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WITH the coming of alfalfa as one of the main crops, draining the cold and wet places, also keeping the water cut off the sags, will become a question of vast importance to the farming interests of this state. There are many fields where only parts are adapted to alfalfa growing, as the seed does not germinate readily on cold and wet ground, drowns and freezes out easily in the depressions, hence a few remarks might not be out of place at this time.

What Lands Need Drainage?

In the Michigan Farmer of March 8, page 290, Prof. J. A. Jeffery says in part: "We are coming to appreciate that a much greater area of our land would be benefited by drainage than was thought a few years ago. There are places which appear to be perfectly drained because of natural conditions, and yet demonstration proves it to be profitable to install some system of drainage. Often on the side of hills there will be spots where the water will not leach away, and frequently farms that have a gentle slope that naturally would look to be properly drained remain cold and wet. Then, too, there are spongy places at the foot of slopes which require the same treatment. These places, together with the large area of level lands over our state, would be greatly improved by the use of tile drains."

The cause is nothing more than a vein of water too near the surface, as a general rule it will not be nearer the surface than four feet, nor deeper than 12 feet. If deeper than 12 feet it seldom shows on the top of the ground. If nearer the surface than four feet it would have broken out in the form of a spring long ago. This is no theory but a fact well known to the old-time well-diggers and to men who have made it a careful study. If these veins are tapped when the frost goes out of the ground in the spring, the water will rise to the surface and sometimes overflow. It will then keep sinking into the ground as warm weather comes on, and disappears by evaporation and in other ways, until about August 15 to 20, when it reaches its lowest level, where it remains about 30 days. It will then commence to rise again, completing its cycle the following spring.

Much depends upon the size and pressure of the vein. If the vein is light a spring crop can be raised when the ground warms up. A good sign to follow is to watch for that tell-tale weed known to botanists as *Equisetum*, commonly called horsetail, or scouring rush, of which there are said to be 25 or 30 varieties growing in the United States, but only four or five growing in Michigan. *Arvense Equisetum* resembling a miniature pine tree and *Sylvaticum Equisetum* growing like a reed with prominent telescoping joints its entire length, growing sometimes 18 inches in height, are the only ones growing to any extent in this state. On account of the acidity of the soil where these fern-like plants grow seed does not germinate readily, especially clover, alfalfa, alfalfa and all legumes, nor will this soil stand the litmus tests. An application of lime or barnyard manure will benefit it, but will seldom last more than two seasons.

The reason *Equisetum* can grow on sour land is because it is a subaquatic plant and does not germinate from seed, but starts from spores similar to mushrooms. Land as above described should be drained not less than three feet deep, four feet would be better, which is probably as deep as draining can be done with the present price of labor. Too much tiling is done too shallow. This has no reference to "mucky" land, for that is a different proposition.

In land already tiled these places should be tapped, which can easily be done. Dig

Observations on Tile Drainage.

a hole about three feet across, six feet deep and four feet from drain, bore three or four two-inch holes, down to the vein, be sure to have holes enough to relieve the pressure "fully." A barrel can be sunk into the hole and the tile run from it to the main drain, or fill up the hole with stones level with the drain. Then run tile to the middle, make a place for the water to run in at the end, by placing stones around it, then fill in the hole about a foot above the tile with stone, and a few pieces of tough sod should be placed, grass side down, to prevent dirt

sand of a cave-in, also turtles and small animals.

In tiling land as above described by Prof. Jeffery, it is not unusual to get a light flow of water, if such is the case, the tile should not be laid until the stream is satisfactory. That can be obtained by boring down in the bottom of ditch along the edge where only a small quantity comes up, the tile may be spread a little for four or six feet and then covered with gravel, but where a heavy flow is started a barrel or stones as described above, should be put in three or four feet

in through the joints and the tile will finally settle and will even sometimes disappear. Of course, there is no need of using the hay only where the quicksand is encountered in its worst form.

In laying a tile drain, there is one thing always to be remembered, and that is, the depth of the tile in the ground will be the water-line and when once established water will sink into ground to this line, "providing" there is no upward pressure against it.

Drained land, as a general rule, does not reach its stage of perfection until it has passed through a season of heat and cold, especially clay or mixed soils which are impervious to water. Land, like everything else, is subject to the laws of contraction and expansion and heavy land contracts during warm dry weather causing the ground to crack, and the action of frost is similar to that of heat, but the fissures produced by frost are the deepest and none will go below the water line. That is one of the main points of deep tiling, the deeper the drain the more will air enter the soil and a greater amount of water will be absorbed after a rainfall. Of course, it is true that a chilled plow cannot be used to advantage in this land, but after the first plowing it can be worked nicely with the modern steel mouldboard.

Livingston Co. N. P. MORTENSON.

A STANDARD MICHIGAN CROP.

The greater portion of Michigan's soil and climate is peculiarly adapted to the growth of sugar beets, this is one of her standard farm crops. Unlike many of the cereals, clovers, etc., which require exacting climatic conditions and soil preparation and qualities, beets will grow well on either old or new ground of divergent conditions and in normal seasons will make paying crops. Indeed, as a farm crop they are an exception to the rule, as they are immune while in a young state, from ordinary frosts, withstand wet and dry weather as well and better than most other crops and if planted in season may be harvested comparatively early in the fall. The reason many let beets freeze, unharvested, in the ground is because they are a crop that can stand rigors of almost any weather conditions and may thus be planted from April till July, and if properly cultivated and kept free of weeds will make a big root development, and on this score many plant beets altogether too late in the season.

The accompanying illustration is of new ground beets planted June 4, and while put in late, to date, September 3, they are larger than any I harvested last season and better in every way. Individual specimens weigh eight to ten pounds, these, of course, are too large as it is the average sized, two, three or five-pound beets sugar companies like and the ones, too, that have the least tare and as a rule, test better in their sugar content.

One advantage I think new ground has over older soil is the beets are easier lifted when mature as such soil usually is naturally loose. This condition also allows them to root deeper.

Gladwin Co. G. A. RANDALL.

FARM NOTES.

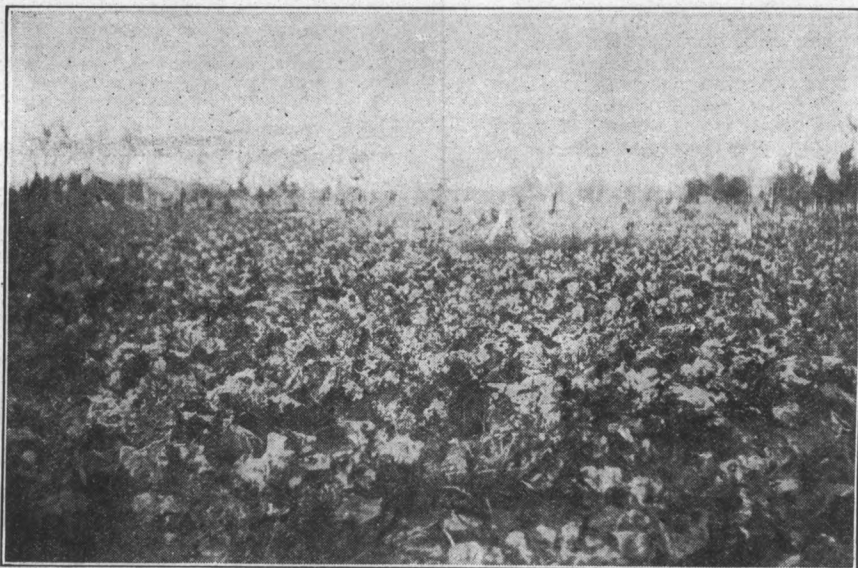
Wild Carrot.

I am inclosing a weed for identification. It is taking possession of the highways and in some places the pastures in this county, and either through indifference, or ignorance of its nature, but little attention is paid to it.

Clinton Co.

E. B.

The specimen sent is undoubtedly wild carrot. It is a biennial introduced from Europe, the seeds of which are readily dispersed both by the winds and animals. As it grows plentifully along the roadside it is difficult to eradicate it from the fields

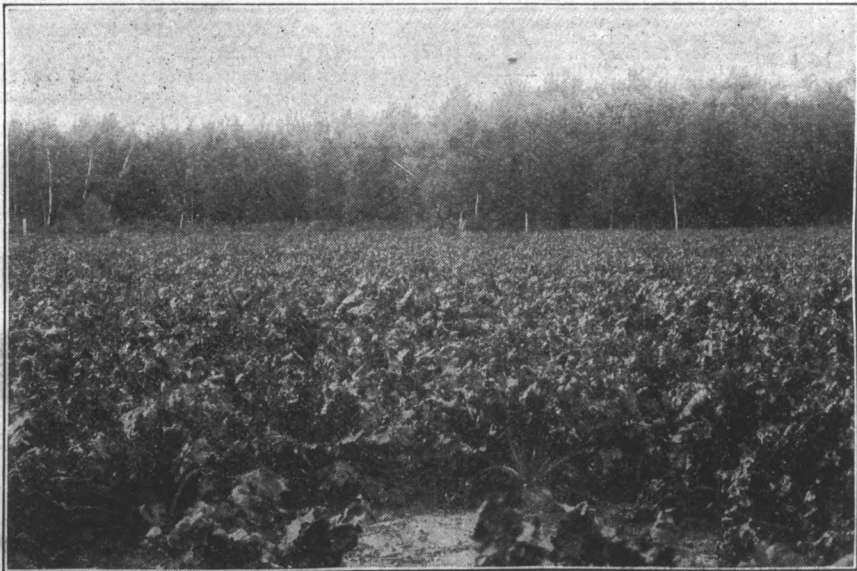


Sugar Beets on "New Land" Farm of G. A. Randall, of Gladwin County, whose 1912 Crop on Similar Ground Brought \$103 Per Acre.

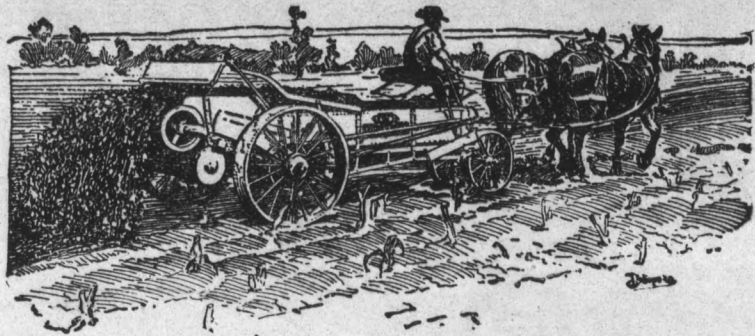
going down between the stones. Should there be a low place in the field at this point carry the stones up level with the ground, or a little above, omitting the sod, of course. It will then answer a double purpose, by carrying off the surface water also. It is a good idea to take out a tile of the main drain and cut a three-inch hole into it, which can readily be done with a cold chisel, and make the connection before the vein is tapped, because if the flow of water is heavy it will rise above the drain, the banks will cave in and, when water is turned in, large quantities of sand will run in also. In case the tile is left open at the end, for quicksand to settle or for other reasons, a wad of hay or grass should be stuffed into it lightly, which will keep out the

back from the drain. If too close there is danger of the tile settling at this point and ruining the drain. Where the vein lies under clay 50 per cent will probably flow quicksand, more or less, if the flow is heavy it may run 24 hours, sometimes even longer. No attempt should be made to lay tile until flow of sand ceases. Where this stream runs into the drain, no alarm should be felt about it filling up, as the quicksand is light and will flow through with the water, there is no known way to prevent it.

