulty in securing the great fighting fellows weighing from four to six pounds. The story of these catches alone would make a tale worth hearing, but what of the pike? Thereon hangs the tale of adventure.

"Didn't you tell me that this lake was full of pike?" I asked John. "I don't remember that we have caught even a small one."

"We haven't used the right kind of bait yet," said John. "If you say so we'll go trolling tomorrow."

Of course I wanted to go, and the more we talked about it the more I wanted to catch a pike—the first pike!

The night before we had been talking about a news item chanced upon in a paper used for wrapping.

"I don't see," said John, "how a thing like that could happen—some one must have been mighty careless."

The incident referred to was the drowning of a couple of fishermen from an open boat. The cause of the drowning was a series of almost unexplainable circumstances, the culmination as an almost impossible feat, and there was something droll as well as tragic in the incident.

As we had been in camp a week and our appetites had grown enormous, naturally our supplies had grown correspondingly low.

"We had better run down to Leland this afternoon," said John. "It's going to be a fine day and the sail will be splendid."

I assented, and after inspecting carefully our stock of provisions, noting each article wanted, we went out for our morning's catch, when the subject of the pike was again referred to.

Again John insisted that we had not used the right kind of bait, whereupon I gained the information desired as to what constituted the right bait and the best place to be found on the lake for pike fishing. John emphasized the fact that it was not so much the place that was necessary but the trolling and I soon hit upon a plan.

At camp dinner I feigned weariness and begged to be excused from the proposed trip, to Leland. John accept-

ed by excuses though hesitatingly, and much to my annoyance, purposely delayed starting out until later, thinking I might possibly change my mind. But, finding that I had huddled down in my coat in the tent evidently dead tired, he, much to my relief, finally set out without me.

I heard the chug-chug of the launch as it slowly made its way out of the little cove. Rising, I watched it reach open water and head up the lake, and continued my watch until John turned on full speed, soon disappearing around a projecting point.

The coast being clear I got out the trolling line and attached the spool and hooks according to the directions given by the unsuspecting John. I found that it was a strong line and would bear a weight of many pounds. My next move was to carry it down to the small boat. By three o'clock I rowed out onto the lake.

A slight breeze was blowing and I allowed the boat to drift with the current which was strong enough to ripple the surface of the water, creating conditions seemingly ideal.

Letting out two hundred or more feet of the line, I drifted steadily, skirted a patch of lily-pads some distance away and, finally, caught one small pike. Another mile down I picked up another a little larger in size, but this was too small game for my liking—I was eager to find the monstrous pike John had pictured.

Beginning to feel dissatisfied with the afternoon's venture I turned back, edged a little closer in and had gone

WORLD EVENTS IN PICTURES



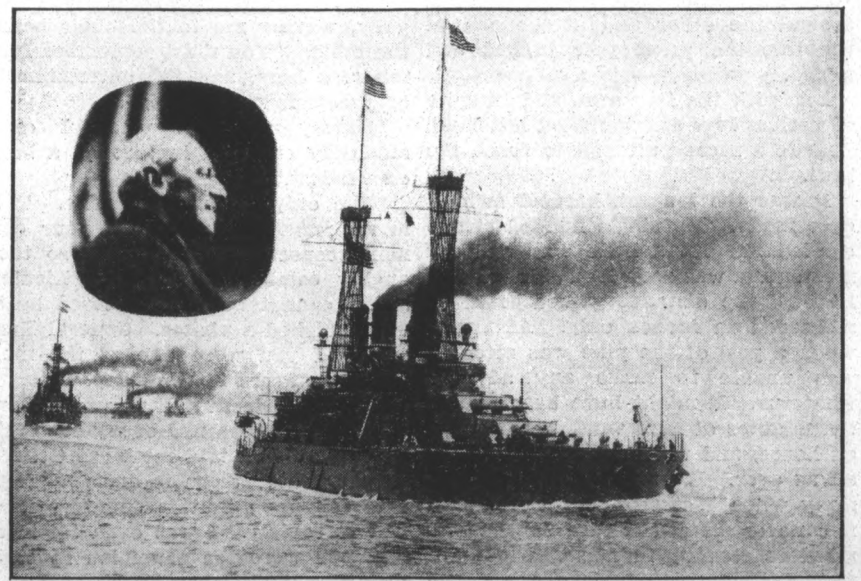
Fire Destroyed Larger Part of the City of Colon in Panama Canal Zone.



Italian Commissariat Gathers Supplies for the Army now at the Front.



Territory which Austria Refused to Cede to Italy and that Prompted the Declaration of War by King Emanuel.



Battleship "Michigan" in the Great Naval Review in New York Harbor. Insert Shows President Wilson Admiring the Parade.

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perhaps a hundred rods when, suddenly, the line tightened in my hand. It was no ordinary pull, and the line sank as it whipped the water. The pull was so strong that I was half convinced that I had struck a snag. But the line was leading off toward deep water. I knew that no snag would do that and was satisfied that I had at last hooked the big game.

There is but one thing for the troller to do when he has hooked his fish, and that is to pull in slowly. This I proceeded to do, realizing that my success in landing the prize depended a great deal upon the strength of the line and the security of the strike of the whirling hooks.

To my joy both held, and I drew in with a strong hand.

The rush toward deep water being stopped my catch tried desperately to dislodge the hook. I was alert however. Then with a quick upward rush his full size came into view, a yard or more in length.

My heart beat fast for a moment; then I saw him fall back and almost felt the spray dashed up from his mighty flounders.

Again and again he tried to escape, each successive attempt a little nearer my boat, but hook and line were holding. I was confident that the monster pike would soon be mine.

The fight was becoming interesting, and I became reckless. In my haste in pulling in half of the line had come over the side of the boat and was lying in loose coils on the bottom. As the game became more exciting and the fish came nearer, his great size becoming more and more evident, I threw caution to the winds and did what no troller should ever do, I stood up in the boat. The wet line was falling over my feet and my legs became more and more entangled. Then, in my eagerness, I stepped a little to one side of the light craft. It swung and tilted under me and I was thrown off my balance. In trying to regain my poise I became hopelessly entangled in the line at my feet. Trying to stand up I lurched forward, pitching headlong into the water.

Coming to the surface and sputtering from my hasty plunge I looked for my boat. Released from my weight it had shot upward and away, and now danced a dozen feet distant. I was a fair swimmer and thought not of danger, but I was half mad with chagrin.

After a few moments I struck out for the little craft hovering on the waves just before me, indulging in a laugh at my own expense, but my laugh stopped at my first attempt at a stroke: I discovered that I could not use my feet. In some unaccountable way they had become entangled more and more in the line until they were securely tied and my effort to swim only tightened them the more. Locked together my legs were as useless for swimming as a couple of water soaked logs, and already my feet seemed as heavy as lead. My right hand alone was free. The line was wrapped around the other and at the end of the line the great pike tugged and pulled.

But with the free arm, and in spite of useless legs and weighted left hand, I made a second attempt to reach the boat.

It was the longest, hardest swim I ever made. My single handed stroke carried me but a little way and my momentum was soon lost. Struggle as I would the distance gained could be measured in inches only. At times, when a pull of the pike was strong I was unable to make any advance whatever. It might have been five or ten minutes of hard work but it seemed hours, and the boat seemed as far off as ever. It was only a dozen feet away when I started, but that dozen feet never seemed to diminish, but instead to steadily increase. Finally, I turned on my back for a moment's respite, and the wind blew across my face and the waves lapped my cheeks.

Then I understood—the boat was drifting away from me—the wind was urging it on!

In desperation I rallied myself. I must reach the boat soon or be drowned.

With all force possible and with every faculty alert, I plied my free arm, flung it out behind with all my strength, and slowly but surely gained on the boat, the distance narrowing inch by inch to eight, to six, to four feet, and then a brief span. I noticed that I was passing the reeds near the shore and that the trees on the hills seemed whirling, but I was near enough now to hear the lap, lap, lapping of the waters on the sides of the boat. A few more strokes and I would win. The boat was right before me, just beyond my reach, not more. With a great muscular effort I threw my hand upward and caught the side. I pulled the gunwale down and threw my arm and shoulder over, then grew dizzy. Everything turned dark, but only for a moment. Soon the mists cleared before my eyes, my heart stopped its furious beating and I calmly attempted to climb into the boat. I found that hard work with only one hand free, in fact it seemed almost impossible. My overworked arm was aching, exposed to the air it had grown cramped and knotty. I tried to throw my other hand forward and upward, but could scarcely lift it out of the water. One attempt after another failed, for the line was drawn tight around my arm from the elbow down, and resisted all my efforts.

I remembered the pike but was conscious that it was no longer struggling. Instead there was a steady pull and so strong as to feel more than the efforts of any fish. I could not then account for it, but afterwards discovered that, in his frantic dashes, the pike had run the line around a log and anchored me and in his effort to escape capture had made all fast and sure. The steady wind held the boat broadside at the end of the line.

What was I to do? I could not climb in. To hold on was becoming more and more difficult each moment, and yet to give up and let go I dare not.

"There must be a way out of this," I reasoned to myself. "John may

come." At the thought I glanced up the lake, but it showed only a clear surface.

"The line may break," I mused assuringly, but, even as the thought came to me, the line pulled against my arm desperately.

Then another idea came to me—an idea which when worked out saved my life.

As the line had not broken it was just possible that I could bring the boat around with its nose to the wind: then the pull from it would not be so strong. The idea worked. Sliding a little way from the middle of the boat, giving it slight leeway, I soon found that it began to swing of its own accord, and, as it came around, the wind at exactly the right moment aiding my efforts, I gave a strong pull. The boat shot a little past me and along the line, and for a brief moment, the heavy drag on my arm was eased. I threw up my hand, grasped the side of the boat, and, with new courage, shoved my shoulders forward.

The boat tipped toward me and the water rushed over its edge, but half crawling, half swimming, I slid forward. The boat righted instantly. The wind caught us again and the line tightened on my arm. Then reaction set in. I grew dizzy and a blurring darkness gradually stole over my senses. How long it lasted I do not know, but, as my consciousness returned, I was aware of a faint sound, and as I listened, I discovered that it was coming nearer and growing louder. "It's the launch!" and the thought revived me.

A moment later I heard John's voice.

"Hold on, old fellow, I'll be there in a minute!"

Steering close to the boat where I lay partly in and partly out, helpless but safe, he found me in a pitiful plight. But, without a word, he lifted me over the side of the launch and, then, laughed uproariously.

His laugh quickened my senses—I believed him laughing at my plight. "Look! Look!" he exclaimed, and even as he spoke he half raised me.

Not a hundred feet away from our craft lay a great pike, a good yard long, floating on the surface, belly upward.

THE RED MIST.

By RANDALL PARRISH.

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CHAPTER IX.

Arrival of Parson Nichols.

SHE put aside laughingly my suggestion of assistance. Indeed her appearance of good humor caused me to feel that the girl was really glad of my presence in the house, this relieving her of loneliness.

"Not a word of protest," she said gaily, waving me to the chair beside the table. "You must remember I am mistress here, and the entertainment of guests is my privilege."

"Hardly a guest when I came stealthily crawling in through a broken window."

"The only entrance possible. That is all forgotten, now that your eminent respectability has been so thoroughly established. Really, Lieutenant, I cannot but feel honored by so distinguished a visitor. General Ramsay said you were one of the most popular officers in the army."

"Did he, indeed? It was from Ramsay, then, you learned of my coming?"

"Captain Fox told me what General Ramsay said; there is quite a grapevine telegraph in this country—news travels rapidly. I was even informed that you were the champion revolver shot of your division. To such distinction I can only bow in reverence."

She swept me a low courtesy, her

laughing eyes smiling in the lamp light. Before I answered, the fire in the grate burst into blaze, and her hands were busily rearranging the table.

"With no servants left, and the house unoccupied for months," she explained, "I shall have to give you soldier fare, and, perhaps, not very much of that. Someone has made free of our larder since we left, from all appearances the same gentleman who broke in through the window, no doubt—and I discovered little remaining even for myself. But such as it is I give it to you. Pardon my not joining in the feast, as I have only just eaten."

She drew up a chair opposite to where I sat, supporting her chin in her hands. The light between us illuminated her face, outlining it clearly against the gloom of the wall behind. It was a young face, almost girlish in a way, although there was a grave, strong look to the eyes, and womanly firmness about lips and chin. I had seen so little of her in the days gone by as scarcely to retain in memory a detail of her face; she had been to me but a swiftly flashing vision, the merest recollection of bright eyes, and loosened hair flying in the wind. And here I found her a woman—a woman with all a girl's slenderness of form, and unconventionality of manner, yet capable

and thoughtful, her mind clear, and loyal to her ideals, a woman of charm, of rare beauty even; sweet and wholesome in look, her cheeks aglow with health, her eyes deep wells of mystery and promise. I felt something choke in my throat as I glanced at her—a regret that I had lied, that I had deceived. Yet I saw no way in which I could escape my unfortunate predicament. I had taken the false step, and my duty to my service, my loyalty to Jackson, to Lee, to my comrades of the South, forbade any disclosure of my mission. The sympathy of the girl was unquestionably with the Northern Army; there could be no doubt as to that; her father wore Federal uniform, and had given up all for the cause. Her father! why I dare not even tell her of his death, of his dastardly murder. My lips were now completely sealed to the truth, because any attempt to explain would swiftly arouse her suspicion. Indeed, it was strange she had not recognized me, although I realized to some extent the change in my personal appearance since our last encounter—the uniform, the short, soldierly cut of my hair, the marks which exposure and peril had left on my features. Yet probably the real truth was that she had never before observed me with any care or interest—considering me a mere boy to be laughed at and forgotten. Nothing about me at present served to even remind her of what I had once been. I was only a stranger entering into her life for the first time. This expression was in the eyes surveying me as I ate—quiet, earnest eyes, utterly devoid of suspicion. I was so busy with these thoughts that she broke the silence.

"You are a very young man,"

"Not seriously so," I answered, rather inclined to resent the charge. "I am twenty-four."

"Really! Why that is not so bad. How old am I?"

I could have told her to the day, but chose to venture a guess.

"Seventeen."

"A year and a half too young. You are no better guesser than I am. You look like a boy I used to know—only his eyes were darker and he had long hair."

"Indeed!" I caught my breath quickly, yet held my eyes firm. "Someone living about here?"

"Yes; his name was Wyatt. I never knew him very well, only you recalled him to memory in some way. He and his mother went south when the war first broke out. Where was your home?"

"In Burlington, Vermont."

"You are a regular soldier?"

"I was a junior at West Point last year; we were graduated ahead of our class."

Her eyes fell, the lashes outlined on her cheeks, her hands clasped on the table.

"Isn't that odd!" she said quietly. "Do you know Mme. Hactell's school for young ladies at Compton on the Hudson? That is where papa sent me and I was at the senior hop at West Point a year ago last June. A half dozen of us girls went up; Fred Carlton, of Charleston, was in that class, and he invited me. You knew him, of course?"

My lips were dry, but I nodded, half fearful I might be slipping into some trap, although her words and manner were surely innocent enough.

"We were only acquaintances, not friends," I replied, hoping the retort might cause her to change the subject.

"Most of the boys seemed to like him. He was very pleasant to me, and I had a splendid time. I met one cadet named Raymond; he had dark hair and eyes."

"Oh, yes," I managed to answer, now desperately alert. "There was another in the class—James R. I believe."

"I did not learn his first name, but when I heard that a Lieutenant Ray-

mond was coming here, I hoped it might be him. That was why I was so deeply interested. It is not such a common name, you know."

I made some answer, and she sat there silently, her face turned now toward the fire in the grate. The profile held me in fascination, as I wondered what these seemingly innocent questions could signify. Were they innocently asked, or did the girl secretly suspect my identity, and my purpose? If she had recognized me as Tom Wyatt, and was pretending not, merely to learn my object, then surely she had already proven herself a remarkable actress. No expression of eye, or voice, led me to believe this. The questions were, indeed, natural enough—the only strange feature the coincident of her previous brief acquaintance with the man whom I had recklessly chosen to impersonate. Anyhow, let the truth be what it may, there was no other course left for me, but to keep on with the deception. I was in the heart of the enemy's country, in disguise, my life forfeit in case of discovery, and the time had not come when I could entrust her with so dangerous a secret.

The wind rattled the blinds, and the rain beat heavily against the side of the house. The thought of venturing out into the storm, not knowing where I could seek shelter, was not an alluring one. Nor had I any excuse to urge for immediate departure; indeed, as a gentleman and soldier my duty called me to remain for her protection. She could not be left alone in this desolate house. These thoughts flitted through my mind, as my eyes studied her face, but the final decision was made for me. I had heard no sound other than that of the storm without, and the crackling flames within. We seemed alone, isolated, utterly beyond the zone of danger. That others might be abroad on such a night never occurred to me. It was rather my steady gaze that roused the lady from whatever dream the flames of the grate had given her. She turned her head to meet my eyes—then sat suddenly erect, the expression of her face instantly changing, as she stared beyond me at the open door. I wheeled about to look, startled at the movement. A man stood in the doorway, water streaming from his clothes onto the floor. I was on my feet instantly, a hand gripping my revolver, but before I could whip it from the leather sheave the girl had taken the single step forward, and grasped my sleeve.

"Do not fire!" she exclaimed. "He is not a fighting man."

The fellow lifted one arm, and stepped forward full into the light. He was a man of years, unarmed, a tall, ungainly figure, a scraggly beard at his chin, and a face like parchment. His eyes were two deep wells, solemn and unwinking.

"Peace to you both!" he said gravely. "I ask naught save fire and shelter."

"To these you are welcome," the girl answered, still clinging to my arm. "You travel alone?"

"Even as my master in rags and poverty, having no place wherein to lay my head. The foxes have holes, the birds of the air have nests—you know me, young woman?"

"Yes; you are Parson Nichols."

"An unworthy soldier of the Cross. I address the daughter of Major Harwood—and this young man?"

"Lieutenant Raymond, of the Federal Army," she explained simply. "He sought refuge here from the storm."

The man's eyes searched my face, but without cordiality, without expression of any kind. Deliberately he removed his long, water-soaked cloak, and flung it over the back of a chair, placing his hat on top. His undergarments were dry enough, butternut jeans, and he wore high boots, splashed with mud. His head, the hair upon it thin and gray, rose into a peculiar pear-shaped peak, but his temples

were broad and prominent. Saying nothing he crossed to the fireplace, and held out his hands to the warmth of the blaze. The girl's eyes met mine almost questioningly.

"You know him?" I whispered.

"Who he is—yes; a Baptist mountain preacher. But why is he here, what purpose brings him?"

"An accident, no doubt; overtaken by the storm."

She shook her head, unconvinced. Then she stepped forward.

"We were just completing our meal," she said softly. "There is not much, but we will gladly share what we have."

"The flesh needeth nothing," he answered, not even looking around, "and the spirit liveth on the bread of life. I seek only converse with you. The young man is an officer?"

"Yes—on recruiting service."

"You know him well, you trust him?"

"I—I have not known him long," she replied hesitatingly, and glancing back at me. "Yet I have confidence in him." The man did not answer, or move, and, after a moment of silence, she asked:

"Have you ridden far?"

"From Lewisburg."

"Lewisburg!" in surprise. "Then you knew I was here, you came seeking me?"

He turned on his stool, his eyes searching her face gravely.

"On a mission of my ministry," he replied solemnly, "although whether it prove of joy, or sorrow, I am unable to say. I am but an instrument."

The man's reluctance to speak freely was apparent, and I stepped forward.

"If you prefer conversing with Miss Harwood alone," I said quietly, "I will retire."

"The words I would speak are indeed of a confidential nature—"

"No, no!" she broke in impulsively, her eyes of appeal turned toward me. "Do not leave us, Lieutenant. This man has nothing to say I am afraid to have you hear. He has not come here as a friend; there is some evil purpose in all this, which I cannot fathom." She faced him now, her slender body poised, her eyes on his. "Tell me what it is—this mysterious mission? Ay, and who sent you to find me? I will not believe it was my father."

The minister rose to his feet, a tall, ungainly figure, his solemn face as expressionless as before, but a smouldering resentment was in his deep-set eyes. He possessed the look of a fanatic, one who would hesitate at nothing to gain his end. To me he was even repulsive in his narrow bigotry.

"No, it was not your father," he said almost coarsely, "but it is a part of my mission to bring to you, young woman, the news of your father's death."

"Death! My father dead?" she stepped back from him, her hands pressed against her eyes. "Obeying the first instinct of protection, I stepped to support her as she seemed about to fall. "That cannot be! You lie! I know you lie! You were never his friend. You come here to tell me that to frighten me; to compel me to do something wrong."

The man exhibited no trace of emotion, no evidence of regret, his voice the same hard, metallic sound.

"I expected this outburst," he continued unmoved. "Indeed, it is no more than natural. I am the Lord's servant, and must expect abuse and reviling from the unconverted; yet will I not be swerved from the line of duty. It is true that the Major and I differed in many things—he was of the worldly, while the light which guideth my path is spiritual. But I harbor no resentment, and in this hour freely forgive all. 'He that taketh the sword, shall perish by the sword,' and my words are true."

"But I saw him four days ago."

(Continued next week).



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Woman and Her Needs

At Home and Elsewhere



Planning for Summer

By MRS. JEFF DAVIS

IT is well, and indeed necessary, for the housekeeper to begin in the spring to plan for the summer. This looking ahead means the difference between a pleasant summer with time to enjoy it with your family, and one in which work, and more work, looms big upon your horizon.

In making your summer clothes have in view the elimination of much of the work of washdays. Whether the housewife has to do the family laundry herself, or has it done out of the home, it pays to make a careful study to reduce the size of the washing. Of course, the warm days demand many more dresses, waists and other articles than are used during other seasons. But a woman who sets her mind upon this problem can find ways, and easy ones, too, to mitigate the terrors of summer washdays without interfering with the family comfort, or lowering the high standard of cleanliness which makes home delightful.

Here are some hints which perhaps many have tried and found helpful, and I hope others will adopt during the coming summer.

Make all the underwear for the feminine members of the family from the cheaper grades of domestic crepes, or seersucker. These goods can be bought for 12 or 15 cents per yard, and are dainty and serviceable. The fact that they require no starch means an economy in money and labor, and in these

days of increasing prices every little bit saved counts in the end. It is the little savings that count.

Then there is the added advantage that clothes made from these good require no ironing, and to the busy housewife, especially during the hot days, this means a good deal of really hard work off her hands, leaving more time for other household tasks, and perhaps a margin for reading and resting.

By selecting the grade most used and buying it by the bolt a reduction of three or four cents per yard is sometimes obtained, and while even this reduced price may be a little higher than muslin, the crepe is the cheaper and more satisfactory material in the end.

Serviceable house dresses may be made of the figured serpentine crepe, and these are much more comfortable and less care than either gingham or percale, and, all things considered, more economical. Colored crepes will serve for the week day blouses for the boys. For best dresses nothing is prettier than the imported Japanese crepes, in attractive patterns and beautiful colorings, and the dainty white crepes. These gowns are to be commended because they do not read-

ily lose their freshness as does a starched garment as soon as it becomes mussed, and when soiled they are easily laundered without starch or ironing.

A word about drying garments made of crepe may not come amiss. Waists and dresses should be hung on wooden coat hangers while drying, and skirts should be pinned by the belt, holding the belt double and pinning it smoothly along the line. A straight edge of other articles, such as curtains, should be pinned to the line. If lace is used as trimming on a crepe garment, it should be pressed after the garment is dry.

The house can be arranged with the same view of eliminating all unnecessary washing. Instead of using white counterpanes, make colored spreads out of cretonne, or better still, cotton crepe. In its daily removal from the bed it does not "muss up" as do most covers. If such a spread is made from a dainty printed pattern, with curtains at the windows from the same piece the effect will be wonderfully good. These spreads from cretonne or crepe are pretty and stylish and will last all summer without a visit to the washtub.

Few persons, probably, are aware

that cotton crepon makes excellent towels. On account of the peculiar weave this material gives a pleasant friction, wipes dry and can not easily be torn. Bath towels 30 inches wide, and 40 inches long of white cotton crepon can be made at a cost of 15 cents each. If they are hemmed by machine, and the hem is either cat-stitched or faggotted with ordinary marking cotton, the effect is attractive, and the towels are sure to wash well.

For the dining table use mats instead of the long, linen cloths that are so hard to keep immaculate. The linen, crochet, or mercerized mats are pretty and much easier to keep laundered.

For a change get the Japanese towel which comes in blue and white and other colors at 15 cents per yard, launders well and will last indefinitely. Make two runners for the table of this, placing them so as to cross the table in the middle where the fern dish or vase of flowers stands. These runners serve as centerpiece, and make four plate doilies beside. Make additional mats of the same cloth. A table arranged in this manner will prove attractive, and serviceable at a minimum of labor.

Let us begin in time, and arrange our domestic affairs so that we shall have leisure to enjoy the summer rays in reading, resting or taking pleasant outings with our families and friends.

Michigan's Happy Babies—No. 16.

The mother of the bottle fed baby is constantly being advised. She is told to use all sorts of preparations if the baby is not thriving, and unless she knows good advice from bad she is more than likely to come to grief. People with a smattering of knowledge advise peptonized milk, junket kumyss and other milk preparations, usually without knowing much about the thing they mention and whether it would be suitable for an infant suffering from the particular form of indigestion under advisement. It must be remembered that all infants have not the same digestive powers and one may be getting too much cream, another too much sugar, a third too much proteid, and a fourth too little of all three. There are certain symptoms which indicate to the practiced nurse or doctor just what is the trouble. It is wiser for others not to advise.

However, it is well for every mother to know about the different preparations sometimes given to babies, and when it is best to give them. Cow's milk is hard for infants to digest, not alone because of the larger percentage of proteids, but because of the difference in character of the proteids. If these proteids can be changed or partially digested before feeding they are much easier for the infant to assimilate. In the digestion of proteids there are three changes which require three sets of glands and the operation of three different secretions, rennet, hydrochloric acid, and pepsin, the processes taking place in the order named. Sometimes the trouble with the baby's digestion may be due to too small a secretion of rennet, again of the acid or of the pepsin. These things may be added to the milk before feeding

and the process of digestion thus helped.

To add rennet to milk the milk should first be pasteurized for a half hour. To do this put undiluted milk in a bottle, set it in a vessel of cold water and boil for a half hour. Set to one side and leave until the water has cooled to 104 degrees, then add the rennet and a small pinch of table salt. Enough rennet should be used so that coagulation will take place in a few minutes. As soon as the milk is coagulated, shake vigorously to break up the curds, modify according to your own formula, and feed. The rennetized milk may be kept on ice for later meals if desired. Only a small amount of salt must be used, just sufficient to be tasted in the milk. This supplies a little hydrochloric acid and assists in dissolving the curds.

Milk is peptonized by adding extractum pancreatis, which is bought at the drug stores either in glass tubes or in tablets. It is better to use the tubes as the pancreatis is less likely to be impaired by age. Directions for using it go with the package. The process of peptonizing is usually carried on for from six minutes to 20. If it is stopped at 10 minutes there is no change in the taste of the milk. If it is carried on longer the milk becomes bitter. The process is stopped by raising the milk to the boiling point, thus killing the ferment. To peptonize the milk completely the process should be carried on for two hours. After this the addition of acetic acid will not produce curds. The extreme bitter taste of completely peptonized milk may be overcome by adding an even teaspoonful of cane sugar and two teaspoonsful of lemon juice to every four ounces of milk.

Neither rennetized milk nor peptonized milk should be given an infant except upon the advice of a competent judge.

Kumyss, junket and whey will be described in another article.

DEBORAH.

VALUE OF A WOMAN'S WORK IN THE FARM HOME.

The woman plays an important part in the successful operation of many farms. Frequently, however, the extent of her work is not appreciated, and in many cases little attention is given to improvements in the house because the labor thus saved, in its relation to the general farm operations, is not deemed commensurate with the money expended.

To illustrate the value of such work performed by some women, a record is here given from a 320-acre farm in North Dakota. The size of the family on this farm averaged seven adults during the year. Four of these were hired men, the other three being the farmer, his wife, and a grown daughter. The wife and daughter did all the housework, all the laundry work, and cared for an eight-room house. They canned 300 quarts of fruit and 100 quarts of vegetables and did most of the work in the vegetable garden. Practically all the vegetables consumed were produced on the farm. Among the important articles of food they prepared for home consumption during the year, were 50 bushels of potatoes, three bushels of green beans, four bushels of green peas, three bushels of onions, 400 head of cabbage, 10 bushels of turnips, six bushels of beets, three bushels of cucumbers, six bushels of tomatoes, 36 heads of cauliflower, seven bushels of sweet corn, 1,900 pounds of flour, 144 pounds

of coffee, 1,800 pounds of dressed pork, 200 head of poultry, 520 dozen eggs, and 312 pounds of butter.

This farmer's wife valued her own and her daughter's labor at \$520 per year. This is a direct contribution to the business of the farm. On many farms the labor contribution of the farmer's wife or daughter is the limiting factor between success or failure.

HOME QUERIES.

A Subscriber, Genesee County:—We can not give the addresses of business firms in this column. It is a hard matter to sell fancy work at any profit to the worker, as factories turn out so much that is pretty and inexpensive. The store which accepts your goods will fix the price and I could not tell you how much your curtains might be worth. A great deal depends upon the workmanship, a curtain well made would, of course, be worth much more than a poorly made one. Just now I should think collars and dress accessories would sell better than any other sort of fancy work. Crocheted yokes for night dresses are in great demand.