On heavy flat land where quicksand lies near the surface the tile must be laid on boards and swale hay used to keep the sand down. Unless this is resorted to the tile will raise up before they can be covered. Quicksand will also run



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ON the spreaderless farm the thought of the great heaps of manure piling up constantly in barn yards, stables, and stalls, is a gloomy one. Those piles mean much disagreeable and hard work. Three times every bit must be handled. It must all be loaded onto high wagons. It must be raked off in piles in the fields. Then every forkful must be shaken apart and spread.

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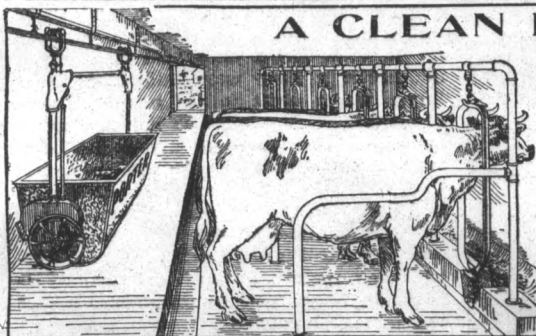
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without attention which will prevent it from seeding. Thorough culture of the hoed crops in the rotation and care in not sowing grass seed in which the seed of this weed is present are the methods to be pursued in its eradication.

Rye and Buckwheat as Crops for Green Manure.

Would like to ask through the columns of the Michigan Farmer if rye is any good to plow under as a green manure. Have been told it is no good. Have a piece of hilly land that is quite sandy. Thought I would sow to rye this fall, plow under in the spring and plant to beans. Has a June grass sod now. Also would like to know if buckwheat is any good to plow under.

Osceola Co.

SUBSCRIBER.

Any kind of vegetable matter plowed down will benefit the mechanical condition of the soil by increasing its supply of humus, available plant food and power to hold moisture. Rye and buckwheat serve an excellent purpose where leguminous crops, such as the clovers, cannot be successfully grown. Following this treatment of a worn soil by plowing down a crop for green manure, an effort should be made to get clover or alfalfa or some other legume established, as these crops will add plant food as well as vegetable matter to the soil.

Sweet Clover as a Pasture Crop.

Will you advise me as to the value of sweet clover as a pasture and also its value as hay. I read recently that when taken in the same stage and under the same conditions sweet clover had almost the same chemical composition as alfalfa. The writer of the article I read also said that it would grow on the most barren ground and that as a soil builder it is unexcelled. It is a biennial, maturing seed the second year and then dying. Wouldn't it be good for a permanent pasture? The roots extend eight to 20 inches deep, are from a quarter to a half-inch in diameter and add humus to the soil when the plant dies. Ground intended for alfalfa will be greatly benefited by growing sweet clover a couple of years before. Also please tell me how much to sow per acre.

Hillsdale Co.

J. D. S.

Sweet clover would not be adapted for a permanent pasture which is closely stocked throughout the summer because of the fact that it is a biennial and must be permitted to ripen seed in order to perpetuate the stand. In a bulletin by J. M. Westgate, Agronomist in charge of clover investigation of the Bureau of Plant Industry, the statement is made that sweet clover makes excellent pasture for horses, sheep, cattle, hogs and chickens.

As a means of creating an appetite for the plant it is advised to commence pasturing stock on it very early in the spring before other green feeds have started. In order to keep the forage in a tender condition a sufficient number of animals should be pastured on it at all times so there will be an abundance of fresh shoots for grazing purposes. The claim is made in this bulletin that stock, when pastured upon sweet clover, make gains which compare very favorably with those obtained from either alfalfa or red clover.

LILLIE FARMSTEAD NOTES.

On Monday, September 15, travel on the roads caused great clouds of dust to float away to the adjoining fields. On the morning of the 17th the mud was six inches deep in some places in the public highway. This simply means that we had a splendid rain, a real old-fashioned, all-night, all-day rain. Some of the time it rained real hard but most of the time it was a steady, old-fashioned soaking rain. The fields did not look wet at all. They were so dry that they could absorb all this moisture. With this all-day and all-night rain, yet the ground was not wet clear down to moisture. In digging potatoes the following morning it was no trouble at all to find dry dirt, and if it doesn't rain any more, and it looks as if the rain was over with, it will not be many days before the ground will need another shower. This gives one some idea of the dryness of the soil. I don't think I ever saw this country so thoroughly dried out as it was before this last rain.

And this drought affected the corn in some places seriously. For instance, in a field of seed corn on some of the best corn land, the stalks did not ear at all owing to the dry weather.

My seed corn plot is practically a failure this year. It is a failure so far as ear to row is concerned, but, of course, there is a lot of good seed corn on the plot, but there is hill after hill that has no ears at all. It is on splendid land, it was planted in good season, and has been well taken care of. All it lacked was moisture. Of course, the rain has come entirely too late to be of any benefit to corn. My ensilage corn, which is later, of course will freshen up and perhaps

make a little more growth. I think the rain, even as late as it is, will be a benefit to the sugar beets. They have never wilted hardly this summer. It is strange about that. I raised crops of sugar beets before where, when dry weather came, the leaves would wilt down to the ground in the middle of the day, but the beets this year have not done this. I can only account for it by the fact that the ground was dry when the beets were planted. The beets had to send roots down deeply in order to live at all, and in this way they have gone down deeper than usual this year, and this has kept them from wilting during the excessive part of the drought. I cannot explain it in any other way.

The vines in one field of lima beans are setting full of pods as they ought to, and they are not ripening up as they should. Those in the other field which was planted several days later are farther advanced and taking the growth of the plant into consideration are better podded. The other field was covered with a heavy coat of stable manure and plowed under. I am inclined to think that there was too much nitrogen in this manure and this has prolonged the growth of the plant and made perhaps an excessive growth of vine and has retarded fertilization. We know that too much nitrogen tends to make a too thrifty leaf growth, and rather prevents the formation of seeds or pods, and I am of the opinion that if we had only put on about half of this manure this year and saved the rest for another year that we would have had a better crop of beans than we now have with this one rather excessive coat of manure. These lima beans, like the sugar beets, have not seemed to be affected by the drought. They have a tap root like alfalfa that goes down deeply, and the ground when they were planted had no excess of moisture, so that the roots could go down and must go down if they live. They got well established in the subsoil before the severest part of the drought came, and that enabled them to go through the drought without showing its effect, but they have not podded and ripened and matured as they should, and I am of the opinion that it is owing to an excessive amount of stable manure used on the field.

After this splendid rain the ground will certainly be in condition for the sowing of wheat. I intend to work the land over with a spring-tooth harrow. We can fix three three-section harrows by putting in a spreader pole so that the engine can draw the three three-section harrows, and it will not take long to run over the 75 acres which we have practically ready for sowing. If it wasn't for harvesting a field of lima beans at once we would go to sowing in a day or two, but the sowing must be put off until we harvest these beans. That is one trouble with canning factory crops, they are exacting, they must be done at just such a time. Of course, the man who sowed his wheat just before this rain will probably come out all right because the rain did not pack the ground excessively. It came down so gently at first and came so steadily that it didn't pack the ground like a downpour would, but I believe a man who goes to work and works up this soil now, lets a little more air into it by good cultivation with a spring-tooth harrow, will have a better seed bed, and the wheat will have a better start than the man's who sows just before the rain. Several pieces in this vicinity were sown early, one the very last of August. That field is extremely spotty. On the higher portions of the field and on the clay portions of the field, one can scarcely see any wheat at all. On some portions of the field, however, there is a fairly good stand. If the seed hasn't been injured by remaining in this dry soil this rain will cause it to germinate and come on all right, but I have had experience along this line, and nine times out of ten when wheat is sown when the ground is not moist enough to cause germination at once, much of the seed molds and loses its vitality, and even though rain comes as it has this fall and some of this wheat comes up it will not be as thrifty or as productive as though it had been placed in moist ground and come up in the ordinary length of time.

The trees and shrubs imported are chiefly evergreens, such as pines, spruces, and firs, and broadleaf plants—oaks, maples, etc. The majority is stock of foreign origin, though in a few cases cultivators abroad through a special selection of attractive forms of our native trees have developed them to such an extent as to make them desirable to purchasers here.

Practical Science.

THE MAINTENANCE OF FERTILITY.

BY FLOYD W. ROBESON.

How Long will a Soil Last Without Fertilizers?

In discussing the use of commercial fertilizers and natural manures, and the prevention of the waste of farm manures, we very frequently hear the question raised as to the length of time which will intervene before any of our ordinary soils will become worn, or run, out. This problem has been approached from a variety of viewpoints. Many farmers maintain that there need be no concern given to the question of replenishing soils with the plant food constituents, or administrative agents, removed by the growing crops. This subject has been discussed quite freely in scientific circles, and a very important bureau of our government at one time permitted the information to become widespread to the effect that practically all soils contain a sufficient amount of nutrients to support crops indefinitely. As a matter of fact, we do know that some of the oldest soils in the world having been cropped for centuries are still responding to cultivation. Nearly all of our so-called virgin soils in this country are soils which are entitled to that name only in so far as the tilling influence of man is concerned, for long before they have been under cultivation they have supported crops of forest trees which have grown and removed nutrients for many hundred years. Most of us are also familiar with the fact that many of the gigantic trees in California that have caused so much admiration have been located in these identical spots and abstracting nutrients from the soil they were able to reach 2,000 years ago.

No Manure Means Small Crops.

Fortunate it is indeed, that most of the so-called plant food constituents seem to occupy a more or less administrative relationship to the plant, for if there were actually removed from the soil with each succeeding crop the total amount of nutrients called into action by that crop, it would be a matter of a very few years indeed before many of the soils would become extinct as far as crop-producing value is concerned. As it is, when the amount of plant food constituents removed in any one crop is compared with the amount of these same ingredients still left in the soil, it would indicate that there would be a sufficient amount of nutrients for many years to come. We are decidedly conscious of the fact, however, that without the use of manures in some form or other, cultivation through a very limited number of years would show a decided falling off in crop production.

It seems almost axiomatic to the writer that if there is a sufficient amount, studied from an arithmetical point of view, of phosphoric acid, we will say, in a given soil to last 200 or 500 years under average crop production, there is no very strong argument to encourage the farmer to replenish each year the equivalent of phosphoric acid removed. From this viewpoint it is difficult to understand why in the crops of two or three years the soil can so behave that no longer is a maximum crop produced. From our observations we have, therefore, come to the conclusion that the amount of phosphoric acid and other plant constituents which are found in that plant at maturity is no criterion whatsoever of the actual amount of these agents which have been called into action during the life of the plant. We have, therefore, adopted the term "administrative agents" instead of "plant food" and we believe that if there is found in a certain crop 25 pounds of phosphoric acid by analysis, it is by no means an indication that 25 pounds of phosphoric acid is all that plant used during its entire life.

Growing Crops Exhaust the Available Agents in the Soil.

As stated before, we do know that in spite of the fact as evident from a mathematical consideration, there is sufficient amount of these administrative agents to last for many years in maximum crop production, still the continuous cropping of a soil for a very limited number of years shows a steady decline in the crops grown each succeeding year on this soil. This is prevented by the application from external sources of manures of different kinds in what is called available form. This would seem to indicate that growing

crops either exhaust the soil of its plant food constituents or, as we believe, remove the available plant food constituents from the soil in part and re-lock other available agents thus cutting short from both ends, as it were, the available material in the soil. When crops are not removed from the soil this condition is compensated for by the decay of the rootlets in the soil and by the decay, likewise, of the leaves and stems upon the surface of the soil. But under modern cultivation nearly all of the portion of the plant above the ground is removed for edible purposes and in many instances nearly all of that portion beneath the ground is, as well. So that under intensive cultivation the depletion of the soil in available plant food constituents or administrative agents is very rapid indeed and it becomes quite necessary to study the most proper and economical means of re-building the nutritive condition of that soil.

Manures Surely Increase the Yield.

As we stated before, it is common knowledge that the use of barnyard manures and commercial fertilizers has resulted in a marked increase in crop production and we therefore argue that this clearly indicates the necessity for the use of fertilizing materials. Farms are growing smaller in this country and it has become necessary to feed more people from these smaller farms than have been heretofore fed from the larger farm units. Consequently the yield of wheat and other crops per acre must go up instead of down, or the cost of living advances so rapidly that it becomes impossible for the consumer to keep pace with the prices asked. We therefore are confronted with the condition that the soil instead of being kept at its initial productive capacity must actually be built up in its productive capacity and consequently more available food constituents must be placed on the soil each succeeding year than are taken off the previous year.

The Use of Fertilizers Means Soil Conservation.

Barnyard manure and commercial fertilizers have their origin in the soil itself and by returning to the soil the constituents found in barnyard manure and commercial fertilizers we are simply restoring what at one time was a part of that soil, and consequently assisting nature in her effort at conservation of the soil.

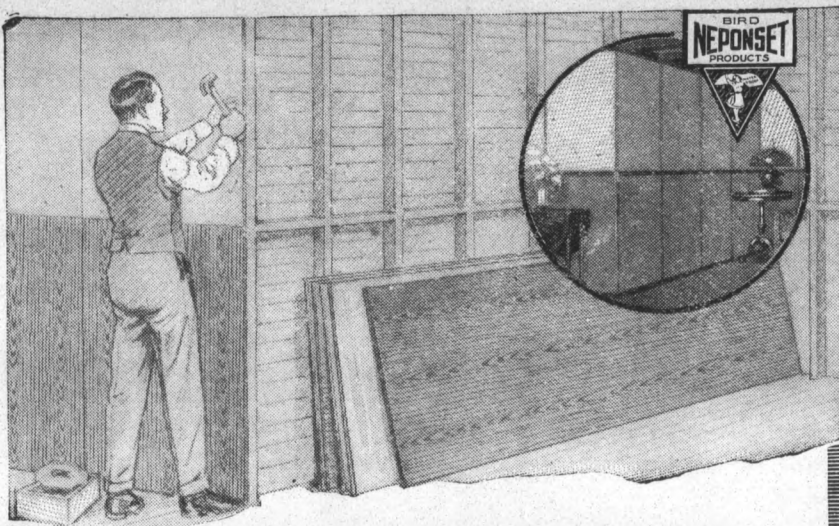
There are a number of ways of accomplishing this all of which must blend together finally to produce the desired result. It is useless to put fertilizers on a soil unless proper cultivation of that soil is at the same time followed. Some scientists have insisted that the question of the fertility of the soil lay only in the application of barnyard manure and commercial fertilizers. Others have insisted that it lay entirely in the proper cultivation of the soil, but it seems to us that any far-seeing man must realize that all must go hand in hand in securing the proper condition for maximum crop production. The growing of a leguminous crop, while a decidedly admirable thing to do and besides a necessity, adds no basic principle to the soil, it does return nitrogen to the soil and it does return organic matter which in turn serves to assist in the reduction of the other basic agents which are in that soil, but it may readily be seen that it adds no basic principle to the soil itself. It becomes desirable, in fact, it is necessary, that we should always consider the maximum crop production, for it is our duty to get from a soil everything that that soil can give and the only way this can be done is by likewise returning to the soil the agents indicated.

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All the money in the world could not produce a more comfortable or durable heavy work shoe. It cannot be equaled by any other manufacturer.

Take a knife and cut it to pieces if you wish, and you will find it honestly made of good leather, through and through. No substitutes for leather are ever used.

The uppers are made of Chrome Tanned Leather—as nearly water-proof as leather can be made. The counters, heels and double soles are of the finest sole leather. The "Stronger-than-the-Law" shoe is put together so it won't trip. It will keep your feet dry and give you double wear.

It is comfortable and good looking—the strongest and longest wearing shoe known. Beware of imitations. No other work shoe in its class is "just as good."

"Stronger-than-the-Law" shoes are made in regular heights and high cuts. Men's, Boys' and Youths' at \$2.50 to \$6.00. Also for Women, Misses and Children at \$1.50 to \$2.75.

These and other "Star Brand" shoes—over 750 styles—are sold by 20,000 good merchants. Go to the "Star Brand" dealer and see a "Stronger-than-the-Law" shoe cut up so you can see just how it is made.

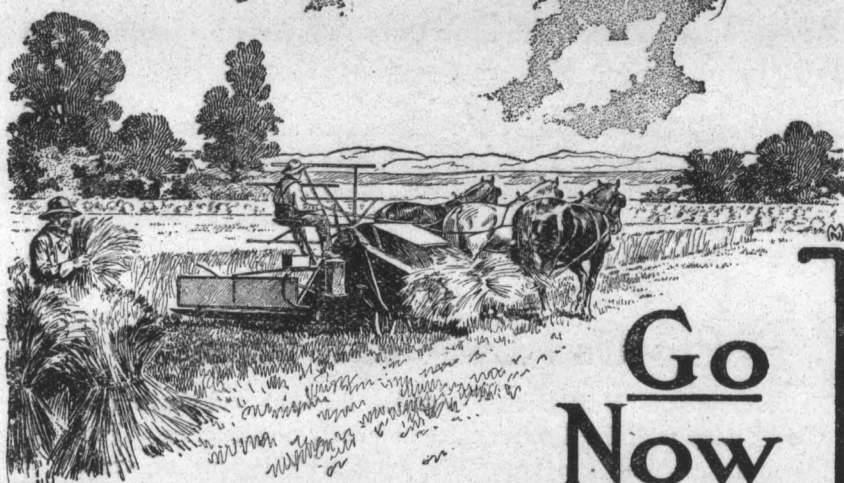
Don't buy shoddy shoes at any price. Always insist upon having "Star Brand" shoes with our name on the sole and the "Star" on the heel.

"Star Brand Shoes Are Better"

ROBERTS, JOHNSON & RAND
MANUFACTURERS Branch of International Shoe Co. ST. LOUIS

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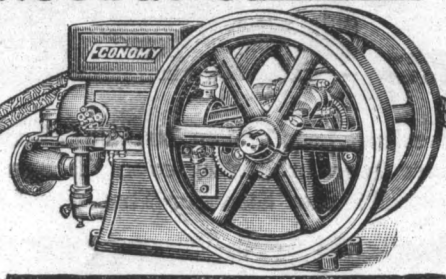
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Horticulture.

MAKING APPLE CIDER.

"Any kind of apples will do for cider," was the remark of an apple grower a few days ago when asked if he had any apples suitable to use for cider. Perhaps the old farmer was honest in his belief, but he was nevertheless mistaken. Ripe, clean apples only should be used for cider. Divide the fruit, so that in case of worms they may be cut out. The later cider is made, other things being equal, the better it will keep. A good cider apple should be hard and sound with rich juice and a somewhat acid flavor. The freshly-made cider should be placed in one or more open-headed casks, set upright, with faucets a few inches from the bottom, through which the cider can be racked off. Let stand about eight hours for the scum to rise to the top, which should be skimmed off. If about one pint of strong wood ashes and the same of lime is put in a barrel it will cause the pomace to rise to the top better. A deposit of fine pomace will settle to the bottom below the faucet.

Care should be taken when drawing or dipping cider not to disturb the settlings in the bottom of the casks. It should then be stored in as cool a place as possible and tightly bunged. It is claimed by many that cider will keep sweet longer in oil barrels than in others, as the oil which comes out forms an air-tight coating on top of the cider in the barrel. A great many prefer new barrels for cider, but I think second-hand whisky or oil barrels will give satisfaction. Some people use salicylic acid to keep cider sweet. I generally find that, while fermentation is prevented, the cider has a kind of flat taste and, of course, can not be used for making vinegar. Some claim to get results from this kind of cider in manufacturing vinegar, but all cases that have come under my observation have proven that no good vinegar can be obtained by such a process. There are other ingredients than salicylic acid which can be used to keep cider sweet. One pint of grated horseradish added to each barrel will prevent fermentation. Cider can be preserved by adding one pint of mustard seed to each barrel.

Cider can be kept sweet for years by putting up in the ordinary preserving cans, such as the common fruit jar. Let fresh made cider stand until settled, then rack or dip off from the dregs, boil or skim until thoroughly clarified and while warm put into bottles or jugs. Fill them as full as possible, cork tightly, but do not seal, and set in a dark, cool place. This cider will become better than when first made. To make champagne cider, let it partly ferment and then rack off into bottles. Put about four raisins and as many cloves in each bottle, cork tightly and seal. Store the bottles in a cool cellar. Cider when made in clear, cold weather late in the season will keep best. All packages should be full and tightly corked and stored in a cool place. If a package is opened on a warm day it will ferment and soon have an alcoholic effect, therefore it should be used as soon as convenient after opening, if the weather is warm.

A. M. LATHAM.

STRAWBERRIES AN EXACTING CROP.

In strawberry growing, as in other lines of agriculture, the largest success is secured only by directing operations along definite lines of procedure. There are several factors involved. First there is the question of soil preparation. Any good soil will grow maximum crops of strawberries, but it must be in a superior condition of tilth and contain an abundance of plant food. Good drainage is necessary and requires the prompt removal of water from the first two feet or so of surface soil. This drainage also promotes activities in the bacterial life in the soil and facilitates both preparation and maintenance tillage.

Second. There is the factor of tillage which should secure a fine, mellow, yet compact soil. It is hardly possible to overdo the matter of preparing the soil for strawberry plants. Thoroughness of preparatory tillage facilitates the work of maintenance tillage, but to profit most therefrom, the latter must follow closely the discontinuance of the former to avoid crusting and consequent loss of soil moisture.

Third. Varieties must be selected that are good producers and suited to market requirements; and, too, the plants must be handled in a manner to conserve vitality and insure quick, vigorous growth in each plant. This requires that the roots be protected from the sun and air while out of the ground, and that the roots be firmly imbedded in the soil with the crown just on a level with the surface.