Household Editor:—Will some reader give me a tested recipe for a jelly roll and a starter for bread? State if they are heaping, rounding or level measures.—Young Cook.

When the rubber ring which goes with your cream separator bowl becomes stretched too large (as they all do after being used awhile), lay it on a board and with a sharp knife cut a small section out, enough so that the ends will fit snugly together. It will then last fully as long as before. As the rings cost from six to nine cents each, the saving is quite an item.—Mrs. E. S.



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Grange.

STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.
Overseer—C. H. Bramble, Tecumseh.

Lecturer—Dora H. Stockman, Lansing.

Secretary—Jennie Buell, Ann Arbor.
Treasurer—Frank Coward, Bronson.
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby.

AMONG THE LIVE GRANGES.

A Unique Contest for Members.

Mt. Pleasant Grange, of Washington, had an essay writing contest which proved interesting. The subject was "The Old Farm," on which all members were supposed to write. From these the eight best essays were selected and their writers entered in the final contest, which was an essay on "The Farm Home of the Future." The first prize winner was given a trip to the State Grange meeting, the second a trip to the Pomona, and the third a year's dues.

New Grange Hall Under Construction.—On February 26, after much discussion the Rose City Grange voted almost unanimously to build a Grange Hall. Immediately the Rose City Grange Hall Association was formed. Everybody began to talk about the new hall, stone was hauled and two bees have excavated the basement and put things in readiness for real building. Up to date enthusiasm has not abated. The ladies of the Grange have most of this indispensable commodity (if most can be said of anybody) and we actually believe if left alone, they would complete the hall without the help of us mere men. A good Granger cannot be selfish. He is bound to be a dispenser of charity and must not live to himself alone. Therefore the architect has designed the hall to be a theater when occasion demands. Every arrangement is to be made for the convenience of home talent plays or moving picture shows. The hall will be rented for church suppers and socials, lectures, basket-ball, and any clean legitimate use at the discretion of the trustees. As the Rose City Grange Hall Association is a corporation organized under the law as "not for pecuniary profit," stockholders will be given special rates from the schedule and allowed to pay for rent of hall in stock; if they wish, also they may rent the hall to others, not stockholders, collecting the rent therefor and paying their stock in to the treasurer of the association to the amount of the rent charged for the hall. It is the plan of the Rose City Grange to take up all stock of all holders who wish to sell, so while the hall will not pay dividends, each stockholder may dispose of an equal amount of stock as funds are accumulated for that purpose. While there will not be an actual dividend declared, the profit will be none the less real, not only to those who believe it will help build up the standards of the community, instill new enthusiasm and methods, create a better market for produce and better produce for market and make a better city of the place we call "our town," but to the uninterested individual, it will be a source of education and place of clean amusement. The association has had stock certificates printed and will issue them to those who draw material, (outside of the two bees), or furnish work or material. The shares are also for sale at \$1.00 each, in blocks of from one to one hundred dollars.

New Grange Organized.—Charles H. Anderson, Grange organizer for this section of the peninsula, organized Aura Grange No. 1599 at Pelkie Saturday evening, May 1. This makes the sixth Grange in Baraga county, there being three in Baraga township. Aura Grange starts out with 16 charter members, and as it is located in the most thriving section in Baraga township, it has a brilliant future before it. The meetings will be held in the Pelkie school house at present, but as soon as the organization is permanently perfected the second floor in the Co-operative Creamery will be repaired and the meetings held there. The officers chosen were: Master, John Kemppinen; secretary, George Sandeline.

Had Company.—Conklin Grange entertained Ravenna Grange, of Muskegon county, at their last meeting. After partaking of a bountiful dinner they were escorted to the upper hall. Besides the regular order of business the entertaining committee had prepared a good literary program consisting of songs, recitations, readings and speeches. The members of Ravenna Grange also did their share to make it enjoyable for all.

Farmers' Clubs

Address all communications relative to the organization of new Clubs to Mrs. J. S. Brown, Howell, Mich.

CLUB DISCUSSIONS.

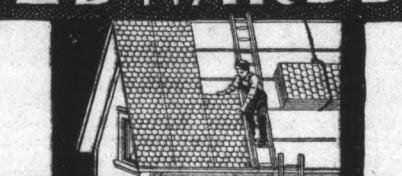
Ladies' Day.—May 13 was ladies' day at the Ray Farmers' Club, which met for an afternoon meeting at the home of Mr. and Mrs. Alfred Lyons. The meeting was conducted by Mrs. Lewis Broughton in the absence of the president and vice-president. Roll call was responded to by naming one's favorite flower; the rose seemed to be the favorite. "When and where our daughters receive their education in domestic science," Mrs. J. T. Wyman gave some very interesting points on the subject. Mrs. J. A. Jewell read a fine paper on school work. The Club will meet on Children's Day, June 10, at the home of Mr. and Mrs. F. E. Mills.—Mrs. E. M. Frost, Cor. Sec.

Hold First Summer Meeting.—The Ceresco Farmers' Club met April 28 at the home of Mr. and Mrs. Earl Johnson. This was the first meeting of the Club since the Farmers' Round-up at the masonic temple in February. Although this is a very busy time of the year over 50 members were present. In the morning Mr. Norman Williamson, of Battle Creek, gave a demonstration in fire fighting with a small hand extinguisher which contained a liquid which instantly put out both gasoline and electrical fires. After a fine dinner the afternoon program was opened with a song by the Club. Miss Julia Richardson rendered two piano selections, Mrs. A. C. Wisner sang two solos, Miss Hazel Crosby gave readings, all of which were very much enjoyed. Dr. C. C. Mix gave a very interesting and instructive talk on tuberculosis in cattle, and Mr. J. H. Brown discussed farm fire fighting. The next meeting of the Club will be held the last Wednesday in May with Mr. and Mrs. J. A. Shultz.—Cor. Sec.

Discuss Broad Topics.—The May meeting of the Wixom Farmers' Club was entertained by Mr. David Gage and Mr. and Mrs. R. D. Stephens. Owing to the busy season of the year the attendance was not as large as usual, about 50 being present. But what was lacking in numbers was made up in zeal. After a very substantial and self-satisfying dinner, and some time spent in a social way, the meeting was called to order by President B. T. Nicholson and a good lively program was rendered, consisting of music, recitations, readings, discussions, question box, and various other things. The question for discussion, "Resolved, that there should be, or ought to be, some rule of closure whereby congress could prohibit filibustering," was discussed quite at length, but opinion in regard to it seemed to be about evenly divided, as a motion to adopt resulted in a tie vote. The question box disclosed some important and interesting questions. The torpedoing of the Lusitania came in for its share of attention and criticism, resulting in a resolution denouncing it as an outrage upon and against the civilization of the twentieth century, which was unanimously adopted.—Mrs. R. D. Stephens, Cor. Sec.

Community Work.—The Albion Farmers' Club met at the residence of Mr. and Mrs. John McClure, of Marengo, Saturday, May 1. One of the regular Farmers' Club dinners was served at 12:30. The Club was called to order by President Emery at 2 o'clock. Mrs. S. A. Bascom presented the subject of providing a manual training outfit for the boys of the Starr Commonwealth. A motion prevailed that the Albion Farmers' Club undertake to raise the required sum of money to furnish such equipment and a committee was appointed to carry forward the project. The sum of \$51 was pledged by those present, which was considered a good beginning. Mrs. Mary Henry opened the literary program by reading an instructive selected article entitled, "When the Turk leaves Europe." The second number was a very interesting report of a trip to California and return by Mrs. Anderson Dickie. This was followed by a good talk on the same subject by Mrs. David McKinney, who was her traveling companion. Mr. Bascom then read a selected poem on "The Single Tax" as an introduction to a talk on that subject by E. A. Ismon, of Pontiac. If the Club has an honorary membership list, Mr. Ismon's name is surely found there, and those present indicated in a hearty manner either their pleasure at again listening to him or their endorsement of the ideas set forth. A roll, with sentiments, followed. A penny march closed the exercises of the day. The Club adjourned to meet with Mr. and Mrs. S. A. Bascom the first Saturday in June.

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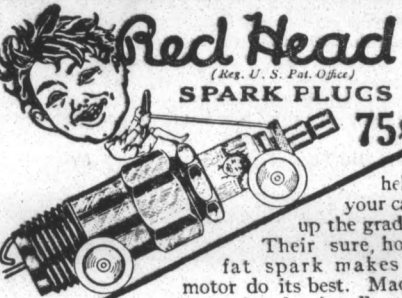
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Markets.

WEATHER FORECAST.

Weekly weather forecast for the week beginning Wednesday, June 2, for the region of the Great Lakes, generally fair weather may be expected; temperature changes will be unimportant.

GRAINS AND SEEDS.

June 1, 1915.

Wheat.—Wheat values fell rapidly last week. At three sessions the decline amounted to 12½¢ for cash grain. The reason appears to lie in several causes. While reports of damage to the new crop continue to come forward they are being modified and many fields which inspectors thought would not yield five bushels per acre promise now to yield two or three times that amount. Another cause is that new wheat has already started from the fields in Texas to the northern markets. However, the chief reason for the decline is that a large number of speculators loaded up with May wheat expecting that with the heavy selling to foreigners many dealers would find themselves short of May delivery which would cause a sharp advance during the closing days of that month. This, however, did not happen and these speculators were left with considerable holdings on their hands which they were obliged to throw on the market at a time when buying was slow. As a result prices dropped and the speculators lost money. July wheat and futures declined much less than cash. One year ago No. 2 red wheat was quoted at 97¢ per bushel. Prices for the past week are:

	No. 2 Red.	No. 1 White.	July.
Wednesday	1.49	1.45	1.26
Thursday	1.44	1.40	1.26½
Friday	1.42	1.38	1.26
Saturday	1.41	1.37	1.25½
Monday	1.38	1.34	1.20½
Tuesday	1.38	1.34	1.20½

Chicago.—July wheat \$1.21; Sept., \$1.17 per bushel.

Corn.—Notwithstanding the heavy decline in wheat values, prices for corn have been well maintained and a fractional advance recorded during the week. The weather has not been ideal for the growing crop; cold east winds and in some places too much moisture have given the corn a rather unpromising beginning. This, with a normal amount of buying for the season and moderate deliveries at primary points helped to maintain values. One year ago No. 3 corn was quoted at 73¢ per bushel on the local market. Quotations for the week are as follows:

	No. 3 Mixed.	No. 3 Yellow.
Wednesday	76	77
Thursday	76	77
Friday	76	77
Saturday	76	77
Monday	76½	77½
Tuesday	76½	77½

Chicago.—July corn 75.4c; September 75.7c per bushel.

Oats.—This grain followed wheat in its downward journey, but the decline in oats was proportionately less. One influence that seemed to weaken the market was a request from the British government that shipments scheduled to go forward soon be delayed. One year ago standard oats were quoted at 43½¢ per bushel. Quotations are as follows:

	No. 3 Standard.	No. 3 White.
Wednesday	56	55½
Thursday	56	55½
Friday	56	55½
Saturday	56	55½
Monday	54	53
Tuesday	54	53

Chicago.—June oats 49.4c; July oats 47.7c; Sept. oats 43.4 c per bushel.

Rye.—This cereal has declined with wheat with No. 2 cash at \$1.15 per bu. The market is lifeless.

Beans.—Trade rules 5c higher. Detroit quotations are: Cash \$3.10; July \$3.15. Chicago trade is quiet and steady. Pea beans, hand-picked choice, quoted at \$3.20; common \$2.95 @ \$3.10; red kidneys \$3.25 @ \$3.65.

FLOUR AND FEEDS.

Flour.—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$7.90; seconds, \$7.70; straight \$7.50; spring patent \$8.10; rye flour \$6.70 per barrel.

Feed.—In 100-lb. sacks, jobbing lots are: Bran \$25; standard middlings \$29; fine middlings \$32; cracked corn \$33; corn and oat chop \$30 per ton.

Hay.—Quotations steady. Carlots on the track at Detroit are: No. 1 timothy \$18 @ \$18.50; standard \$17 @ \$17.50;

No. 2, \$16 @ \$16.50; light mixed \$17 @ \$17.50; No. 1 mixed \$16 @ \$16.50; No. 1 clover \$14 @ \$14.50.

Chicago.—Offerings are moderate and demand good. Prices are steady. Choice timothy \$18 @ \$19; No. 1, \$17 @ \$17.50; No. 2, \$15.50 @ \$16.

New York.—Higher. No. 1, \$23.50 @ \$24; No. 2, \$21.50 @ \$22.

DAIRY AND POULTRY PRODUCTS.

Butter.—Demand is good and offerings of high quality. Prices are unchanged. Extra creamery 28c; firsts 27c; dairy 21c; packing stock 18c.

Elgin.—Market firm with demand good and receipts large. Quotation for the week 28c.

Chicago.—Market is firm at prices ½¢ lower than last week. Demand for storage purposes good. Supply liberal. Extra creamery 27½¢; extra firsts 26½¢ @ 27c; firsts 25¢ @ 26c; seconds 22¢ @ 24c; packing stock 19½¢.

Poultry.—Market liberally supplied. Good demand, however, has advanced prices except for broilers. Live.—Broilers 30 @ 32c; hens 16 @ 13½¢; ducks 17 @ 18c; geese 10c.

Chicago.—Market steady. Offerings light and demand good. Fowls, good weights 14c; spring chickens, 2 lbs. and up, 28 @ 30c per lb; 1½ lbs. 24 @ 27c; small 20 @ 22c; ducks 13c; geese 8 @ 9c; guinea hens \$2.75 @ 3 per doz.

Eggs.—Increased demand caused an advance of ½¢. Fresh stock sells at 18½¢ per dozen.

Chicago.—The market is ruling firm at higher prices, notwithstanding the larger receipts. Miscellaneous lots, cases included, 16½ @ 18c; ordinary firsts 16 @ 17c; firsts 18c.

Veal.—Quoted steady at 12 @ 13c for fancy, and 10 @ 11c for common.

FRUITS AND VEGETABLES.

Apples.—Market firm at unchanged prices. Supply is light and demand is satisfactory. Baldwins \$4 @ 4.25 per bbl; Ben Davis \$2 @ 2.50; Steele Red \$4 @ 4.50.

Chicago.—Market steady for sound fruit of good color. Supply is light. On account of small supply choice stock is firmly held. Higher prices have restricted trading. Baldwins \$4.25 @ 4.50; Roxbury Russets \$4 @ 4.25; Northern Spy \$4 @ 6.

Potatoes.—Market firm with prices slightly higher. Quoted at 38 @ 40c per bushel in sacks. At Chicago the market is firm with demand fair. Receipts light. Michigan white in bulk are quoted at 45 @ 50c per bushel.

WOOL.