Fourth. The style of row influences results both as to the quantity and quality of the product, as well as modifying greatly the work required, both as to kind and amount.

Fifth. Efficiency in methods requires winter protection to the plants; and it is the opinion of the writer that this factor is the most essential of any, or, at any rate, is indispensable to securing returns commensurate with the labor and other considerations involved.

Sixth. The market problem enters largely into the question of profitable returns; and this is a question that should be carefully considered at the start; immense crops of superior fruit will avail nothing, if the crop can not be disposed of to a good advantage.

Seventh. Because of the high moisture content of a properly developed strawberry, the moisture factor is one of great importance and the problem of maintaining such a state in soil moisture that the needs of the plants may be fully met is a perplexing one; oftentimes a period of drought will render useless, to a greater or less extent, the labor and painstaking care of the most proficient grower; hence cultural methods should be such as to conserve a maximum degree of moisture during the fruiting season.

Eighth. Insect pests and fungous diseases make necessary timely applications of insecticides and fungicides to insure the highest state of health and vigor in plant foliage.

Ninth. Skill and ability are required to properly harvest and dispose of a crop of small fruit, of whatever kind. The berries must be picked at the right stage of ripening, and handled in a manner best adapted to the requirements of the case. Proper oversight of the pickers, suitable packages, and ability as a salesman, are the points to be considered.

The degree of efficiency in acquiring a knowledge of the underlying principles and their application to the problems met, determines the degree of success secured.

Emmett Co.

M. N. EDGERTON.

IMPORTANT GATHERING OF HORTICULTURISTS.

An event of national importance to fruit and nut growers and the fruit and nut growing interests of this continent will occur in Washington, D. C., Nov. 17 to 22. On this occasion the American Pomological Society, The Society for Horticultural Science, The Eastern Fruit Growers' Association and the Northern Nut Growers' Association will meet as a unit. The program and business of the separate organizations will be conducted independently in the same building, while all exhibits will be displayed in common though entries shall be made through the respective bodies, thus keeping the identity of each intact. The material already promised for the several programs indicates an exceptionally interesting and valuable series of addresses and lectures both in text and illustration.

Exhibits are assured from Cuba, Porto Rico, Hawaii, the Philippines, Canada and all the leading fruit growing sections of the United States. Ample cold storage space has been provided near the meeting place and persons contemplating making an exhibit of perishable fruits may forward material well wrapped and packed to the Washington Market Company, who will care for it at a very nominal charge. All packages should be plainly marked "for the American Pomological Society." Requirements for exhibit space should be filed before October 15 with the secretary of the American Pomological Society, who may be addressed at 2033 Park Road, Washington, D. C. Exhibits of new or little known fruits or nuts are solicited from all parts of the continent. For meritorious new ones the American Pomological Society offers the Wilder Medal, the foremost honor awarded by American pomologists. Other pomological subjects of special merit are likewise eligible to entry for this honor. Application for entry for Wilder medals should be made to the secretary of the Society not less than ten days previous to the date of meeting. Exhibits of fruits and nuts will be confined to plates, trays, and cartons.

Poultry and Bees.

LAYING BOXES FOR THE HENS.

In providing laying boxes for the hens the main point to be considered is the possibility of keeping them clean and sanitary. The great danger is that they will soon become infested with mites and lice, hence the necessity of having the boxes so constructed as to be easily and quickly cleaned.

Boxes should be of a size to fit the hens; thus the larger breeds should have larger boxes. Nests, however, should not be made so large that two or three hens can crowd on at once, with consequent strife and broken eggs. The number of nests should be about one for every three hens in the house. Some poultrymen use separate boxes placed under a shelf along one side of the building. It is a good plan to have the nests in semi-darkness, as hens are supposed to like seclusion when laying. They are not so likely to form the habit of egg-eating if nests are not fully open to the light. This pernicious habit is usually formed by accident. The nesting boxes form a tempting place in which to scratch if they are placed in the strong light; an egg is broken, it is eaten, the taste is enjoyed and the habit is formed. Darkening the nests may even then overcome it, but better it were never contracted.

An excellent method of making nests is to put the sides together, bottomless, resting this frame upon a shelf a little wider than the box. The boxes should be half filled with nesting material, which may be easily changed as desired by simply removing the frame and sweeping the shelf clean. This is the easiest style of nest to keep free from vermin. Hay and straw are poor material for the nests, being too bulky and unyielding. Seed and chaff from the bottom of the hay mow is much better. Best of all, however, is cedar excelsior, as it helps to keep lice in check. Nesting material may be removed and placed outside for cleansing. It should always, however, be thoroughly dry when returned to the nests. It is best to provide new every few months, as the old becomes so discolored and foul that exposure to the action of the elements will not cleanse it.

There are many variations of the nesting box which might be mentioned. The more advanced breeders of fancy stock are using the trap nest almost exclusively. This hardly seems practical for the poultryman who keeps hens for eggs particularly, and it is scarcely necessary unless one is building up a particular strain for breeding. One could have a building equipped with trap nests, in which his best hens are kept to obtain eggs for hatching. In fact if one is in the business on a considerable scale it will pay him to improve his flock in this way.

New Hampshire. C. H. CHESLEY.

A GOOD HOME-MADE POULTRY LICE POWDER.

Nearly every poultry keeper is troubled more or less with lice on his fowls. While there are many ready prepared lice mixtures on the market, none are more effective than a mixture recommended by Pennsylvania State College. It can be made at home and is much cheaper than the commercial preparations. The formula is: 2½ lbs. plaster of paris; ¼ pint gasoline; ¼ pint crude carbolic acid.

When the ingredients are mixed one will have an effective lice powder that costs less than five cents a pound. The mixture should be worked through a fine sieve to break up any lumps that may be present and to get it in such form that it will sift readily. When it is first mixed it will be too wet to sift, but the gasoline will soon evaporate. The active principle in driving away the lice is the carbolic acid.

To use the home-made preparation, which should be kept on hand the year around, one simply sifts it over the birds the same as any other lice powder. By perforating the bottom of an ordinary baking powder can, a convenient sifter can be made. Then one holds the fowl to be treated, rubs back the feathers and applies the powder. A few applications will suffice. It may be used on young chicks which are affected as well as on older fowls. It is well to treat sitting hens very thoroughly before the eggs are placed under them, and then again after

the eggs are hatched. It is also well to treat all fowls at time of putting them into winter quarters.

Penn.

L. J. HAYNES.

SPROUTING OATS FOR WINTER GREEN FOOD.

Many poultrymen report satisfactory results from the use of sprouted oats in winter. It should be clearly understood however, that they are not fed for the food value of the oats themselves but rather for their stimulating effect upon the digestive organs. They prove an excellent laxative and consequently must not be fed too liberally, but, properly used, they relieve the poultryman from the necessity of providing succulent food in other forms during the cold months.

The process of preparing the oats, as practiced at the Maine station, begins with soaking the grain in water at a temperature of 60 to 70 degs. F. for about 48 hours in pails or galvanized wash tubs. During this soaking process there should be added from five to ten drops of formalin to kill the spores of moulds and to insure a clean, sweet feed. After soaking they are spread out about one inch thick on trays, which are placed in a sprouting rack, seven to each rack, the trays being ten inches apart, and kept at a temperature of from 60 to 80 degs. In from seven to ten days, depending upon the temperature, they will have developed sprouts about three to four inches long, as well as a massive root development, the entire mass being very tender and succulent. The fowls will eat them ravenously. About one square inch of feeding surface is supplied daily to each fowl or what they will clean up quickly.

CLOSING THE HONEY SEASON.

To close the honey season properly requires a little thought and quick action. Upon it depends the reaping of the largest returns.

When the flow from white-honey plants commences to diminish, the supers on the hive should be reduced to one. Take all the rest off and remove and crate all the salable honey. Crate it according to the grade it belongs in. All the rest which is partly or wholly uncapped, but which has considerable honey in it, is put into supers, the partly capped in supers by themselves.

Go to the hives and remove the one remaining super and put on one in which the combs are partly capped. These will be all or nearly all capped if the honey flow does not stop too quickly. Take all the salable honey from the last super removed and treat as the others. This keeps all your white honey from being mixed with the dark, which prevents its bringing the highest price.

If there is a fall flow you may put on a super of the partly capped honey and, if you have not enough, put on the supers having uncapped combs. Near the close of the fall flow the above process should be gone through with again so as to get the greatest possible number of combs in a salable condition and prevent a large accumulation of partly filled sections.

The remainder of the sections, whether partly or wholly uncapped, are extracted. The partly capped sections are uncapped deep before being put into the extractor. The combs are saved for next year, as they make valuable bait comb for getting bees up into the supers early.

There will be considerable liquid honey smeared over the sections after extracting. The sections are put into supers and two of these are put on a hive at sundown, with an empty super between. The bees will clean these up in twenty-four hours, when they may be removed. The combs should be piled in a building that is known to be mouse proof.

The cappings will have considerable honey in them which may be pressed out with a wax extractor or some sort of a press. The residue will be nearly pure beeswax. This may be rendered by means of a solar wax extractor.

With extracted honey much the same process is gone through. Care must be taken not to extract uncapped combs until they have remained on the hive a long time, as the honey is liable to be thin and unripe. This makes an inferior product which is liable to ferment and sour.

Shiawassee Co.

N. F. GUTE.



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will afford you the grandest outing and recreation of the season, as well as chance to compare with your brother farmer from all over the country as to what is going on in the dairy world because everybody and everything of value to the industry will be on tap.

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Different from all others. 4 or 2 horses. Grind Corn with shucks and all small grains. (Also make 10 sizes of belt mills)

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Dairy.

CONDUCTED BY COLON C. LILLIE.

ROPY MILK AND CREAM.

We are having some trouble with our milk, or rather cream, and I take the liberty of writing to you for advice. We sell our milk direct to a milk man in the city. The trouble is sticky or ropy cream. After the milk stands about 24 hours or longer the cream will stick to the sides of the can, or if in a small vessel it will hang in a kind of a rope when poured out. The milk itself will be all right and it never seems to sour, and it doesn't show any for 24 hours, or sometimes nearly 48 hours. We were troubled some last summer for a week or two, earlier in the season, right after a lot of rain and one of our neighbors was troubled the same way. They take milk to the same man. We didn't find out the trouble. We had the deputy state inspector here to look over everything and he said everything was O. K. as far as he could see and thought the milk would be all right in a short time. But we would like to know the cause. We think it is something the cows get after a heavy rain for it happened the same this year, we had a very heavy rain here about two weeks ago. The morning and night's milk is just about the same. We deliver at night and cool the morning's milk at home, and the milk man cools the night's milk and he washes all the cans. We feed the cows grain, oats and bran twice a day, and stable cows at night and feed green corn, all they will eat up clean, in the daytime; have timothy and red-top pasture. We have another neighbor that has the same trouble with his milk, with cows on clover pasture, and I think grain or green corn. Please let me know what the trouble is, or what you think would cause the same.

Bay Co. W. J. M.

From the description given by W. J. M., one is certainly warranted in saying that he is troubled with ropy milk bacteria. Even though microscopic organisms of plants have a peculiar power of keeping milk sweet for a considerable length of time at the same time they may make it stick or ropy. They always trouble more in wet weather than they do in dry weather. Usually cows get infested with them by going through the mud or water in the pasture and the bacteria get onto the teats and udders of the cow. Then when the cow is milked some of them get into the milk and there they multiply and do the damage. There is nothing serious about this. It can be easily prevented. When I was connected with the Dairy and Food Department as deputy we had several cases of this kind brought to our attention. Dr. Robison, who was then the state analyst, made a very thorough investigation of one particular case. He found out that the cows in going out to the pasture had to go through a mudhole to the end of the lane. It was an exceedingly wet season. In this mudhole the teats would drag in the water and this is the way the cows became infested with these bacteria. Of course, if there is anything like this then it should be fixed so that the cows would not have to go through a place of this sort. Of course, we know that sometimes in pastures we have water that it would be impractical to fence the cows against, but a mudhole in a lane, or something of that sort the fence should be moved so that the cows would not have to go through it and get the bacteria on their udders.

The way to stop this is to wash the dairy utensils and the udders and teats of the cows in a weak solution of carbolic acid, a five per cent solution. Also have the milkers wash their hands in this solution and your trouble will disappear almost as if by magic. You might think it necessary not to wash the dairy utensils and milk pails and strainer and that sort of thing if you wash the teats of the cows, but undoubtedly some of these bacteria are on some of the vessels now, and if you don't wash them in a weak solution of carbolic acid then they will continue to multiply and you will think that the treatment of the cows is not effective. The practical way to do it is when you get the water ready to wash the dairy utensils in turn just a little bit of carbolic acid into it and stir it up thoroughly. It won't do the dairy utensils, nor your hands, any harm, but it will kill these bacteria. Then before you milk take a brush or a cloth and brush off the udders and flanks of the cows and have a solution of this sort. Take a pail of water and pour just a little bit of carbolic acid into it and stir it up thoroughly and then with a moist cloth rub off the teats and udder and flanks of the cow. Wash your hands in this water before you begin

to milk. If you will do this two or three times you will be rid of your trouble. It is simple, doesn't cost much, but you must use the carbolic acid or you will continue to have trouble.

WHY DOES IT TAKE SO LONG TO CHURN?

Can any of the Michigan Farmer readers tell me why it takes me so long to churn? It takes from one to one and a half and sometimes two hours to get butter. There is not one of my cows that have been giving milk a year, and besides two of them were fresh about six weeks ago. They have all the salt they want, because there is a trough in the cattle shed where they can go and get salt any time they come from the pasture for a drink. They have good clover pasture and are fed night and morning green corn fodder cut fresh. After I have churned about one hour the cream will sound (I use a barrel churn) as though it had come and then I will have to churn sometimes an hour or more afterwards. It comes in little fine granules and stays there, then I will let it stand for three or four hours and draw off the water and milk and put on fresh water, then churn perhaps about an hour or so before it will gather, when it will be soft and salty. We used a separator until about two months ago, and now I set the milk in regular milk crocks in a good stone cellar and it is no better. If anyone can tell me the cause and a remedy for the same I will be only too glad to know.

Manistee Co. H. E. H.

Usually when the churning does not come in the proper time it is a matter of temperature of the cream, and of ripening of the cream. If you attempt to churn sweet cream too cold it takes a long while to churn. On the other hand, if the cream is properly ripened and at the proper temperature, about 60 degrees, it usually comes in a half or three-quarters of an hour. Too many people guess at the temperature in making butter. Temperature is a very important thing in the process of butter making, and one ought to have a thermometer. After the cream has accumulated in sufficient quantities for a churning, it ought to be ripened, that is, it ought to be soured. This can be done by putting the crock or the can in which the cream has been kept into a tub of warm water, stirring it so as to have it all of uniform temperature until it is 70 degrees. Then leave it at 70 degrees until the next day, or about 24 hours. The cream sours or ripens as the buttermaker says. Now take the cream can and set it in a tub of cold water and stir it gradually until the temperature is lowered to 60 degrees or a little below, depending something on the weather. Then put in churn but don't have your churn too full—the churn ought not to be over one-third full. If you fill your churn too full it is going to take a long time, there must be concussion in order to get separation of the butter-fat from the milk. And if the churn is one-third full it ought to churn in about a half or three-quarters of an hour.

ENSILOING BEET TOPS.

I know you have had experience in preserving beet tops in the silo. I have this year 45 acres of as heavy beets as I have ever seen and am short of other feed. We are now erecting a new concrete silo that is 14x40 feet inside. I think our silage corn will not fill it this year, so after the corn settles there will be room for a large quantity of beet tops. Now from your experience would you ensilo the beet tops or simply pile them in snug round piles to feed from the field? I know they keep well in this way, though, of course, they freeze quite badly. Again, do you have trouble from getting stones into your silage cutter in the beet tops?

Bay Co. L. W. O.

I certainly should put the larger part of this 45 acres of beet tops into the silo if I had room, because I know from experience that it makes splendid ensilage. The beet tops will keep in a silo just as well as corn. Where one only has a small acreage of beets it is a nice way to feed them out from small piles, where a little pains is taken when the beets are loaded to put the tops in such piles as suggested. If the fall is favorable and you can feed them out before it comes excessively cold weather then I don't think it pays to put them into the silo. But undoubtedly these whole 45 acres of heavy beets could not be fed out by this time, and they would last well along into the winter, and as is suggested, in extreme cold weather these piles will freeze clear through. I wouldn't like to feed too many frozen beet tops. As a fact, I would not want to feed too much of any feed that is frozen. If they can be thawed out before they were fed I don't think it would do any particular harm, but to feed many of them in a frozen condition I am positive would not be good for the animal. Then again, if the fall should be wet and stormy, the land is in such condition that

it is quite a job to go onto this land and haul off the beet tops. One has to do it whether it rains or snows, or in the sunshine, and he has to do it whether the fields are soft or whether they are hard, and as I say, a small amount of beet tops can be fed in this way successfully, but when you have large quantities of them it is too risky, and if I had the silo room I should certainly put them in. The only trouble in ensiling beets is that it is mighty hard on the ensilage cutter. A certain amount of dirt will stick to the tops and once in a while a pebble will get entangled into the tops. One year we took out the knives entirely of the ensilage cutter and had fair success in blowing the beet tops into the silo, but with this unusually tall silo, 64 feet, I don't know whether it would be possible to do it or not, but I know you can blow them that distance after they have been slightly cut up by the ensilage cutter. You could take out half of the knives and not cut them very fine and they will make good ensilage. One could rig up some arrangement so that he could draw up a big tub full of beet tops with a pulley and put them in in that way, which would be entirely satisfactory if this could be arranged. I believe that if one is going to raise a good acreage of beets every year it would pay to rig up something of this sort, or if one has a slat carrier that would be tall enough, and a gasoline engine to run it the beet tops can be pitched onto this open slat carrier and elevated. We did this one year. Since then I have not raised quite as many beets and they haven't been as good a crop some years, and we tried another experiment in mixing the beet tops in with cornstalks. We fed the beet tops and cornstalks into the feed cutter at the same time, and they were thoroughly mixed in the silo. It settled down and made splendid ensilage, and the cattle ate every bit of the cornstalks as well as the beet tops. If one wanted to he could also feed straw through the ensilage cutter at the same time he did the beet tops and get a good mixture in this way, which would be entirely consumed by the animals. The beet tops flavor the straw and the cornstalks and add to their palatability. Of course, one would not argue that it adds to the food nutrients of these substances, but it certainly adds to the palatability and they will eat more of them, and there is enough moisture in the beet tops so that it will pack down and make splendid ensilage. I am sure that it would pay to put the biggest part of this acreage in the silo. It is a splendid feed and it can be saved with practically no loss when it is ensiled.

CERTIFIED MILK PRODUCTION.

The first medical milk commission that undertook the production of certified milk was organized in 1893. Since that time over 60 commissions have been established but nearly one-third of that number are inactive at present.

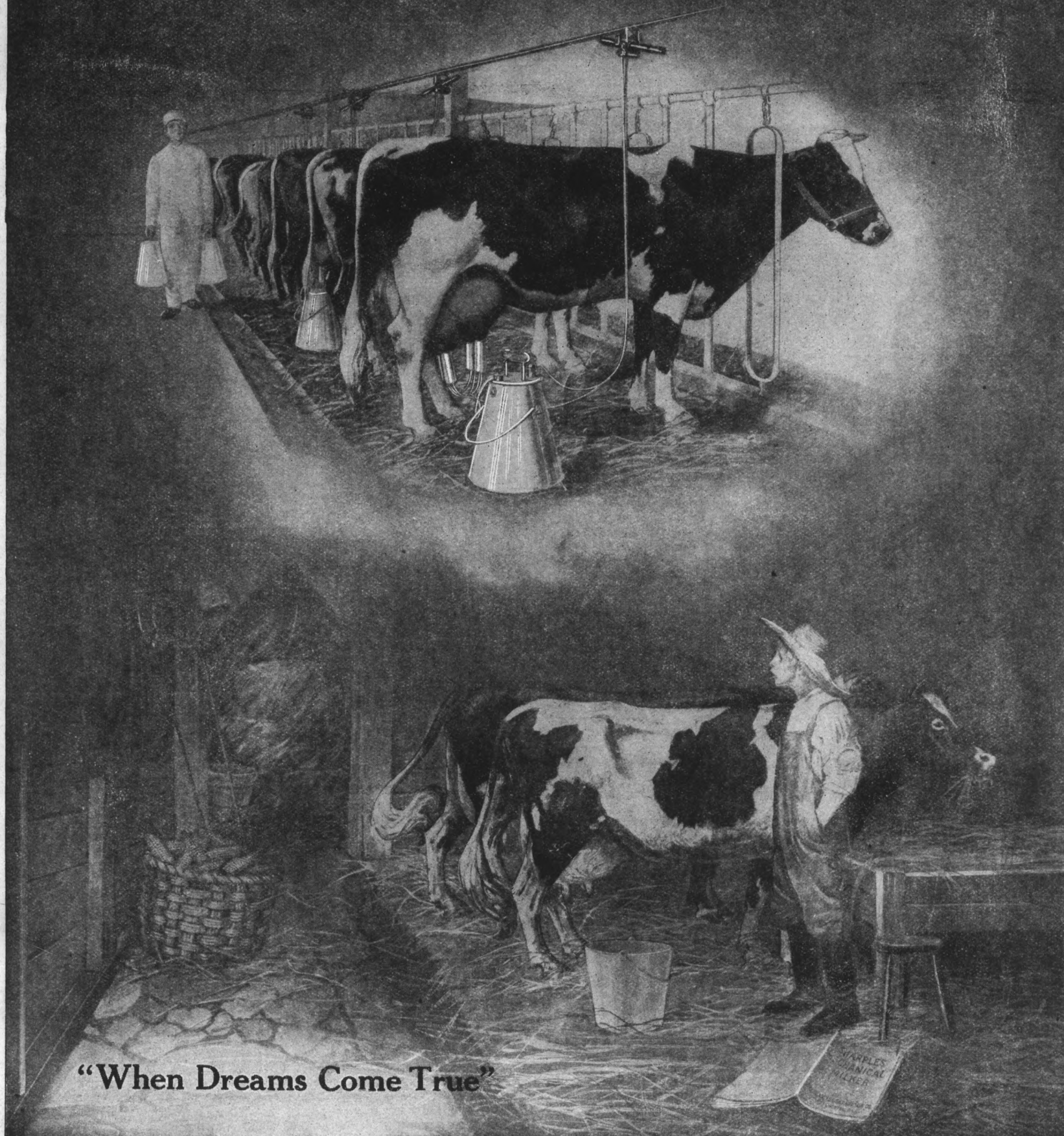
About 125 dairies are engaged in producing certified milk and the daily production is nearly 25,000 gallons, an increase of 300 per cent in five years. While this seems a remarkable increase it should be remembered that only about one-half of one per cent of the total milk supply of the country is certified.