Boston.—The general wool market is developing strength. The markets of this country seem to quote prices on a lower level than do any other important wool trading centers, which should react in favor of strong to higher prices here. Both British and Australian markets have made recent advances. This likely accounts for the willingness on the part of dealers to meet the American growers' asking price. Manufacturers are getting anxious and their representatives may be found in the field paying top quotations for desirable lots. Farmers in Michigan are getting from 27 @ 30c at local points. While a good many have sold their fleeces there is considerable wool being held by producers for better prices. Boston quotations are: Michigan unwashed delaines 26 @ 27c; do. combing 33 @ 34c; do. fine 24 @ 25c; do. clothing 27 @ 30c.

GRAND RAPIDS.

First home-grown strawberries are in the market, selling at 15c per quart. Frosts have cut the yield of the early berries but the later crops promise well. Prices on the city market are as follows: Potatoes 50c; pieplant 40c; beet greens 80c; asparagus 80c; spinach 35c; lettuce 8c. Eggs are quoted at 17c; dairy butter at 21c. Live poultry quotations continue firm at 14 @ 15c for fowls; broilers 28 @ 30c. Wheat is off to \$1.28 while beans are a little higher, quotations to farmers for white pea beans being \$2.80.

DETROIT EASTERN MARKET.

Farmers' wagons brought in a fair amount of produce Tuesday and buyers were taking hold in a satisfactory manner. Potatoes are up to 60c; lettuce 70 @ 75c for head and 50 @ 60c for leaf; asparagus, six bunches 40 @ 50c; eggs 25c; chickens 70 @ 90c as per quality; loose hay is firm at \$20 @ 23c per ton. No butter in sight.

THE LIVE STOCK MARKETS.

Buffalo.

May 31, 1915.

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

Receipts here today as follows: Cattle 105 cars; hogs 115 d. d.; sheep and lambs 26 d. d.; calves 1600 head.

With only 105 cars of cattle on our market here today and 12,000 reported in Chicago, our market was excited and irregularly higher on all classes of cattle showing any fat and quality, selling from 25 @ 35c per cwt, above last Monday's prices. At the close everything is cleaned up and the market closed strong at the advance. However, our advice would be to be careful about buying cattle to come here for next Monday, as we think if there is any cattle of consequence to be had in the country they will be bought this week to be shipped here for next Monday's market. If this cattle market is not broken and a take off in prices next Monday, we do not expect to see any take off on good cattle any more this year.

Our market was full strong to a shade higher on all grades of hogs and a very satisfactory trade considering the runs and conditions at other points. We sold all grades of hogs, outside of extreme heavies, at \$8.15; plain and heavy kinds \$7.75 @ 8; roughs \$7.60 @ 7.75, a few extra a little bit more; stags \$5 @ 6. Late market was a little bit draggy, but about everything sold at the close.

The market was active today on lambs and sheep, with prices 15c lower than the close of last week; most of the choice handy yearling lambs selling at \$10.50. Look for steady prices the last of the week, with moderate receipts.

We quote: Spring lambs \$11 @ 12; cull to fair \$6 @ 10.50; yearlings lambs \$10 @ 10.50; bucks \$3.50 @ 5; handy ewes \$6 @ 6.25; heavy do \$5.50 @ 5.75; wethers \$7.25 @ 7.50; cull sheep \$3 @ 5. Veals, choice to extra \$9.25 @ 9.50; fair to good \$7 @ 9; heavy calves \$5 @ 7. Our advice to shippers is to be careful on calves weighing 200 lbs. and over, as they have to be sold about \$1 @ 1.50 below the others.

Chicago.

May 31, 1915.

Cattle. Hogs. Sheep.
Receipts today..11,000 31,000 8,000
Same day 1914..17,502 35,092 11,232
Last week.....40,052 145,684 51,526
Same wk 1914..42,501 131,844 76,476
Shipments from here last week amount to 8621 cattle, 13,731 hogs and 1,717 sheep, comparing with 13,358 cattle, 15,904 hogs and 6133 sheep a year ago.

Memorial Day sees a small cattle supply and well maintained prices for all desirable offerings, a few of the better class looking a little higher. Some prime hogs sold 5c higher early, with a \$7.90 top, but packers refused to back up the advance, and before long prices averaged 5c lower than on Saturday. Hogs marketed last week averaged higher, with some taken at \$11.75 per 100 lbs. Prime clipped were a little higher, some that were not prime being taken at \$10.25.

Cattle prices averaged higher last week, with decreasing receipts and a good call for desirable offerings, Wednesday being the high day, as a sharp decline in prices took place later, when the demand fell off a good deal. While inferior steers of light weight were sold at \$7 @ 8, there was not much trading below \$8, and the greater part of the sales occurred at \$8.15 @ 9.10, with a very fair showing of steers at \$9.15 @ 9.25 by Wednesday. Medium to good steers went at \$8.50 @ 8.75, good to choice steers at \$8.80 @ 9 and prime weighty lots at \$9.05 @ 9.25. The best class of yearlings brought \$9 @ 9.35, with sales of good yearlings at \$8.80 and over and sales all the way down to \$7.50 @ 8.50 for fair to medium kinds. Butchering cows and heifers were good sellers at \$5.30 @ 9, prime little heifers going the highest and the best cows at \$7.50 @ 7.75. Cutters went at \$4.55 @ 5.25, canners at \$3 @ 4.50 and bulls at \$4.90 @ 7.75. Calves were marketed freely from the dairy districts and met with a good demand at advanced prices for the better class, light vealers going at \$8.50 @ 9.85, while the heavier calves sold at \$5 @ 8. On Thursday the big packing concerns received a train of distillery-fed cattle consigned to them direct, and this helped to depress the open market for cattle, although a carload of heavy cows sold at \$7.75, with bulls going at unchanged prices. It was announced that the packers would observe Decoration Day as a holiday, and this cut down the demand for cattle during the latter part of the week. Buyers discriminated against undesirable cattle, and killers insisted upon a discount of 25 @ 35c on grassy cows, while lots of dairy cows sold at a discount of 40 @ 60c from prices paid readily for cows of a like condition of flesh. Yearling cattle were marketed freely, and there was too generous a showing of half-fat yearlings, these going at a large discount. Even the best yearling steers and heifers sold off sharply late in the week, while fat heavy steers closed 10 @ 15c higher than a week ago.

Hogs started off last week with plenty on sale, the Monday run being

46,816 head, but the sudden decline of 15c in the market caused such a cutting down of later receipts that prices had several good advances. It has been the constant practice for some time past for country shippers to materially lessen shipments of hogs to market after every sharp decline in prices, and this course is responsible for the strong undertone most of the time. Hogs are making good money for their owners, and it is natural that most stock feeders should hold back underweights, recent receipts having averaged 234 lbs., comparing with 238 lbs. a year ago and 245 lbs. two years ago. Eastern shippers are taking the best light weights at top prices, as usual, and pigs sell far below hogs. Shipments of hogs from here are only moderate. At the week's close hogs sold at \$7.20 @ 7.85, with the best heavy hogs taken at \$7.70 @ 7.75 and pigs purchased at \$6 @ 7.30. Prices were 5c higher than a week ago.

Lamb and sheep prices fluctuated wildly during the past week, with bad breaks in aged sheep during the latter part of the week, as well as in fat fed lambs and spring lambs. Receipts continued meager in the extreme, and prime clipped lambs sold higher than ever in the history of the trade, but the boom in prices is checking the demand in the retail meat markets, with lamb chops retailing in Chicago markets for 40c per pound, and this causes reactions from high values. Closing prices of clipped flocks were as follows: Lambs \$6.50 @ 10.25; yearlings \$6.75 @ 8.75; wethers \$5.50 @ 7; ewes \$3 @ 5.50; bucks \$4.25 @ 5. Earlier in the week top for clipped lambs was \$10.65. Spring lambs closed at \$7 @ 11.50 per cwt.

Horses were in liberal supply for another week, although the receipts were smaller than a week earlier. The demand continued liberal for army horses to ship to European countries, and prices stood firm at \$135 @ 150 for mounts and \$175 @ 200 for artillery horses. Inferior animals sold at \$60 @ 95, farm workers at \$100 @ 140, farm mares at \$145 @ 175, commercial chunks at \$195 @ 240 and expressers at \$200 @ 215. Choice drafters were scarce and largely nominal at \$245 @ 285.

THE CROP SITUATION.

Excessive moisture has rather taken the place of insect damage as a source of complaint in the wheat-growing sections, both winter and spring, says this week's Bradstreet's. But while there is a perfect flood of rain-damage reports from the southwest, it is noted that jobbers of merchandise are buying freely for fall, an indication that men on the ground look for favorable crop conditions. Warm growing weather is undoubtedly needed to properly mature winter wheat and give spring wheat, which is in practically perfect condition, good progress. Losses from early exuberant crop estimates of winter wheat are placed at 60,000,000 bushels. On the other hand, spring wheat promises to fully make good for this on the high condition now prevailing and the 10 per cent increase in area.

Harvesting in Texas starts this week and will be on in Oklahoma by June 15. Corn planting is delayed by rain in the northwest, and some corn in the regular corn belt has rotted in the ground from rain and cold weather. A good deal of replanting is reported necessary in the southwest, Iowa and Nebraska.

In the middle Atlantic and New England states warm growing weather is now most needed. The onion crop in Lafourche Parish, La., (the second most important onion growing area in the United States), is not very good, being estimated at only 76 per cent of normal, owing mainly to the drought and frosts. Cotton crop reports are good, more uniformly so than at any previous date this season, although the acreage is fully 15 per cent smaller all around.

LIVE STOCK NEWS.

Bert Myers, of Rutledge, Mo., marketed in Chicago recently a load of 700-lb. Angus-Hereford cross yearlings that brought \$9.10 per 100 lbs. They were only nine months old and were fed on ground corn, cob meal and cottonseed meal since being weaned.

Several Illinois stockmen arriving in the Chicago market recently reported that stock were getting scarce and that it was hard work to make up a load of either cattle or hogs. Iowa stockmen make similar statements.

The receipts of sheep and lambs in the six leading western markets this year have been in round numbers a million head less than for the corresponding period last year. This is sufficient explanation of the unprecedented boom that has taken place in prices, with prime fed lambs bringing higher prices than were ever paid before.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

May 27, 1915.

Cattle.

Receipts 1190. There was a fairly good supply of all kinds of live stock on sale at the local yards this week and in nearly every department an increase in prices was shown. Fairly good work was done by the railroads and practically everything was cleaned up before dark.

In the cattle division dry fed butcher grades were very active at an increase of 10¢ to 15¢ over last week and all other grades brought strong last week's prices. One extra fancy load of 20 steers averaging 1120 was bought by Parker, Webb & Co. for \$8.50 per cwt. They were fed by C. A. Hofmeister of Unionville. There is as yet nothing doing in milch cows, stockers or feeders as they cannot be taken back into the country for feeding purposes; this condition should be over in a short time as no disease has developed in the cattle placed here several weeks ago by the State Live Stock Commission to wander over the yards and be watched for symptoms of hoof-and-mouth disease.

Best heavy steers \$8.50; best handy weight butcher steers \$7.75@8.25; mixed steers and heifers \$7.50@8; handy light butchers \$6.50@7.25; light butchers \$6.50@7; best cows \$6.25@6.50; butcher cows \$5.50@6; common cows \$4.25@5; canners \$3@4; best heavy bulls \$6.50@7; bologna bulls \$5.50@6.25.

Reason & S. sold Buck & S. 6 steers av 853 at \$7.25, 1 bull wgh 580 at \$6.50, 1 cow wgh 780 at \$5.75; to Ohio Prov. Co. 2 bulls av 1040 at \$6, 14 steers av 1007 at \$7.75; to Parker, W. & Co. 3 cows av 1127 at \$6.25; to Kamman B. Co. 2 do av 940 at \$6.50, 10 steers av 925 at \$7.35, 3 do av 666 at \$7.40; to Thompson Bros. 1 bull wgh 1640 at \$6.35; to Mich. B. Co. 2 cows av 890 at \$5.75, 6 do av 1013 at \$5.95, 1 do wgh 830 at \$4.25, 2 do av 1155 at \$5.50, 11 do av 1125 at \$6.25, 1 do wgh 1050 at \$5.75, 1 do wgh 1040 at \$4; to Breitenbeck 70 steers av 869 at \$7.75; to Mich. B. Co. 6 cows and bulls av 853 at \$6.25, 4 bulls av 1095 at \$6.25, 1 do wgh 880 at \$5.75; to Buck & S. 1 steer wgh 1330 at \$8.25; to Bresnahan 6 steers av 758 at \$7, 1 do wgh 630 at \$6.30; to Mich. B. Co. 2 steers av 1380 at \$8.40.

Sandel, S., B. & G. sold Ohio Prov. Co. 1 steer wgh 1010 at \$7.90; to Buck & S. 1 do wgh 800 at \$7.40; to Hammond, S. & Co. 2 bulls av 1510 at \$6.50; to Newton B. Co. 6 butchers av 1046 at \$5.50, 12 do av 800 at \$7.35, 6 do av 650 at \$7; to Mich. B. Co. 2 do av 910 at \$7, 2 do av 895 at \$6, 1 cow wgh 950 at \$5.75; to Ohio Prov. Co. 1 bull wgh 1550 at \$6.85; to Mich. B. Co. 3 cows av 970 at \$5.50, 1 bull wgh 680 at \$6; to Rattkowsky 1 cow wgh 1000 at \$5.50.

Veal Calves.

Receipts 863.

The veal calf trade was active from start to finish and full 50¢ higher than last week. Good grades sold at \$9@9.50 and common and mediums from \$7@8.75.

Reason & S. sold Mich. B. Co. 2 av 230 at \$9.25, 4 av 155 at \$9.25, 2 av 180 at \$9.25, 5 av 155 at \$9.50; to Sullivan P. Co. 3 av 145 at \$9.50, 13 av 130 at \$9.

Sheep and Lambs.

Receipts 1343.

The supply of sheep and lambs was very small and the quality none too good, while lambs held full steady with last week, sheep were from 50¢ @ \$1 lower. Light thin lambs for feeding purposes should not be sent here at present as the butchers don't want them and nothing can as yet go back to the farm. Best lambs \$10.25; fair do. \$9@9.50; light to common do. \$6@7; fair to good sheep \$6.60@6.75; culls and common \$4@5.

Sandel, S., B. & G. sold Hammond, S. & Co. 2 sheep av 170 at \$6.50, 7 do av 110 at \$5.50, 6 yearlings av 130 at \$8.50, 34 do av 110 at \$7.50, 5 lambs av 75 at \$10.

Roe Com. Co. sold Sullivan P. Co. 2 sheep av 175 at \$5, 11 do av 110 at \$6.

Hogs.

Receipts 7489.

Up to noon no hogs had been sold but Chicago opening and closing was strong 5¢ higher than on Wednesday will have its effect here and prospects are \$7.70@7.75 for all grades.