While the chief demand for certified milk is for infants and sick people, it further serves to teach the public the value of careful methods in milk production and the extra cost of absolutely clean milk.

CREAM AND MILK TESTED FREE.

We are pleased at the way readers are responding to our offer to test milk and cream free of charge. It indicates that subscribers are giving close attention to the columns of the paper, since we did not display the plan in bold type to get the attention of those who merely glance through a paper, but in the regular type used for all our contributions that the careful and earnest reader would discover the plan and adopt it if he approved and had use for it. The results indicate that such readers have not only read of the plan but that they approve it and that in the disposition of cream and milk there is evidence of a real demand for the service. The free test is available to everyone of our subscribers. When the dealer collects your milk or cream have a sample taken that is satisfactory to you and the dealer, put it in a wide-mouthed bottle, enclose in mailing case and send to the Michigan Farmer Laboratories, 674 Woodward Avenue, Detroit. If you have no mailing case we can mail you one for six cents, or we can send you a suitable bottle and case for ten cents. We have arranged with a large company to supply these cases and bottles at these prices for the convenience of our patrons.

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DETROIT, OCT 4, 1913.

CURRENT COMMENT.

With the third American Road Congress in session at Detroit, with thousands of delegates present who are interested in the good roads problem in various sections of the country, and with leading road building experts of the United States and Canada in attendance, Detroit may well be said to be the good roads center of the western hemisphere during the present week. This Congress, as previously announced, is held under the auspices of the American Highway Association, the American Automobile Association and the Michigan State Good Roads Association. Participating in its deliberations are nearly 30 organizations directly or indirectly interested in the good roads propaganda in different sections of the country.

From a technical standpoint the men who have been given a place upon this program are wholly competent to discuss the questions relating to the building of permanent highways from every standpoint, from the financing of the proposition to the maintenance of the permanent highway after it has been built. From the standpoint of disseminating information among highway officials and road experts, this Congress is bound to be a great success. Also from the standpoint of developing the most advanced ideas in the administration of the road money the same desirable object will doubtless be attained.

From the standpoint of creating rural sentiment for better roads, where such sentiment is most needed, however, this Congress would scarcely compare with a much smaller public meeting at almost any point in the interior of the country where the road problems of immediate practical interest to the people there gathered might be discussed. While meetings of this kind are of no small importance to the cause of better permanent highways, yet probably the other end of the highway problem is of even greater importance as was emphasized by Hon. A. W. Campbell, deputy minister of railways and canals in Canada, who has spent 25 years in good roads work, mostly in Ontario.

During the first day of the Congress Mr. Campbell, in an excellent address, emphasized the idea that in any comprehensive scheme of road improvement the common dirt roads should be first improved to a condition of economic efficiency; next the main roads, then the national trunk lines, and finally the international highways; and that not only should the common roads be the first improved, but that they should be so improved under competent supervision by public spirited citizens who make this their life work. In this connection the point was made that where there is only a small amount of money to spend it is far more essential that it should be wisely expended, with careful attention to all details, than where a larger sum is appropriated for a more definite purpose.

In his most practical talk Mr. Campbell emphasized the idea that where bonds are issued for the construction of permanent highways care should be taken that

the period intervening before the maturity of the bonds should be a shorter period than the life of the roads, in order that future taxpayers may have a residue of the value left in the roads after their first cost and maintenance has been paid. So far as maintenance is concerned, he advised that it should be provided for in every case before or at the time the roads are constructed as it is an economic waste to build good roads without any provision for their proper maintenance.

It is a matter for congratulation that almost at the outset of a great road congress like that in session at Detroit, such exceedingly practical ideas, so far as this problem relates to the farmers of the state and country, should be voiced. With the dissemination of this spirit among those interested in the good roads propaganda throughout the country there is hope that ultimately each township within the nation may become as much a good roads center so far as the interest of the people is concerned, as is the city of Detroit this week during this session of the American Road Congress.

When this shall become true, then will the solution of the good roads problem be greatly simplified since all the factors for a really efficient road system will be working harmoniously together toward the same end, viz., the highest degree of economic efficiency at a minimum of cost.

The Federal Government and Good Roads.

In his address before the Good Roads Congress at Detroit Monday, Secretary David F. Houston, of the United States Department of Agriculture, set forth the attitude of the federal government toward the movement for better wagon roads in this country. Naturally the leaders along the line of rural economics would early appreciate the function of the common roads in bettering rural conditions, both socially and economically, and the growth of the activities of the general government in the improvement of roads seems to proportionately measure the increasing appreciation of the American people at large in this public enterprise. In 1893 Congress appropriated \$10,000 to investigate methods of road management throughout the United States and from this modest beginning the work has grown until there has been established an office of public roads, a somewhat comprehensive organization, whose scope and usefulness are much broadened from the work of the department along this line 20 years ago. Recently Congress appropriated \$500,000 to be expended by the secretary of agriculture in co-operation with the postmaster general in improving the condition of roads to be selected by them over which rural delivery is, or may be, established. This appropriation is made contingent upon the raising by the state or local subdivision where the roads are to be improved double the amount assigned by the federal government, all of which, however, will be used under the supervision of the federal engineers.

The Secretary also pointed out how the sentiment for good roads was developing locally in that the states which appropriated \$2,000,000 ten years ago gave \$43,000,000 in 1912 and that the counties and townships of the country last year raised \$175,000,000 to be expended upon the roads. It is significant in connection with the use of this last amount that from 20 to 40 per cent was wasted, hence the economy of co-operating with the federal government that the monies which are gathered from the small subdivisions may be used to the greatest possible advantage. To this and other ends he believed that there should be the closest relations between the states and the national government. By proper co-operation they can be most helpful to the smaller political divisions by bringing to them the results of experience from all over the country and world, as well as by conducting experimental work, that the officials and engineers of the smaller places may have the last word in methods of road construction, maintenance and administration.

The Secretary emphasized the importance of making haste slowly in matters where certain knowledge cannot be had, for while the people will stand a reasonable expenditure of money when they are convinced that it is applied to the use for which it was intended, they will rebel if their money is used lavishly on untried plans. So to provide a safe policy for the federal government to follow in extending help to the local political units in the good roads movement, he believed that activities should be confined to the following lines:

"First, the federal government should require the co-operation of the state in a larger measure in financial support and in construction and maintenance.

"In the second place, it should be understood that the federal government should have adequate supervision and control over the enterprise in each community and guarantee the efficient expenditure of its own funds.

"In the third place, the federal commissioner should deal exclusively with efficient agencies provided and supported by the states.

"In the fourth place, the plan should provide for the apportionment of funds among the states, on the basis of certain essential factors; and

"Finally, the primary undertaking should be to improve those community roads which are essential for the marketing of products and for the betterment of the physical, intellectual and social side of rural life."

Personally the Secretary made a most favorable impression. His views were received as the result of a careful examination of the road question from every angle and this, with a personality devoid of the marks of the politician, but traced with every line of the true statesman, elicited the confidence of all who heard and saw him. While his message was directed particularly to those interested in the bettering of our greatest means of transportation and communication, the country roads, he unconsciously spoke with equal force and emphasis upon the hundreds of other rural problems coming under his supervision by virtue of the high position which he holds, through his own personality.

National Aid to Agriculture.

Now that a tariff bill has passed both houses of Congress and all differences between the two houses are about to be amicably settled and the bill written into law, while the currency measure is well on its way toward final consideration by the Senate, other important legislation will be considered by Congress.

It is quite certain that measures which are drawn primarily in the interests of the country's agriculture will receive early consideration when the other important work which is before Congress is disposed of. Among the measures of this class which have been introduced is a House resolution providing for the organization and control of agricultural credit associations. It is probable, however, that little will be actually accomplished in legislation of this kind in the present session of Congress inasmuch as the American Commission on Agricultural Co-operation has not as yet formulated its final report of the investigation conducted in Europe. But the fact that such a resolution is now before the Committee on Ways and Means of the House, together with the fact that President Wilson recently issued a statement urging action by Congress in behalf of rural credits seems to insure that this proposition will be made the subject of national legislation at a comparatively early date.

In the meantime, other measures in behalf of American agriculture are also pending, including a bill recently introduced by Senator Smith, of Georgia, to provide for co-operative agricultural extension work between the agricultural colleges of the several states and the United States Department of Agriculture. This bill is practically the same as the so-called Lever bill, which was passed by the House in the last Congress and failed of final passage in the Senate by only a narrow margin, due largely to the fact that a bill drawn somewhat along the same general lines which originated in the Senate had been previously passed by that body and the sympathies of his colleagues were with the author of this bill instead of the author of the House bill.

The bill above referred to which is pending in the present Congress provides for appropriations for agricultural extension work in the different states, beginning with an appropriation of \$480,000 for each year with an increase of \$200,000 additional per year until there is permanently appropriated for each year an additional sum of \$3,000,000 over and above the original sum. It is quite certain that federal aid for agricultural extension work along these lines will be strongly supported by educators in this line of work the country over. Whatever the final outcome of proposed legislation, such as is above noted, the fact remains that there is very general and definite recognition among members of Congress that agriculture is worthy of their most serious

and solicitous consideration, whatever may be the exigencies of the hour so far as tariff legislation is concerned.

WHAT IS OFFERED THIS WEEK.

Did it ever occur to you that the most tactful and considerate way in the world for a merchant to present his proposition to you is through a newspaper advertisement?

The advertisement never intrudes, never bores, never insists. It awaits your convenience and is satisfied with whatever attention you may wish to bestow upon it.

But when you are ready, there you will find it, with its truthful information about some thing some man has for sale.

Before you lay the paper aside, look over the advertisements and see what is being offered this week.

HAPPENINGS OF THE WEEK.

National.

The champion base ball teams of the American and National leagues for the season of 1913 are the Philadelphia Athletics and the New York Giants. These two teams will contend for the World's Championship, beginning next Monday at New York.

Dr. James B. Angell, president emeritus of the University of Michigan, is dangerously ill at Ann Arbor with pneumonia. Dr. Angell is now 84 years old, and has presided over Michigan's great school for 40 years. His health began failing three years ago following a tour of Russia where, because of his inability to speak the language his experiences were trying and resulted in a temporary breakdown when he reached Germany. Through all the physical infirmities, however, the grand old man has retained his remarkable mental faculties unimpaired.

Eight hundred teachers of Detroit have petitioned the regents of the University of Michigan for an extension course of study to be given in a series of lectures on Saturdays. It is understood that the petition will be allowed.

Prof. Julia Anne King has resigned as head of the department of history of the Normal College at Ypsilanti after a continuous service of 32 years. It is hoped by both alumni and students that she will consent to retain some connection with the institution.

Two Bay-City officials are in trouble. A grand jury has returned indictments against Alderman Durocher, charging him with drawing pay from the city as an inspector, and former city engineer Schindette, who is claimed to have padded the city payrolls to his personal advantage.

George Brown, of Sheridan township, Tuscola county, was killed in an automobile accident at Bad Axe, Mich., and three others were injured.

It is probable that the cause of the strike of the 38,000 allied shopmen of the Illinois Central and the Harriman lines, will furnish the first work of the federal industrial commission recently appointed by President Wilson. The men walked out two years ago, a large number of whom are now otherwise employed.

Two drug-crazed mulatto boys started a shooting affair at Harrison, Miss., Sunday, which resulted in the killing of three white men, three Negro men and a Negro woman. A race war was prevented only by the arrival of a company of national guardsmen and the vigilance of local officers.

Highland Park, a suburb of Detroit, which is now securing its water supply from the larger city, is planning to install its own system by bringing water from the hills of Oakland county.

Timothy L. Woodruff, three times lieutenant-governor of New York state, was stricken with paralysis in New York city Monday while notifying John Purroy Mitchell of the latter's nomination for mayor of that city on the republican ticket.

The case of Governor Sulzer in the impeachment court of the New York Assembly, is proceeding. The prosecution expects to finish its side of the case by the middle of this week when it is anticipated that two weeks will be consumed in examining the witnesses of the defense.

The copper miners of the Upper Peninsula have won a victory in the local courts by having the injunction prohibiting parading, picketing and other strike activities, dissolved. This has resulted in a change in General Abbey's plans of removing troops from the strike zone, since the labor leaders immediately set about to plan for a demonstration early this week. While the miners are endeavoring to hold parades, the operators are seeking the protection of the troops while importing strikebreakers, which they declared they would not do when the difficulties with the laborers first began.

At a scientific gathering in Detroit it was stated by an authority that there were probably around 100 persons poisoned every year in this country by mushrooms, although a majority of the varieties of this plant are non-poisonous.

United States Senator Henry Cabot Lodge, of Massachusetts, is seriously ill at his home at Nahant, Mass. The well-known statesman recently underwent an operation.

Foreign.

The international aeroplane races for 1913 were finished September 29. France retains the title of world's champion. The race over a course of 124.28 miles was covered by the French aviator in 59 minutes 45.3 seconds, or at an average speed of 125 miles per hour. Belgium was awarded second place.

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

A Vanished Pleasure of our Yesteryears

By HOWARD C. KEGLEY.

THE first time I ever went squirrel hunting I accompanied my grandfather on a journey into the woods near his home. He was armed with an old muzzle-loading army musket, and he carried a shot bottle and a powder flask in his pocket. We trudged along happily that day, for there was neither road nor wire fence to break the peaceful quiet of our surroundings. Through bramble, across bog and into heavy timber we went, and finally arrived at the big trees in the nut grove.

I shall never forget the first squirrel we shot. Grandfather saw him first, and then he pointed him out to me. I shaded my eyes with one hand and gazed long and eagerly at the hickory limb on which the red-fox squirrel was lying, and then I squinted my eyes convulsively as the old musket belched forth the lead that brought the quivering shape to earth.

Three squirrels we killed that day, and grandmother stewed them for dinner on the day after.

During the succeeding summer I frequently accompanied grandfather when he went squirrel hunting, and always he allowed me to carry the game, a privilege that used to make me feel very important, especially when we happened to meet someone who congratulated us upon our success. I would swell out my chest and look very indispensable to grandfather on such occasions.

Eventually I became old enough to handle a gun. My brother owned a little 22 rifle that wasn't much of a looker, but it had a pair of sights on it which made it impossible for us to miss the mark if we squinted our eyes properly when taking aim. I'll never forget that little gun. Half of the time when I was using it I was getting a squirrel with it, and the other half of the time there was a bullet stuck in the barrel of it. It always seemed to me that every time I tried to fire that gun the bullet attempted to turn a somersault in the barrel.

With that little rifle under one arm I used to meander through the woods in quest of squirrels, when I was about 15 years old, and I gathered a great many of them into my game sack, too. About that time grandfather was getting too old to go hunting. He used to sit dreaming on the doorstep, through the long afternoons of fall, when the blue jays were yelping in the haw trees and the oak leaves were chrome yellow or fiery red from frost bites.

Along about that time it was that, when I would walk across fields to grandfather's house to spend a day, he would shift his gaze to the distant wood and say: "Young fellow, I'd like powerful well to have a squirrel for mother to put in the pot. Do you 'low you could take the musket and go over there in the grove and knock one down?"

At such time I took the old muzzle-loader, climbed the rail fence down by the barn-lot, went over into the hickory grove and bored a hole through a couple or three red squirrels which made fine eating after grandmother had cooked them to a turn. During his last years it was my privilege to bag many a squirrel for grandfather, and he remained a lover of squirrel meat until the end.

By the time grandfather had gone to the better land I had grown up and was as persistent a squirrel hunter as he had been in his heyday. During my high-school days I used to sit in the sweltering schoolroom sometimes all day, but not often. If the yelp of a blue jay drifted in at an open window, bearing to my ears the sounds of the woods, I was a goner. I could no more withstand the call of the timber than I could take wings and fly. At such times, when the oak leaves were flaming red with autumn color, and the hickory nuts were falling with each pass-

ing gust of wind, I would sneak out of the side door of the schoolhouse, go up the alley, get my rifle out of the stable, and "hike" for the hickory grove away up along the silent-flowing stream that wiggled its way through the rich soil of our community on its endless journey to mingle with the waters of the mighty deep somewhere along a far-off shore.

I used to love to tiptoe along through the woods, approaching a big naked tree with stealthy footsteps, keeping a watchful eye out for the flirt of an orange tail. With bated (not baited) breath I would pause beneath a tall sycamore and, starting with the lowest limb, search each bough to the end as thoroughly as though looking for a needle sticking in the bark of the tree somewhere. Then I would pass on to another tree and to yet another, studying each one until the muscles of my neck would ache from the tension. And then, suddenly, I would catch a glimpse of the object of my search as he was making a run for a hole high up on a big, crooked limb. I couldn't hit him with a rifle while he was running, so I'd have to wait till he came out. Sometimes he would come out in an hour and sometimes not again all that day. Some-

it could hardly be climbed, but my chum said he would climb it, and he did. The squirrel went into the hole head first. His tail was just barely inside the tree, and when my chum had finished his climb he grabbed that tail in one hand and started to pull on it violently. Of course the squirrel dug his claws into the wood and resisted arrest. Finally my chum relaxed his grip on the tail for a moment to get a new hold, and in that time the squirrel changed ends, so when my hunting companion put his hand back into the hole to seize the squirrel, that squirrel grabbed him by the index finger with its teeth.

My only warning was a yell. That boy relaxed his grip on the tree, and down he came, landing in a heap on the ground, with a notch bitten out of one finger. He was whipped for time being, but so great was his indignation that he filled his pipe full of tobacco, lighted it, climbed the tree again, and puffed and blew tobacco smoke down into the hole in the tree until the squirrel was so nearly suffocated that it had to climb out on a limb and be shot.

One time, just before my struggles with the world became so urgent that I was

our appetite for hunting, at least once in our lives. I presume that no less than four hundred squirrels were shot out of that piece of timber that day. It was less than a mile square, too. Today one might tramp through it all day without seeing more than one or two squirrels, and I have gone through it when I did not see any. Such have been the ravages of time.

I started out to tell you how much fun I used to have hunting squirrels. Now I am going to tell you how much fun I don't have in that way.

When grandfather first took me hunting we never encountered a fence in a long day's walk, except perhaps an old worm fence near the edge of the clearing, where the shoats were imprisoned. When I grew old enough to use a firearm the barbed wire fence had arrived upon the scene, and I occasionally found a farmer who was unwilling to permit me to hunt in his fields and woods.

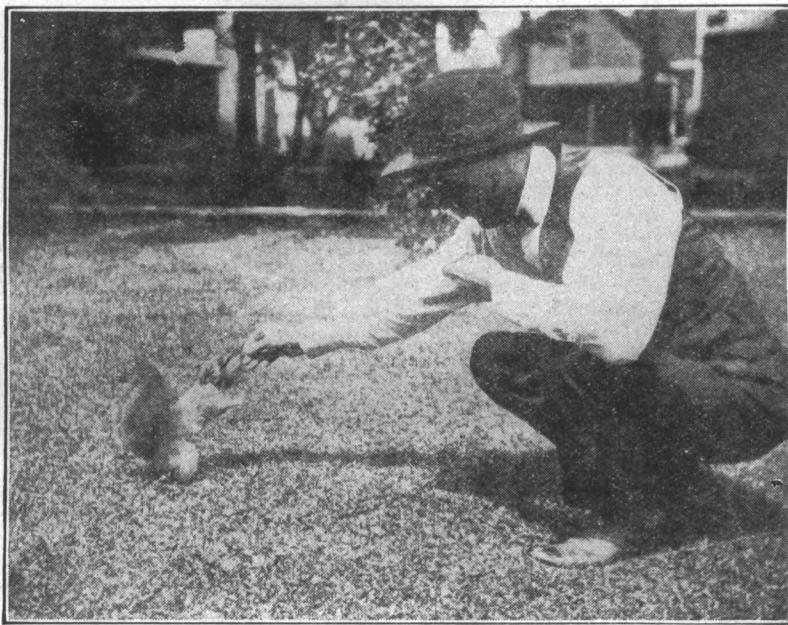
A few months ago I took a little journey back to the scenes of my boyhood and, oh, what a change I found! There was a railroad track cutting across the best piece of timber land in that part of the country. The old hickory grove was missing. It had been cut up and sold for town lots. There are some big houses now on the land where I once lay on my back in the grass and waited for a squirrel to come out and play with me. Buck-miller's pasture is still there, but it has a sign on about every other fence post, which says: "No Hunting on these Premises. No Trespassing!" It is thus everywhere!

I sauntered up along the lazy creek that used to lead me to good squirrel shooting. Hamlin's walnut grove was gone. It long ago went up the chimney via the heating stove. The ground on which it stood is cut up into small plots which serve as an experimental plant for the state agricultural college. I ripped my trousers on a wire fence as I climbed over into what used to be Bob Hunter's pasture, in order that I might cut my initials upon and renew old acquaintances with an aged sycamore tree which was the only old landmark I could recognize. There were scars on its trunk which still bore silent proof that I, and many of my boyhood friends, had often used it as our backstop when we had wished to indulge in a little target practice. I took my jack-knife and tried to dig a bullet out of the tree, but it was no go. There was a house on the hill nearby, and a woman was standing out in the dooryard, watching every move I was making. She appeared to be afraid I was going to carry away some of the thoroughbred Shorthorn cattle that were grazing in the pasture.