Bishop, B. & H. sold Parker, W. & Co. 3200 av 200 at \$7.75, 250 av 275 at \$7.70.

Roe Com. Co. sold Sullivan P. Co. 300 av 200 at \$7.75.

Sandel, S., B. & G. sold Hammond, S. & Co. 1100 av 200 at \$7.75.

Reason & S. sold same 350 av 190 at \$7.75.

Friday's Market.

May 28, 1915.

Cattle.

Receipts this week 1300; last week 1551; market steady; quotations are for dry-fed stock. Best heavy steers \$8.50; best handy weight butcher steers \$7.75@8.25; mixed steers and heifers \$7.50@8; handy light butchers \$6.50@7.25; light butchers \$6.50@7; best cows \$6.25@6.50; butcher cows \$5.50@6; common cows \$4.25@5; canners \$3@4; best heavy bulls \$6.50@6.75; bologna bulls \$5.50@6.25.

Veal Calves.

Receipts this week 1063; last week 1197; market strong. Best \$9.50@10; others \$7@9.

Sheep and Lambs.

Receipts this week 2184; last week 2259; lambs steady; sheep 75¢@1.50 lower than last week. Best lambs \$10.25; fair do. \$9@9.50; light to common lambs \$6@7; fair to good sheep \$6@6.50; culls and common \$3.50@4.75.

Hogs.

Receipts this week 9360; last week 12,319; market steady; all grades at \$7.75.

Veterinary.

Punctured Jaw.—The lower jaw bone was punctured by a pitchfork, causing jaw bone to enlarge, since then pus has formed at different times and discharges from wound. We have applied peroxide of hydrogen, also tincture of iodine, but with poor results. L. T., Thompsonville, Mich.—The hole through bone or surface of bone should be curetted in order to remove diseased portion, then apply one part iodoform and nine parts boric acid twice a day; or apply one part carbolic acid and 19 parts water twice a day.

Indigestion.—I have a nine-year-old mare that is not thriving, although she is a hearty eater. I suspect that she is developing heaves, if so I would like to know what to do. P. A., St. Charles, Mich.—Feed her no clover, or musty, badly cured fodder, increase her grain ration and give her ½ dr. of fluid extract lobelia and ½ oz. of Fowler's solution at a dose in feed two or three times a day.

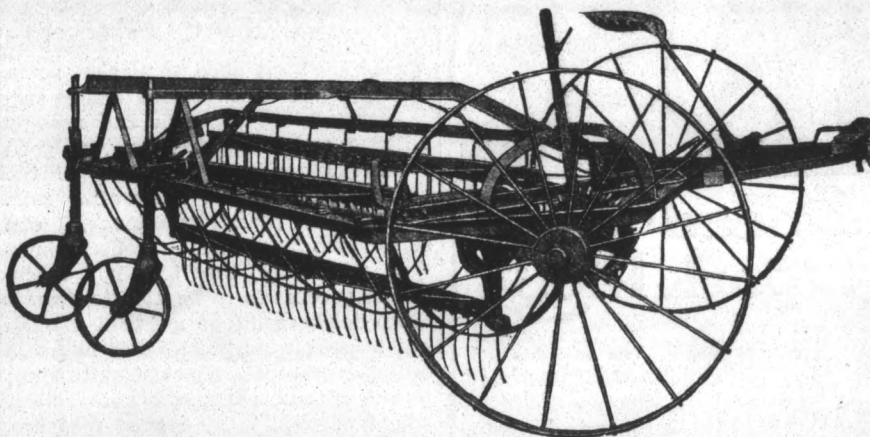
Stifle Lameness.—Feeding Brood Mares.—I have a yearling colt that has stifle trouble, joint is enlarged and our local Vet. has been treating him for the past 90 days, but he is no better. I also have two brood mares that will foal some time next August and I would like to know how to manage them. E. K., East Jordan, Mich.—Apply one part red iodine mercury, one part powdered cantharides and eight parts fresh lard to stifle every two weeks. Your mares should be fed and worked much the same as if they were not in foal. They should not be driven fast, nor overworked, and can be used to within a week or ten days of foaling.

Acute Indigestion.—Ruptured Stomach.—I bought a five-year-old mare last February, which took sick a few days ago; I called the Vet. who said she had gastritis; some time later stomach ruptured and she died. We opened her, and found quite a number of bots and worms; besides the wall of stomach seemed to be pretty much destroyed. We had been feeding her potatoes and our Vet. thought they caused her death. H. E. A., Oxford, Mich.—I do not believe the bots or worms caused her death, but perhaps the potatoes brought on indigestion, causing enough gas to rupture stomach. When digestion is going on and death occurs at this time, the juices of the stomach have a tendency to destroy inner membranes of it.

Nasal Catarrh.—Every spring my horse is troubled with discharge from nose, during which time he coughs some. Do you believe this ailment is contagious? A. A. L., Willis, Mich.—I do not believe this to be contagious, but entirely local. Give a teaspoonful of powdered sulphate iron and a tablespoonful of ground gentian at a dose in feed three times a day.

Thick Urine.—I have a mare that appears to be healthy, but her urine is thick, yellow and a sediment settles when it is allowed to stand. I feed her bran mash with a teaspoonful of saltpeter in it once a week. I also feed her carrots once a day, but her bowels are too loose. W. L., Lake George, Mich.—Give your mare a teaspoonful of acetate of potash at a dose in feed three times a day.

Weakness.—I have a cow that is failing, gradually growing thin, eats hay better than grass, but is rather fond of grain and is inclined to remain down most of the time. When she gets up she quivers all over, and I would like to know what to do for her. C. V. W., Durand, Mich.—Give her 1 dr. of ground nuxvomica, ½ oz. of ground gentian, and ½ oz. of hypsulphite of soda at a dose in feed three times a day.

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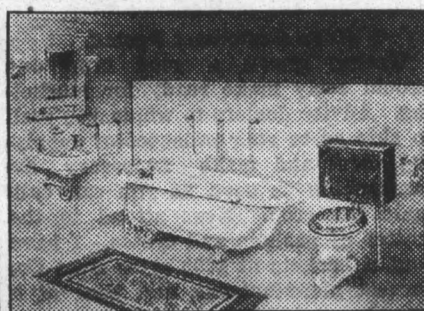
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IMPROVED White Fox Beans, 28 bu. per A. Bu. \$3.00, ton bu. \$2.90 per bu. Screened, sacks free. W. Wyandotte eggs 16 at \$1. FRANK BARTLETT, Dryden, Mich.

BUY FEED—CAR LOTS AND LESS. Cottonseed Meal, Hominy Feed, Douglas Gluten, Bran and Middlings. J. E. Bartlett Co., Jackson, Michigan.

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94 Acres, 9-room house, 2 barns, hen, hog and tool houses; other buildings; fruit. 1 mile to town. Owner being a woman, will sell to a quick buyer for \$1,800; \$1,000 cash. Must go at once. HALL'S FARM AGENCY, Owego, Toga Co., New York.

Farms Wanted.—We have direct buyers. Don't pay commissions. Write describing property, naming lowest price. We help buyers locate desirable property free. American Investment Association, 10 Palace Bldg., Minneapolis, Minn.

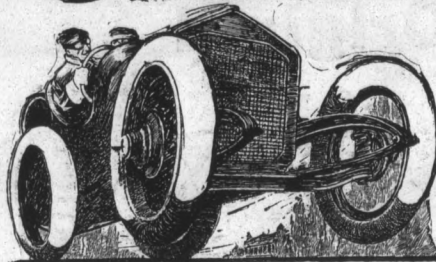
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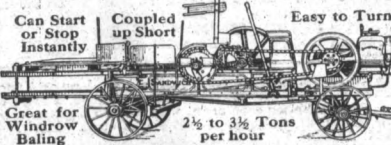
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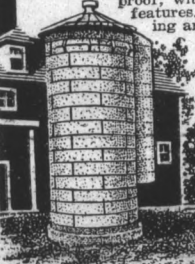
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The CANTON CULVERT and SILO CO.,
BOX 20, CANTON, OHIO



Farm Commerce.

Marketing the Strawberries

I HAVE been able to market some crops of strawberries quite successfully in my own and near-by villages, and know that the very good returns I realized were due to the quality of berries I offered for sale. After many years' experience, I can state some facts about the berry business, which are, that the main essential to success is to be able to grow a large fairly good berry, firm enough not to soften too much in 48 hours in ordinary weather if picked quite ripe; to put in the basket uniform large and sound berries, to give good measure, and to continue this practice year after year until one has established a reputation of furnishing only this kind of goods. To get letters from dealers who have sold your strawberries in former years asking for the exclusive sale of your berries indicates that the right methods have been used.

First Produce Good Berries.

I would emphasize the giving of good measure and putting large berries in the bottom of the baskets. A few berries on top of a basket level full is a good investment. Consumers are always looking for bargains, and it makes them feel good to get all or more than they paid for. The main requisite of a berry is that it be large and attractive. Again, many people are so accustomed to the sour commercial berries picked green, that they would be most agreeably surprised to find berries that tasted sweet and had some of the real strawberry flavor. A superior berry furnishes the basis of success. I grow such large sweet kinds as the Marshall, Wm. Belt, also the Brandywine and Corsican by practically the hill method.

Keep Customers Posted.

Having grown a good crop one should early make ready for marketing. Advise dealers to whom you wish to ship as to your prospect of supplying them and make necessary arrangements as soon as you can estimate the crop. Next attend to the matter of baskets and crates. I have bought baskets at 1000 rates from the nearest manufacturer, and then at a very low price I have picked up second-hand crates in which southern berries were shipped. There is always a large loss of baskets and crates in handling berries, even in a local market, so I get enough to market about two-thirds of my estimated crop, as one will do well to get one-third back in time to use them.

The Best Pickers.

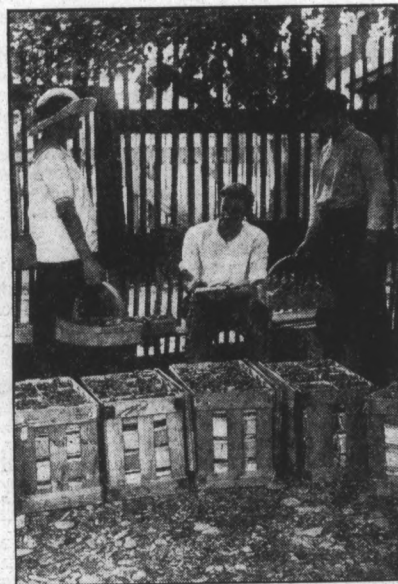
The next consideration is the engaging of pickers. Middle-aged women are generally the best pickers, but those having large fields may have to use all pickers available. Boys will often go out and pick an order when the plants are wet with dew or rain and women dislike to go out. The superintendent—generally a member of the family—uses tact and patience in instructing the pickers to take only ripe berries, put in only the sound ones, and fill the basket a little heaping, and turn down the hulls on the top layer, or to pick only such berries as they would be pleased to buy. Some will readily "catch on" and do good work, while some are slow to learn. One is fortunate who can ob-

after year as they will understand just the same set of good pickers year how the work should be done. I furnish my pickers with carriers containing either four or six baskets.

Inspecting and Crediting.

I have a shelter or shade with a long table of boards on which to place baskets sufficient to fill several crates. As the berries are brought in and placed on this table the inspector carefully examines each basket, sees that it is properly filled with only good berries, while another keeps account of the pickers and packs the baskets in crates. Each picker's name is written in the day book at the head of a column and under it he or she is credited with the berries brought in. When through picking for the day the figures are footed up and a paste-board check issued showing the amount, which is cashed later.

If there are sufficient pickers to clean up the ripe berries I prefer to pick afternoons, place the berries in a cool cellar or refrigerator room and deliver very early the next morning. Sometimes the dew is on so late in the



The Boxes are Carefully Inspected and Credited to the Picker.

morning that it is not worth while to get pickers out for the forenoon. If there are orders to be filled and I am short of help I pick forenoons, and deliver or ship in the afternoon.

The Market.

The nearest good home market is always best. I first supply my own village and large quantities are sold at my home at retail. My next best market has been a prosperous village not close to railroad lines, where it is expensive to ship in berries. I deliver a large load of berries each morning to the largest dealer, who has obtained all the trade and who asks each year for the exclusive sale of my berries. Berries are shipped to other nearby villages as I am able to supply them. Incidentally I get a large demand for the smaller later berries for canning.

By practicing the above methods I was able to realize at the rate of \$700 net per acre for strawberries last year but the season was not very favorable, the retail price at my place was from 13 to 15 cents per basket, or two for 25 cents, the latter price was toward



Experience with all Classes of Pickers Shows Middle Aged Women the Best.

the last when berries were small, but not for the bulk of the crop. Much of the crop was wholesaled for 12½ cents. The price paid pickers was one and one-half cents per quart for most of the crop. This left us close to 10 cents for the portion of the crop sold to dealers.

New York.

W. H. JENKINS.

A LETTER TO JACKSON DAIRY FARMERS.

The following letter has just been received from Bennett Clancy, President of the Jackson County Milk Producers' Association, Munith, Mich.:

The milk producers of Jackson county, most of whom send their milk to the condensary, believing that they would be able to secure more satisfactory returns by dealing collectively rather than individually, have formed themselves into an association. It has been stated that all or nearly all the condensing factories in the state are allied. Does it not stand to reason that some form of an alliance of the patrons of these several condensaries would prove of mutual benefit? As president of the Jackson County Milk Producers' Association I take the liberty of calling upon our state supporter of agricultural advancement, The Michigan Farmer, to aid us in this movement. If you, fellow subscriber, are a patron of one of these condensaries, will you not take a few moments to write the undersigned, stating your views of this matter?

The basis of future agricultural advancement in step with other industrial activities must be co-operation. The sooner we realize this fact and take advantage of its possibilities, the sooner will the rural problem be solved. Now, brother dairymen, let us get together and see if we can not be of mutual aid in this one thing, the disposition of our raw milk.

BENNETT CLANCY.

The movement on the part of the milk producers of Jackson county indicates the type of dairy farmers in that section of our state. These farmers have set about to improve the marketing conditions of a product that brings to them a substantial portion of their income. Just what success will attend their efforts is sure to depend in no small degree upon their attitude toward the problem they now confront. Inasmuch as the selling of milk will continue for all time, a small temporary advantage should not be allowed to over-shadow an important permanent improvement.

If such an organization is going to undertake contracts with the condensaries or creameries it should become a business entity by incorporating under the state laws. A complete business organization should be effected with authority delegated to the proper officers that they might carry out the purposes with as little handicap as is possible consistent with the proper safeguarding of the rights as well as the liabilities of the society. The manager should not only be a person whose integrity is absolutely above question, but he should have a definite knowledge of the conditions with which he is to deal. We thoroughly believe that the services of a competent attorney should be retained to assist in organization and in drafting contracts, etc., and if much book-keeping will be involved care should be taken that a right start is made, for it will be found the best policy to make clear to the members at stated periods the exact condition of the association's finances. We would further suggest that the secretary correspond with the bureau of markets, Washington, D. C., for literature on co-operative organization and management.

Further, if it is the purpose to affiliate producers throughout the entire county it would seem advisable to form small local associations and then federate them into a general organization. Erie county, Pennsylvania, has such an organization known as the Erie County Milk Association, with headquarters at Erie. This society not only produces the milk but delivers it to their own central station where all foreign matter is removed and the milk is standardized to about

four per cent fat, pasteurized, bottled and distributed to consumers. They also have ice cream machinery and a small creamery where they make use of their surplus milk.

NEW SELLING ASSOCIATIONS IN TRAVERSE DISTRICT.

The co-operative method of marketing farm produce is gaining in favor with the fruit and produce growers of northwestern Michigan. The desire on the part of the orchard men and farmers to sell their products at prices that will show interest on their investments in addition to reasonable allowances for labor and brain expenditures is becoming stronger day by day. Therefore the problems concerned with marketing get more and more attention. Co-operative effort appears to make the greatest promises at the present time, hence the great interest along this line. One of the more recent organizations "to get busy" is the Frankfort-Elberta Fruit Association in the western part of Benzie county. This association is bestirring itself in behalf of its members and hopes to be able to report financial victories within the coming three months. The Northport Fruit Growers' Association has taken on a new lease of life and its members are raising the money to free their warehouse from debt. They expect to harvest the largest cherry crop in the history of the Leelanau Peninsula and are anxious that the deal shall be handled in a business-like manner and with profit to the fruit growers. The Custer Fruit Growers' Association is coming to life and getting ready for an active season. New associations are being planned in several neighborhoods, so taken by and large, there is great activity along co-operative marketing lines.

Crop and Market Notes.

Michigan.

Berrien Co., May 25.—Wheat generally good, though some Hessian fly is reported. Oats and meadows look fine. A frost on May 18 injured small fruits and peaches and the grape crop is nearly ruined. More than the usual amount of spraying has been done. The lamb crop is good and the pig crop rather light. Not much wool produced, and the price is around 30c. Butter-fat 28c; eggs 18c; potatoes 30c.

Isabella Co., May 25.—The season has been unusually cold and backward. Quite a large acreage of corn and beans is being planted. Oats are looking good. New seeding good but old meadows poor. Oats 50c; wool 30c; beans \$2.80; cream 24c; eggs 17c; hay \$14.

New York.

Genesee Co., May 25.—Pastures, wheat, rye and meadows have been doing very nicely. A smaller acreage of potatoes and perhaps more corn and beans being planted. The pig and lamb crops about the average. Fruit prospects very good, though farmers are somewhat slack about spraying. The usual amount of wool has been clipped this spring which is selling at 20¢28c. Butter-fat 32¢35c; pork 9c; hogs \$6.50; eggs 18c; wheat \$1.40; oats 60c; potatoes 20c; beans \$2.85@3.25 per bushel.

New Jersey.

Monmouth Co., May 22.—Pastures and meadows are good; wheat and rye looking well. Potatoes, oats and corn are the principal spring crops. Fruit prospects are good and spraying all done. Pigs are scarce, and there are only a few lambs raised here. Market milk 4c per quart net; butter 35¢40c; eggs 18¢24c; veal 10¢10½c live.

Pennsylvania.

Crawford Co., May 21.—Pastures and meadows are looking fine since the rain. Wheat, rye and meadows look very good. A large acreage of oats has been sown, and corn is now being planted. Early potatoes are in but late ones are yet to be planted. Fruit prospects are not very good, as we had some late frosts which did some damage. Spring pigs and lambs are not very plentiful. Wool 25¢27c; butter 25c; eggs 17c; milk \$1.25.

Ohio.

Hardin Co., May 21.—We have had splendid weather, though too dry and cool for corn. Corn planting is nearly completed. Prospects are fine for a good harvest of small grains but oats short and meadows and pastures have not made very good growth. Pig and

lamb crops fair. The wool crop good and sold for around 28c per pound. Butter-fat 29c; eggs 17c; potatoes 30¢40c.

Brown Co., May 22.—Meadows and pastures are looking well. Wheat and rye have been damaged by the chinch bug, which will make the crop lighter than usual. Oats, new grass and clover look well. Corn is mostly all planted but there is much complaint of damage by cutworms. The acreage of tobacco will be smaller on account of the low price. Hogs \$7@7.25; lambs \$8@10; sheep \$4@6; wool 28¢30c.

Warren Co., May 18.—Very cool, dry weather and all crops need rain. Corn sprouted but is not doing very well now. Pastures and meadows are held back by dry weather. Some reports of damage to wheat by fly. Potatoes looking fine and the average acreage planted. A good acreage of sugar corn was planted for the ten canneries in this county, being contracted for at \$9 per ton. Fruit prospects are very good, and more thorough spraying done than usual. The pig and lamb crops were unusually good owing to warm, dry weather during April. Wheat \$1.40; corn 72c; hogs \$7.50; cattle \$6; veal \$8; butter-fat 27c; eggs 16c; potatoes 60c; apples \$1.25 per bushel.

Wisconsin.

Jackson Co., May 24.—The past two weeks have been very cold and wet, delaying farm work, but it is now fine and corn planting is being rushed. The fruit crop is reported badly damaged if not ruined by recent severe frosts. Pastures, winter grain and meadows are in fine condition. Early gardens cut down by frost. Some loss of early pigs. Few sheep kept. Butter-fat 27c; corn \$1 per cwt; oats 60c; flour \$7.50@8 per barrel.

Minnesota.

Lyon Co., May 24.—Spring work is well advanced. Cold, damp weather is hindering the corn somewhat. Two killing frosts last week did great damage to fruit and gardens. Small grains and pastures up to normal. The pig crop is good. Alfalfa will soon be ready for cutting. Wheat \$1.48; oats 45c; corn 63c; butter 25c; eggs 15c; hens 11c; broilers 18c.

Kansas.

Trego Co., May 22.—Weather unusually cold and crops are not doing well. Wheat will not make more than 75 per cent of a full crop. Pastures are extra good and live stock doing fine. Corn planting retarded on account of wet weather. Oats doing well. Old wheat about all marketed, and the price had dropped on account of crop prospects being inflated. Wheat \$1.34; corn 68c; butter-fat 22c; eggs 14c.

Cowley Co., May 24.—Pastures and rye are good. The first cutting of alfalfa is being put up as fast as possible, and is very good. Continued rains have caused damage to crops on low lands. Oats, though backward, are good. Wheat has been seriously damaged by fly and much of it will be plowed up. Fruit prospects are good and all large orchards are being sprayed. The spring pig crop was light. Milk \$1.20 per cwt; butter-fat 25c; eggs 16c.

Illinois.

Marion Co., May 24.—The pastures, wheat, oats and rye are good and the meadows have made a good growth. A good acreage of corn is being planted, and there will also be a considerable amount of stock peas and millet put in. Prospects for apples are good but there will not be many peaches or berries. Quite a lot of spraying being done. Pig and lamb crops short and the wool crop is also short. Wool 30c; lambs 8c; butter-fat 26c; strawberries 10c per quart.

Missouri.

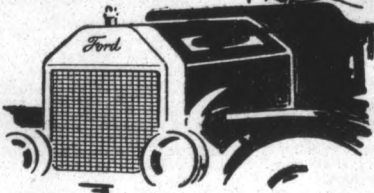
Perry Co., May 24.—Wheat is badly damaged by Hessian fly. Young clover looks good, timothy short, alfalfa fine, and the first cutting in barns. Oats look fine since the rains; pastures are short but improving. Corn looks fine. Apples, pears, cherries and small fruits an average crop, peach crop short. Gardens damaged considerably by dry weather. Old feed is scarce. Corn 90c; wheat middlings \$26 per ton; bran \$26 per ton; timothy \$18; alfalfa \$18.

Warren Co., May 24.—Pastures, wheat, rye and meadows are in fine condition. Oats and corn are doing well. Cane, cowpeas and soy beans are being sown. The pig and lamb crops are fair in size and doing well. Fruit prospects are good and about half the orchards have been sprayed. Some wool at 29c; butter-fat 25c; eggs 16c.

Vernon Co., May 25.—Pastures and small grains are in fine condition. There is some complaint of Hessian fly, but most wheat is looking fairly well. Corn planting not quite finished. There will be a light apple crop but peaches, strawberries and blackberries are quite full. Not a very large pig crop. Wheat \$1.40; corn 80c; wool 26c; butter 16c; eggs 14c; cream 23c; chickens 11c.

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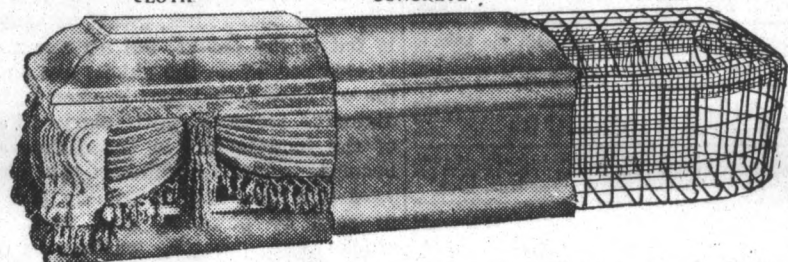
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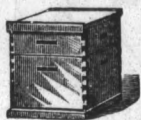
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Poultry and Bees.

JUNE HATCHED CHICKS.

While chicks intended for layers should be hatched early, we find it profitable to hatch some in June and July in order to have springers weighing three or more pounds for the fall market when prices begin to rise. There is a brisk demand here, and I presume in most other sections, for large springers during the Jewish holidays, and while the price per pound is less than we receive in the spring, the net profit is as great because summer chicks may be grown to marketable size at less expense.

Late Chicks Not Hard to Raise.

"June hatched chicks sleep themselves to death," says an old superstition, and there are some persons who still cling to that belief. Like many of the old proverbs, it is a half truth that is apt to lead to wrong conclusions if one accepts it unqualifiedly. Not only June chicks but those hatched in April and May as well, may "sleep themselves to death," under some circumstances, but the causes are easily preventable and if one will give the chicks proper care they may be successfully raised throughout the summer. The usual causes of trouble are lack of protection from the heat, improper feeding, and lice.

Our summer chicks are brooded in heatless brooders that are placed in a grassy yard where there are a number of large elm and maple trees to provide shade. The brooders are simply pine boxes of varying sizes provided with a waterproof sloping top. Each brooder is provided with a 12x18 inch hover that will accommodate 30 or more chicks; a drinking vessel, and dishes of bran, beef scrap, charcoal and grit. Commercial chick feed is fed from the start, being scattered in litter as soon as the chicks learn to scratch for it. The water is changed several times a day, as it becomes warm even in the shade after standing for several hours. Whenever we have any spare milk, sweet or sour, it is fed to the chicks, but no wet mash is ever fed while the chicks are small, for we have found that it often causes digestive troubles, particularly if any of the food is left in the dishes and becomes sour. Adjoining the chick yard is a field that is usually planted to corn or potatoes and here the chicks can scratch, wallow in the loose soil, and gather insects. Grass and young weeds supply all the green food needed.

Protect Chicks from Lice.

It is probable that lice will kill more summer chicks than any other cause. It is so easy to overlook them when one is busy with garden or farm work. Even with our incubator chicks we have to exercise eternal vigilance to prevent the pests from getting a start. Doubtless one method of their introduction into the brooders is through the medium of English sparrows that are always about watching for an opportunity to get at the feed. Cleanliness is the surest preventive. We clean the brooder floors daily. Clean and air the hovers, and twice a week renew the scratching material. If any lice are found the chicks are greased on head and throat with a mixture of lard and kerosene, and the brooder is given a coat of hot white wash in which is mixed a little carbolic acid. As a rule, greasing is unnecessary as the chicks free themselves of what few lice escape our attention, by using the dust baths.

If your early hatches turn out poorly and you haven't as many chicks as you want, don't let the "sleeping sickness" bogey prevent you from hatching some late chicks. Give them clean comfortable quarters, shade,

fresh water, and the same kind of food you use for the earlier hatches; look after them carefully and you should raise as large a percentage of the chicks hatched as you can at any other season.

Ohio.

N. S. GREEN.

LEG WEAKNESS.

I have lost a large number of young chickens and ducks. They get dumpy, their eyes run and stick shut, then they fall over and die. Please tell me the proper way to treat them for the disease, and the proper feed for chicks and ducklings. Genesee Co.

A. E. S.

The above symptoms indicate that the trouble with the little chicks is undoubtedly leg weakness, although if diarrhea is one of the symptoms, the trouble may be white diarrhea. The chief cause of leg weakness is the over-feeding of fat-producing foods. The disease is more common among cockerels, and is almost more prevalent among the heavier breeds of chickens. Curative measures are to substitute bran, wheat and oatmeal for the corn and corn meal. Skim-milk should be given as a drink if possible, and plenty of green food should be fed. The use of the green food is one of the most important measures in treating the disease. If the trouble is white diarrhea the use of sour milk as a drink is recommended. An antiseptic in the drinking water is also good, using about ten grains of the iron sulphate to a gallon of water. This disease is sometimes hard to control, as it may be in the flock and be transmitted through the egg. It may also

BEE-KEEPING FOR THE GENERAL FARMER.

(Continued from first page).

with the certainty of a good fit. It should not be necessary to mention that every swarm of bees should be kept in a hive from which any and all of the frames can be removed for examination.

This is the only way in which you are master of the bees, keep them in immovable frame hives and you at once allow the bees to master the situation. Bees kept in box hives are not as profitable, as those in movable frame hives, for the very reason that any bee-keeper keeping bees in such a condition cannot manage them to the best advantage. Then, too, if disease is near it will probably kill the colonies before its presence is suspected.

One more necessity is the regular reading of a good bee journal. We can never learn too much about the bees and the reading of a bee journal gives us many pointers and knowledge that is very valuable, the knowing of which will pay the price of the subscription many times over.

Kinds of Honey Bees.

Someone once remarked that "pigs is pigs," many are willing to say "bees is bees" and let it go at that.

If you have a few colonies of bees and they are poor honey gatherers and possess other faults, why not improve them by introducing a queen of a pure variety and from a good strain. There is as much difference between a good and poor queen as there is between a good cow and a poor one. A colony headed by a good queen will yield much more profit than one headed by a poor queen. By introducing a pure queen the colony soon becomes full of bees of that variety, the bees from the old queen die off and you have a colony of the same variety as the queen.



Double Walled Hives do not Have to be Moved.

be caused by bacteria in which case the little chicks should be prevented from picking at the droppings during the first two or three days. Regardless of the cause, the use of the sour milk when the chicks are very young is said to have a very beneficial effect in the control of the disease.

The most simple way of feeding the young chicks is to buy one of the commercial chick feeds, feeding it to them four or five times a day for the first few weeks; after that three times a day is sufficient. Beside this they should have access to finely crushed charcoal, bran, grit and green food. If one wishes to mix his own feed, a mash of equal parts of corn meal, middlings, bran and beef scraps is good. Besides this a mixture of cracked grains should be fed.

For ducklings a good combination is one part corn meal and two parts of bran with a little beef scrap and grit added. This should be fed five times a day until the ducklings are five weeks old, after which three times a day will be sufficient. In addition to this the ducks should have access to all the green food they desire.

One of the chief essentials in the feeding and care of chicks and ducklings is cleanliness. See that the food is clean and fresh, and the coop clean and dry.

Even if you do not purchase new queens, it would pay you to kill the queen that issues with the first or prime swarm and let that colony raise another queen. This could be done after the prime swarm has been hived a week or two, so that you are certain they have eggs from which to raise a young queen. It is the old queen that leaves with the first swarm, except in cases of accident.

The Italian bees seem to have given the best general satisfaction, they have three or more yellow bands around the abdomen and are gentle, good honey gatherers and more resistant to European foulbrood than the common black or hybrid bees. In addition to these points the largest queen breeders in the United States have been breeding these queens by selection for many years and it seems only natural to believe that this must have improved their good qualities. Like some strains of cattle and other live stock, however, all strains of Italians are not of equal value. Some strains are more valuable, and the bee-keeper should purchase queens from a reliable breeder who is paying attention to the good qualities of the queens he breeds.

(Continued next week).

(The thirty-first of 52 special articles to be published in consecutive issues.—Eds.)

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Dairymaid of Pinehurst . . . 910 lbs. fat
Dolly Bloom . . . 836 "
Imp. Itchen Daisy . . . 784 "
Selma of Pinehurst . . . 702 "
Stanford's Princess . . . 725 "
Bulls for sale only.

A Dairy Show Every Day.

CAMPBELL & ANGEVINE, Coldwater, Mich.

Purebred Guernseys. 2-year-old bull from A. R. stock, good individual, not registered, 1200 lbs. Beef price. Also registered females and bred heifers. G. A. Wigant, v. atonist, Mich.

For Sale—Registered GUERNSEY COWS, HEIFERS AND BULLS of choice breeding.
H. W. WIGMAN, Lansing, Mich.

REGISTERED GUERNSEY BULL CALVES for sale cheap at Windermere Farm, Waterford, Mich. May Rose breeding. Address, J. K. BLATFORD, Auditorium Tower, Chicago, Ill.

REGISTERED GUERNSEY BULL, 5 years old, for sale cheap on account of inbreeding. He is sure and gentle. JOHN REBELS, R. 10, Holland, Mich.

GUERNSEYS—REGISTERED BULL CALVES
Containing blood of world champions.
HICKS' GUERNSEY FARM, Saginaw, W. S. Mich.

HEREFORD: Three bull calves and one two year old.
ALLEN BROS., Paw Paw, Michigan.

Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiac. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 64% fat daughter of Pontiac Argie Koradky who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

ESPANORE FARM,
LANSING, MICHIGAN.

Home of the great Holstein Bull "FLEDGE SPOFFORD CALAMITY PAUL" with 33 A. R. daughters, including a 5-year-old with a 35-pound record. Others from 20 to 32 pounds.

FOR SALE—A Bull Calf sired by this Great Bull.

CHAS. S. OSBORN, ADAM E. FERGUSON, Owners.

HOLSTEINS FOR SALE

5 Good Bulls, ready for service.
10 Very Choice Bull Calves.
2 Two-year-old Heifers, bred.
1 Six-year-old grand-daughter of King Segis, due in December.

L. E. CONNELL, Fayette, Ohio.

Bigelow's Holstein Farms
Breedsville, Michigan.

Highest Class Registered Stock For Sale

FOR SALE—Three young, Reg. Holstein cows, are safe in calf. No culls. Price \$125 each. Also 3 heifer calves \$125 each, 2 bull calves, \$50 each, choice breeding. PINE HILL FARM, R. 6, Lakeview, Mich.

Bull Calf—3 sisters from 30.08 to 34.31 lbs. Sire's sire brother to Pontiac Koradky. Dam 22.92 lb. her dam has 230 lb. sisters. M. L. McLAULIN, Redford, Mich.

HOLSTEIN BULL CALF, 5 mo. old, good individual, well grown from A. R. O. dam. Sire's dam has 7 day record 30.25 lbs. butter and a large yearly record. W. B. READER, Howell, Michigan.

"Top-Notch" Holsteins.

Extra large fine young bull, 3/4 white, born Oct. 4, 1913. Dam has official record of 29.40 lbs. butter in 7 days, 17.50 lbs. in 30 days. Sire's dam is a 22.64 lb. 4 yr. old daughter of a 30.54 lb. cow.
McPHERSON FARMS CO., Howell, Michigan.

Reg. Holstein Bull calves and Heifer Bull. Can supply all wants in Reg. Chester Bay R. Farm, Roseton, Mich.

FOR SALE—Registered Holstein bull ready for service, mostly white. One bull calf, born April 26th, mostly black. Price \$25. Dams have A. R. O. records. Charles I. Cook, Box 433, Fowlerville, Mich.

THE MICHIGAN FARMER
Eighth Public Sale
JUNE SALE

Since 1908 we have held the "October Sale" annually at the State Fair Grounds at Detroit. Beginning with 1915 we will hold two sales a year, one in June and the other in October and our first

Will be held at the new

Sale Pavilion Howell, Michigan, June 17th, 1915

110 Registered, Tuberculin-tested Holstein Friesian Cattle 110

THE MICHIGAN BREEDERS CONSIGNMENT SALE COMPANY, Howell, Michigan.

Send for catalog. Watch our ad. in June 12th issue.

H. W. NORTON, JR., MGR.

REG. HOLSTEIN BULL, 12 mo. old, dark in color. R. Dam's record 21.0 lbs. in 7 days, private record of over 17,000 lbs. milk in one year. Price \$100.00.
DEWEY C. PIERSON, Hadley, Michigan.

REGISTERED HOLSTEIN HEIFER 2 years old, mostly white, bred to calve next fall. Good size, nice breeding and individuality. Write for delivered price.
HOBART W. FAY, MASON, MICH.

A "BARGAIN" "ONLY" \$50 Registered Holstein Bull Calf. Best blood and best A. R. O. backing on both sides. 3/4 white. Perfect and handsome individual. Rougemont Farms, Detroit, Mich.

High Class HOLSTEINS My is headed by Smithdale Alcatraz Pontiac, whose dam is the famous Alcatraz Polkadot. Have few young bulls and females for sale at reasonable prices. Will buy a few heifers about 15 months, not bred. Farm 1/4 mile from court house. SETH B. RUBERT, Howell, Mich.

A Great Opportunity—A \$300 HOLSTEIN calf for \$100. Write for breeding. Also some extra grade heifers and bull calves. HILLCREST FARM, Kalamazoo, Michigan.

FOR SALE Registered Holstein Bulls ready for service, and bull calves, also females. FREEMAN J. FISHBECK, Howell, Michigan.

HOLSTEIN BULL CALVES—Don't buy until you write us. No better breeding in Michigan. Long Beach Farm, Augusta, Kalamazoo Co., Mich.

Holstein-Friesian Breeder—The best family represented. D. D. ATKEN, Flint, Michigan.

REG. HOLSTEIN BULL, yearling. Dam an A. R. O. cow. Sire a dam made 30 lbs. butter in 7 days. Send card for price, etc. E. R. CORNELL, Howell, Michigan.

\$350 buys two yearling Holstein Heifers 3/4 white and one bull, not akin, all registered. Choice breeding. B. B. REAVEY, Akron, Michigan.

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

JERSEYS
FOR SALE

One Bull—Two Cows—One Heifer. All registered. One cow soon to calf. A bargain at \$450 for the bunch.

NIXON FARMS, Brooklyn, Mich.

Maple Lane Register of Merit Jersey Herd. Tuberculin tested by U. S. Government. For sale bull calves and heifer calves from R. of M. dams and grand dams, and Hood Farm Sire.
IRVIN FOX, Allegan, Michigan.

THE WILDWOOD JERSEY HERD

Registered Jersey Cattle of Quality. Tuberculin tested. Majesty's Wonder No. 3077 heads the herd. Bull calves for sale, also a two-year-old bull that is right. For prices and description write or come. ALVIN BALDEN, Capac, St. Clair Co., Michigan.

Little Farmstead Jersey Cattle. Bull calves from R. of M. Cows, also heifer calves and several bred heifers for sale. Colon C. Lillie, Coopersville, Mich.

Jerseys. Bulls ready for service, extra quality sired by Jacob's Fairy Emanon, No. 10711, from high producing dams. SMITH & PARKER, Howell, Mich.

JERSEYS—THE REGISTER OF MERIT KIND.

BROOKWATER FARM, R. No. 7, Ann Arbor, Mich.

Jersey Bulls for Sale from high-producing dams, with testing Assoc. records, also on semi-official test. C. B. Webber, R. 6, Allegan, Mich.

M. If you want the cow that does business all year, get the

JERSEY

C. FISHERTON FARM JERSEYS—Some fine grandsons of Hood Farm Pegasus, from Register of Merit dams. FISHERTON FARM, Pontiac, Michigan.

BIDWELL SHORTHORNS

For "Beef and Milk" Registered Bulls, Cows and heifers Scotch-topped roans, reds and whites for sale. Farm at L. S. & M. S. Depot, also D. T. & I. Ry.
BIDWELL STOCK FARM
Box B, Tecumseh, Mich.

Shorthorns For Sale—Young bulls sired by Bright-Saltan. Also cows and heifers.
W. B. McQUILLAN, Howell or Chilton, Michigan.

MILKING SHORTHORNS

Young bulls sired by a Grand May & Otis bull for sale. DAVIDSON & HALL, Tecumseh, Michigan.

Shorthorn Cattle of both Sex for Sale

W. W. KNAPP, Howell, Michigan.

Shorthorns

Dairy or beef bred. Breeding stock all ages for sale at farmers prices. C. W. Crum. Socy. Cont. Mich. Shorthorn Breeders' Assn. McBride, Mich.

Dairy Bred Shorthorns

of best Bates Strains. Young bulls 7 months old for sale. Price \$100 each. J. B. HUMMEL, Mason, Mich.

HOGS.

Durocs & Victorias—Grand bunch of Gilts due March and April. Comprising the blood of Superba, Defender, Much Col., Orleans and others. A few young boars. M. T. STORY, Lowell, Mich.

Berkshire Hogs—Choice gilts bred to farrow in March and April. Also a number of Banded Plymouth Rock Cockerels. Chase's Stock Farm, R. No. 1, Marietta, Mich.

Royalton Bred Berkshires—No more bred sows. Fine old. Young sows and boars born last October. Prices right. D. F. VALENTINE, Supt., Temperance, Mich.

HAMPSHIRE Swine—Breeding stock of all age from most popular strains. Write for breeding. Inspection invited. Floyd Myers, R. 9, Decatur, Ind.

WEST WINDS HAMPSHIRE SWINE. Booking orders for sow pigs immediate shipment. No males to offer. E. P. Hammond, owner, N. A. Wisner, manager, Pontiac, Mich.

Chester Whites—Gilts bred for Aug. and Sept. farrow. March pigs, either sex. F. W. ALEXANDER, Vassar, Michigan.

Big Type, O.I.C.'s and Chester White Swine.

400 fall pigs either sex, special prices for the next 30 days, also bred gilts and service males and we are booking orders for spring pig, all our stock is good enough that I will ship C. O. D. and reg. free in the O. I. C. or Chester White Assn. We won, more prizes than all other breeders put together, at Ill., and Wis. State Fairs. Write for Show record.

ROLLING VIEW STOCK FARM

Cass City, Michigan.

O. I. C.—Spring boars all sold. We have some fine fall pigs ready to ship.
JOHN BERNER & SON, Grand Ledge, Michigan.

O. I. C. Registered Pigs Write for photo and prices.
J. CARL JEWETT, Mason, Michigan.

O. I. C.'s—Serviceable boars. Gilts bred for May and June farrow. I pay express.
G. P. ANDREWS, Danville, Michigan.

O. I. C.—Serviceable boars of Sept. farrow, also a few choice gilts bred for May farrow.
H. W. MANN, Danville, Michigan.

O. I. C.'s—One serviceable fall boar and a few bred gilts, also March and April pigs, pairs not akin. Reg. free and shipped C. O. D. J. W. Howell, Ovid, Mich.

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

O. I. C.—25 sows bred for Spring farrow. 75 Fall pigs, large and growthy. Write your wants.
GLENWOOD STOCK FARM, Zeeland, Michigan.

O. I. C. Choice Sept. pigs, either sex. Will take orders for March, April and May pigs, not akin. ALVIN V. HATT, Grass Lake, Mich.

O. I. C.'s—STRICTLY BIG TYPE. Have a few Gilts left bred for early May farrow. Also a good yearling sow bred for early May farrow. Will sell cheap to make room for my spring pigs. Sept. pigs either sex, good ones. Am booking orders for Spring pigs. Can furnish in pairs or trios, not akin. Sired by some of the largest Boars of the breed.
NEWMAN'S STOCK FARM R. No. 1, Marietta, Mich.

O. I. C. SWINE—Are you on the market for a choice bred sow to farrow the last of Aug. or fore part of Sept.? If you are, write me, I have them.
A. J. GORDEN, R. No. 2, Dorrr, Michigan.

O. I. C.'s—Two good boars 12 months old, good last fall pigs, either sex, and this spring boars. 1/4 mile west of depot.
OTTO B. SCHULZE, Nashville, Michigan.

O. I. C.'s—Service boars, gilts, sows, spring pigs—none better. Satisfaction guaranteed. A. R. GRAHAM, Flint, Michigan.

O. I. C. Pigs, 8 to 10 Weeks Old \$10. Pairs not bred gilts for sale. Registered free. C. J. Thompson, Rockford, Mich.

O. I. C. Spring Pigs of both sex. Fine stock. Price right. Registered. Number limited. LEWIS & FREIBERG, Johannesburg, Mich.

Way Brothers Stock Farm. The home of the big home O. I. C. Hogs. Stock for sale. Registered free. J. E. Way, Pompeii, Mich.

DUROC JERSEYS—A few fall boars and 12

CAREY U. EDMONDS, Hastings, Michigan.

DUROC JERSEYS.

From Prize-Winning Stock.

Write, or better still, come.

Brookwater Farm, Ann Arbor, Mich., R. F. D. 7.

Capitol Herd Duroc Jersey Swine. Established 1888. Young boars and bred sows for sale. I pay the express. J. H. BANGHART, Lansing, Michigan.

DUROC JERSEYS—A few bred gilts, fall males ready for service. S. C. W. Leghorn and Buff Rock eggs for sale. J. McNICOLL, Station A, R. 4, Bay City, Michigan.

HEAVY BONED DUROC JERSEYS FOR SALE.

Some extra vice spring pigs ready to skin.
M. A. BRAY, Okemos, Ingham Co., Michigan.

Duroc Jerseys. Big boned service boars. Gilts for June farrow, bred to son of Volunteer. Gr. Champ. at 1912 International. F. J. Drott, R. No. 1, Monroe, Mich.

Duroc Jersey bred gilts, bred for Aug. and Sept. farrow from leading blood lines; also a few good boars. Write for circular and prices. W. C. Taylor, Milan, Mich.

STRICTLY B.T. Poles.

Absolutely none larger or better. My herd represents best herds in U. S. Spring & fall farrow pigs at bargain prices. Satisfaction guaranteed. F. D. Kruger, Ravenna, Mich.

Duroc Jerseys: A few choice boars ready for service, from prize winning stock. Cliff Middleton, Idlevild Farm, R. F. D. No. 3, Clayton, Mich.

Duroc Jersey of Volunteer Champion of 38 State Fairs and Chicago Show in 1912. E. E. Scoria, Macon, Mich.

DUROC JERSEYS—Fall and

either sex, from choice strains. S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.

POLAND CHINAS—The type that wins, weighs,

and pays—big with quality. Bred sows and pigs either sex. African sows. SPRING BROOK FARM, Three Oaks, Michigan

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

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

MY OH MY!
What an Opportunity.

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

POLAND CHINAS

than with any other breed. We want to place at least one pig, or a pair in every community, to advertise our herd. If interested, write for our plan and prices. HILLCREST FARM, Kalamazoo, Mich.

LONG Bodied Heavy Boned Poland China yearling, L and fall boars at Bargains. R. P. Rock Eggs \$1 per lb. ROBERT NEVE, Pierson, Michigan.

BIG TYPE P. C.—Two boars old enough for service.

Sired by Big Smooth Jumbo. Pigs either sex sired by Boosier Giant 2nd. J. E. Braithwaite, Brant, Mich.

Poland Chi-as, either sex, all ages. Something good at a low price. Bargains in boars ready for service. P. D. LONG, R. F. D. 8, Grand Rapids, Mich.

POLAND CHINAS of the big type. Boars

ready for service. Sows bred for spring farrow. A. A. Wood & Son, Saline, Mich.

LARGE TYPE P. C.—Either sex, pairs and trios, not

bred gilts. W. J. HAGELSHAW, Augusta, Mich.

Big Boned Poland Chinas. Fall gilts bred weigh-

ing from 260 to 300 lbs. ROBERT MARTIN, R. F. D. No. 7, Hastings, Mich.

Large Strain P. C. Boars ready for service and sows with

pigs. Am breeding sows for fall farrow of the best breeding, to be had at bargain prices for the next 30 days, may have the room for others.
H. O. SWARTZ, Schoolcraft, Michigan.

Poland China—Am booking orders for male pigs

to be shipped at weaning time. G. W. HOLTON, R. No. 12, Kalamazoo, Michigan.

FALL PIGS AT HALF PRICE

Bred from the largest strain of Poland Chinas on earth, none bigger. If you ever expect to own a registered Poland China, this is your opportunity. Get busy and order at once. Pairs and trios not akin \$5 each. J. C. BUTLER, Portland, Mich. Bell Phone.

BIG Type boars by Big Smooth Jumbo. Greatest

B boar in State, 748 lbs at 17 mo. These boars are long, tall, big bone sold at farmers prices, shipped C. O. D. Call or write. Wm. Waffle, Coldwater, Mich.

LARGE TYPE P. C.

Largest in Michigan. Bred gilts all sold. A few extra good fall pigs priced to move them quick.

W. E. LIVINGSTON, Parma, Mich.

50 YORKSHIRES—All ages. Red Polled Cattle.

Oxford Down Sheep, W. P. Rocks, I. R. Ducks. E. S. CARR, Homer, Mich.

YORKSHIRE SWINE. Boars ready for service.

A gilt bred for June farrow. Weanling pigs 6-10 weeks old. GEO. S. McMULLEN, Grand Ledge, Mich.

Mulefoot Hogs:—Weanling pigs, pairs not akin. Bred

sows and gilts for fall farrow, two service boars. C. F. BACON, Ridgeway, Mich.

Little Farmstead Yorkshires. Boars ready for service.

L Gilts bred for Sept. farrow. Spring pigs, pairs and trios, not akin. Colon C. Lillie, Coopersville, Mich.

Registered Yorkshires

The World's Bacon Breed. Imported Strain. Both Sexes. Prices Reasonable.

Hatch Herd, Ypsilanti, Michigan.

YORKSHIRES

Bred gilts, service boars, September and October pigs. Prices reasonable. W. C. COOK, R. 42, Ada, Mich.

For Sale Yorkshire Boar Pigs—From large early

farrowed litters. Get a pure bred boar and increase the quality of your hogs. WATERMAN & WATERMAN, Ann Arbor, Michigan.

Registered Yorkshires—10 gilts bred for

June farrowing. 3 fine boars. JOS. H. BREWER, Belmont, Mich.

SHEEP.

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

I sell and ship everywhere and pay express charges. Write for club offer and price list. Oxford, Shropshires and Polled-Delaines. PARSONS, Grand Ledge, Mich. R. 1.

Registered Oxford Down Sheep—Write your

wants. M. F. GANSLEY, Lennon, Michigan.

Leicesters—Yearling and ram lambs from Champion

Stock of Thumb of Mich. Also select Berkshire swine. Elmhurst Stock Farm, Almont, Mich.

HORSES

PERCHERONS—Important, one of the heaviest horses in state, at head of stud. Bred Mares as good, young stock for sale. CHAS. OSGOOD & SONS, Mendon, Michigan

FOR SALE—Registered Percheron Stallion Mares

and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

Pigeon Pony Farm—Reg. Shetland Ponies, mostly

spots, 1 spotted stallion and young stock for sale. Dr. W. T. Morrison, Pigeon, Mich.

Shetland Ponies—Closing out at low prices on ac-

count of selling my farm. Registered stock, J. M. BEDDOW, Birmingham, Mich.

Practical Science.

THE SUGAR INDUSTRY.

BY FLOYD W. ROBISON.

High Sugar Content Not a Direct Result of Cultivation.

A considerable amount of experimentation was conducted before it was determined that certain states in the north and middle west were adapted to the growing of sugar beets. It was assumed that the sugar content of the beet was to be directly controlled by the type of cultivation and that all that was necessary to grow beets with a high percentage of sugar content was to develop the right system of cultivation. It took a great deal of experimental evidence to disillusion agriculturists in this respect. It is true that climatic conditions have a very great deal to do with the sugar content as exemplified with crops other than the sugar beet crop. One of the best popular evidences of this condition is shown in the growth of the Rockford muskmelon. Originally this name developed from a peculiar type of muskmelon grown in and around the little town of Rockyford, Colorado. This place was peculiarly adapted to the growing of melons and occupying as it does a little pocket in the foothills of the Rockies, the climatic conditions were ideal for the most perfect development of this agricultural commodity, and it there developed its highest degree of saccharinity. The seeds of the Rockford melons which were produced at Rockyford, Colorado, have been distributed throughout the states but seemingly it does not develop with the same apparent sugar content as in that locality. The same applies unquestionably to the sugar beet. Colorado is an ideal state for the production of sugar beets and in Colorado they have reached a very favorable average sugar content.

Great Variation in Beets Under Identical Conditions.

In some of our experiments in the Michigan Experiment Station on sugar beet culture we have grown beets side by side in the same row with the same kind of soil, of apparently even fertility, and adopting the same general method of cultivation. The different beets in this row have shown variations of two per cent and more, side by side, which goes to show without question that the method of cultivation alone, and the character of the soil alone cannot be responsible for the variations in sugar content.

The ancestry of the seed is important and other things being equal the seed produced from beets which have continuously for some time shown a high average sugar content will develop a beet with a more uniformly high content although instances of great variation will occur, even under these conditions.

The Sugar Industry is a Chemical Industry.

The work of the chemist in relation to the sugar industry has been an exceedingly interesting one. The perfection of manufacture depends entirely upon him and upon his control of the product. The utilization of the manufactured by-products again relies upon the impetus of the chemist. The question of profit and loss in the industry depends upon the vigilance and the analyses conducted by the chemist and again in his hands rests the case of the producer. That this is a very important item is evidenced by the fact that the last Legislature but one directed the appointment of official inspectors under the jurisdiction of the chemical department of the State Dairy and Food Commissioner to supervise the factory analytical findings for the protection of farmers who produce sugar beets.

(Continued next week.)

\$5,450 Per Day Spent To Fortify Goodyear Tires

The other day we cited our experts to certain well-known tires. And we asked, What could Goodyear save by building tires like these?

\$1,635,000 a Year

The answer was, "Based on current production, our saving would be \$1,635,000 per year." That means \$5,450 per day.

But that saving would probably cost our users a million dollars monthly. And the cost to Goodyear soon would be the rulership of Tiredom.

One Must Choose

Here's the choice that confronts us day after day: Shall we skimp Goodyear tires in ways that can't be seen, and increase our profit \$1,635,000 a year? Or shall we pay that price to give our users a better tire than others?

Our answer is this:

Goodyear Fortified tires, for many years, have embodied five costly, exclusive features. These are five great protections found in no other tire.

We spend on experts \$100,000 yearly to find new betterments to add.

In the past year alone we have added improvements which cost us exceeding \$500,000 a year.

THE GOODYEAR TIRE & RUBBER COMPANY, Akron, Ohio
Makers of Goodyear "Tire Saver" Accessories; also Goodyear "Wing" Carriage Tires and other Types

Those are the facts; believe them. We never exaggerate, never misrepresent.

Price Reductions

Now note another side.

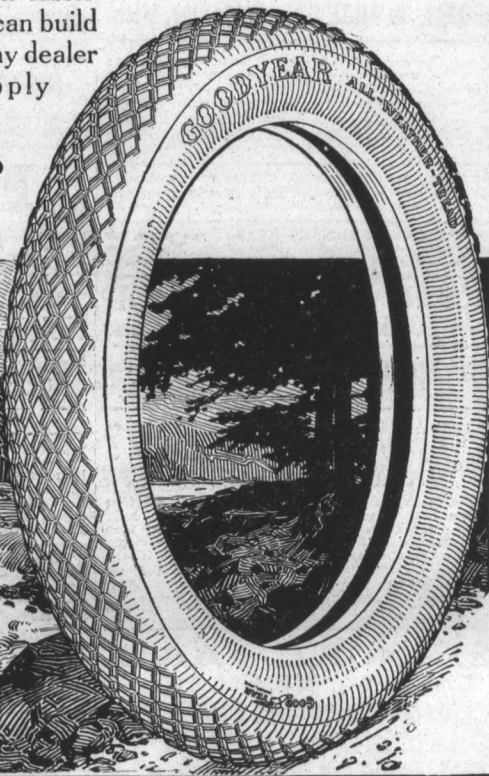
Despite this ceaseless improvement, Goodyear prices are constantly coming down. Our last big reduction—on February 1st—made three in two years, totaling 45 per cent.

Yet not a feature is missing, not an item is skimmed. And this year we are spending a half-million dollars on newly-adopted betterments.

That's one result of our mammoth output, our new equipment and our modern methods.

When we spend such sums to build tires better than rivals, don't you think it worth while to get Goodyears?

Most men do. Goodyear tires are selling now much faster than we can build them. Any dealer will supply you.



GOOD YEAR
AKRON, OHIO

Fortified Tires

Fortified Against

Rim-Cuts—by our No-Rim-Cut feature.
Blowouts—by our "On-Air" cure.
Loose Treads—by many rubber rivets.
Insecurity—by 126 braided piano wires.
Punctures and Skidding—by our double-thick All-Weather tread.

TAKE OFF YOUR HAT TO THE MYERS



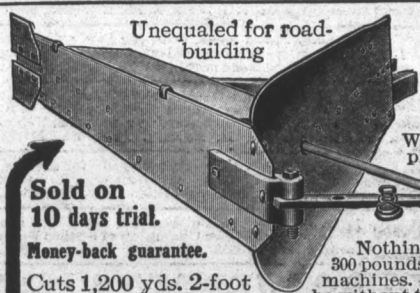
PUMPS FOR EVERY PURPOSE

Put your water problems up to a Myers Pump, and enjoy modern water facilities for the home and surrounding buildings. Life is too short to waste time and energy with a cheap under-sized, back-breaking pump of any kind—Get a MYERS—one that will give you excellent service and an abundant water supply. Choose a pump from our extended line—Cog Gear, Hand and Windmill Pumps for Shallow and Deep Wells; New Style House and Cistern Pumps; Hydro-Pneumatic

Pumps for Country Water Systems; Easy-to-Install Power Pumps, Pumping Jacks and Cylinders; Tank Pumps; Spray Pumps and Accessories. Our Service Department is ready to assist you. Call on it for information, and ask for catalog and name of nearest dealer.

You will also be interested in Myers Hay Unloading Tools and Door Hangers—Modern Implements that lighten harvest labors and insure Easy Doorways. Let us send circulars.

F.E. MYERS & BRO. 725 ORANGE ST. ASHLAND, OHIO
ASHLAND PUMP & HAY TOOL WORKS



Unequaled for road-building

CUT DITCHING COSTS

With a Martin Ditcher and Grader

Wonderfully efficient and amazingly simple. Cuts V-shaped ditch up to 4 feet in depth. Ideal for levee work, terracing, and cleaning out old ditches.

NO WHEELS OR LEVERS

Nothing to break or get out of fix. Weighs only 300 pounds. Does all, and more than the big, intricate machines. Price, only one-fifth. You can't afford to be without this genuine farm necessity, which will save its cost in a few hours' use. Write TODAY for illustrated booklet with full particulars and factory prices.

OWENSBORO DITCHER & GRADER CO., Inc., Box 639, Owensboro, Ky.

Sold on 10 days trial.

Money-back guarantee.

Cuts 1,200 yds. 2-foot ditch in one day with one man and one team.

Powerful—Economical

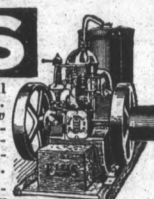
Ellis Engines develop more power on cheap kerosene than other engines do on gasoline. No cranking, no excessive weight, no carbonizing, less vibration, easy to operate. All

ELLIS ENGINES

are sent on 30 days' free trial and guaranteed for 10 years. We do this because we know that Ellis Engines are the biggest value the engine industry has ever known. Thousands of enthusiastic users.

Made in vertical and horizontal types, either stationary or portable, from 1 1/2 H. P. to 15 H. P. Our new booklet describes this money-saver. Send for copy.

ELLIS ENGINE COMPANY
2839 E. Grand Boulevard, Detroit, Mich.



Pump, Grind, Saw

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