So I left the old, familiar spot, climbed over the fence again, and sat down on a cement culvert which arched the little tile ditch out of which I used to drink when I was thirsty. I didn't like the cement at all. I wished it had been an old wood culvert, or a tile drain.

Up through Hannum's farm I sauntered, out of gear with all the world. The big trees were all gone, and there wasn't a blue jay in sight. Poor birds! They have all taken themselves to other scenes, where corn and hogs don't satisfy man's earthly desires. Hannum's son-in-law was raising Hubbard squash on the spot where grew the biggest elm tree I ever shot a squirrel from. I was disappointed and sore at heart. Going back to the road I sat down on the end of a bridge, thinking that I'd catch a ride back to town when Bill Arrasmith came along with a load of corn. But no such luck. The only thing that came along was a big automobile with red, glistening gears. So I walked!

Days of our grandfathers, why did you get in such a hurry? There never was



Skiping lightly o'er the lawn,
Darting up a tree,
Whisking in and out again
Scolding saucily.

Leaping now from branch to branch—
Bridging airy spaces—

Pretty little creature he,
Full of dainty graces.

Seeking shyly after food
While the sunshine lingers
Here's a nut, so temptingly
Held in Daddy's fingers.

—Ella E. Rockwood.

times I waited two hours for him, and sometimes while I was waiting for him to reappear I would see another squirrel, some distance off, descend a tree and begin gathering nuts or acorns on the ground. In the latter case I would give chase, and if he didn't get into a hole I would tree him on a limb, where he would lie flat on his stomach, trying to defeat my aim. Then I would remove my coat and hang it on a sapling beyond the other side of the tree, and when he saw it the squirrel would get scared at it and come around to my side of the tree, whereat I would plug him and he would come down and take rooms in my game bag.

Oh, the fun I have had chasing red squirrels in the woods! Once, while hunting with a chum of mine, I treed a nice one. We shot him several times, but he got into a hole. The hole was fifteen feet from the ground, and the tree was so big

forced to cease being a frequent wanderer in the woods, I joined a party of sportsmen who drove twenty miles to a belt of virgin timber where, according to report, there were plenty of squirrels. We started at midnight and arrived upon the scene shortly after daybreak. I shall never forget the pilgrimage. Before we drove into the timber we could see squirrels running around on the ground, eating their breakfasts beneath the trees, and before we stopped the team the boys were standing up in the wagon, shooting at the game.

Fun? We had it all right. We were not the only hunters there that October day, however. Other parties followed us, and before the sun was two hours high the woods echoed with a fusillade that sounded not unlike a Fourth of July celebration. My party left the field of action shortly after noon. We had our game bags full of squirrels, and had satisfied

YET A LITTLE WHILE.

BY J. A. KAISER.

Yet a little while the vermillion and gold
Lying rich on a thousand hills,
And the purple haze hanging over the
world,
And the chorus of insect trills.

Yet a little while for the mellowing year
With its rich-tinted earth and sky;
Then the wailing winds, and the gray,
and the drear,
And the dead leaves that withered lie.

Yet a little while a life tarrying here
For its harvest of golden hours;
Then the breath of Death that doth with-
er and sear
Like the north-wind the leaves and
flowers.

Yet a little while and the spring-time's
warm breath
Will restore to Dame Nature her smile;
And the life laid low by the legions of
death—
Will it wake, yet a little while?

"THE STORMY TULIP."

BY Z. I. DAVIS.

The favorite flower of the Holland peo-
ple is the tulip. In their season, the
roads, gardens and fields are ablaze with
their gorgeous bloom. Acres and acres
are planted with them; also hyacinths,
narcissi and daffodils are cultivated ex-
tensively.

Haarlem, near the ancient town of Am-
sterdam, has the largest tulip farms in
the world. Florists in every country send
there for bulbs. Our beautiful white tu-
lips, so choice here, are grown there in
abundance.

At the season of the year when our
violets, arbutus and snow drops appear,
the neat, regular fields in Holland wind
along as gay as ribbons with their
abundance of many-colored flowers. For
miles the air is heavy with the perfume
of the graceful hyacinth clusters. Any-
one can gather as many bunches of them
as he wishes. The bulb and not the blos-
som is what they value the most.

There is a pretty custom among the
poor children there during the spring-
time. As the carriages of tourists bowl
along, they gather bouquets and toss them
to those who may be in too much of a
hurry to pick them.

An interesting story is told of Said
Pasha, a governor of Egypt, who lived in
the seventeenth century. He was pas-
sionately fond of flowers and for the grat-
ification of his taste he ordered a collec-
tion of the different varieties of tulip
bulbs for which Holland is famous. The
price agreed upon was 20,000 francs.

In time the large case of bulbs came
and was opened by one of the governor's
officials. Ignorant of the Pasha's order,
he thought that the box contained a new
kind of onion and accordingly sent them
to the kitchen. Looking at them, the
cook also supposed that they were an ex-
cellent variety of onion, and put them
away for a special occasion.

Some time later an important banquet
was arranged for by the governor. The
cook, wishing to make the affair the best
that was possible, prepared the ill-fated
bulbs for the table. They were grilled
and served in mammoth dishes. The ex-
clamations of the diplomats, on putting
their teeth into the hard, bitter roots,
were far from pleasant and the feelings
of the Pasha, upon learning the fate of
his adventure, can better be imagined
than described. The Holland florists, wish-
ing to pacify him, named one of their
bulbs "The Stormy Tulip," in memory of
his disappointment.

A BUSINESS FOR THE DEAF.

BY LEE M'CRAB.

There was once an elderly man in a
southern town who, through accident,
suddenly lost his hearing. This necessi-
tated his giving up the office position he
had held so long, where he had had mod-
erately lucrative work for many years.

Fortunately his pretty little home and
large yard, centrally located, were free
from debt, and his children were married
and gone. But there would be absolutely
no income for himself and wife. To sell
the place would be to become dependent
upon his children for shelter at least. Be-
sides, he could not endure idleness. What
could he do?

The one thing he had loved most to do
was the raising of flowers and shrubs;
so he decided that what had been merely
a pastime should now be a real business.
His success was due to two things, the
thriftiness of his plants and his delicate
scheme of advertising.

Having a start in the one, his first con-
cern was the latter. With his own hands
he pulled down the paling fence about the

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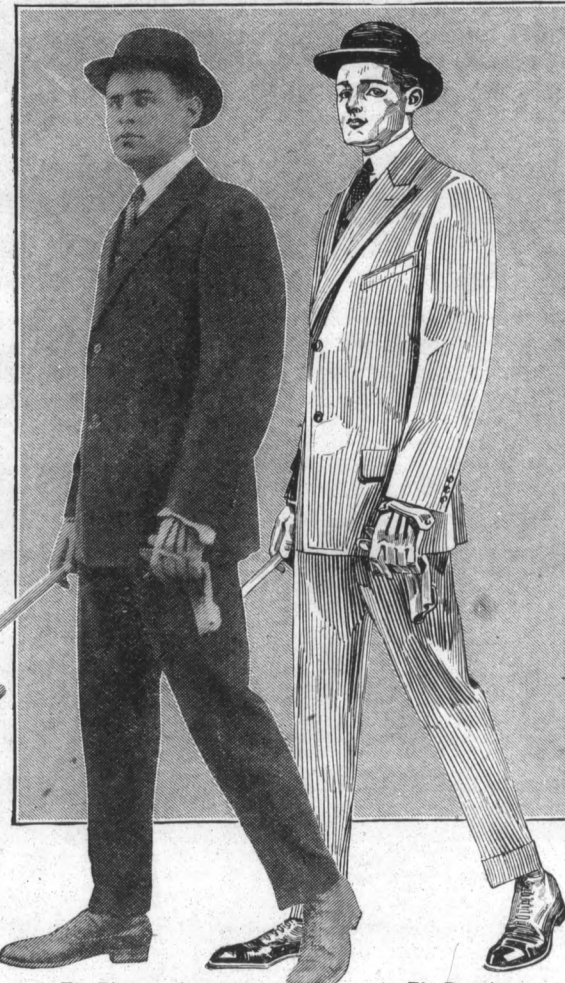
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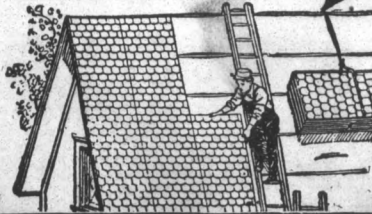
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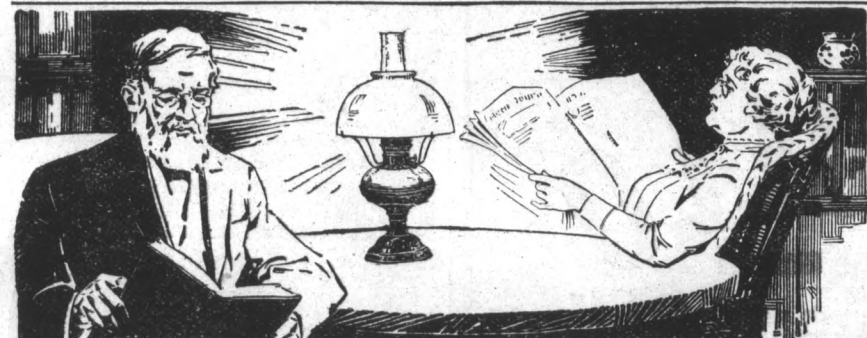
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place; then he fashioned a rustic entrance so artistic that everyone stopped to admire it. Over its central arch he put the name "Bonnie Brae;" and on one side the words "Welcome, everybody;" and on the other, "Come in and rest."

Right here, fronting the sidewalk, he made some rustic seats for tired pedestrians, and all along the winding paths that led through the grounds were more seats in shady nooks that looked most attractive on a hot day.

Many graceful shrubs and shapely trees already adorned the yard, and previous years among his plants had given him many choice varieties and a large supply of bulbs and seeds. So the walks were extended, fancy beds laid out, and gardening begun in earnest. Some of his beds were entirely of transplanted wild flowers, some of old-fashioned varieties, and a few quite rare; but his rose gardens, perpetually blooming, were his especial pride.

Of course, the passing neighbors and friends were the first to see and avail themselves of the invitation to stop and rest; but soon flower-lovers from near and far flocked in. They found themselves as free to come and go as they would have been in a public park, for unless they sought the house or chose to write notes or make signs to the silent gardener at work among the roses, there was no one to make "visitors" of them.

But they soon saw the "method in his madness." Attached to every young bush or plant of size was a white tag bearing the price in plain figures. They saw at once that they were perfectly free to come in and share the restfulness of his gardens and at the same time select at their leisure whatever they might wish to buy.

The idea took immediately. It was a chance for sympathetic friends to help an independent old man in trouble; it was an opportunity for flower-lovers to study plants and add to their own collections if they desired; a place for tired people from yardless flats to get a breath of fresh air, and a place for young people who had no nearby park to enjoy. Only a few took undue advantage of Bonnie Brae's hospitality; the many appreciative ones more than compensated him, and soon the income was ample for the two. It was a safe and happy business for a deaf man.

THE COWBIRD A HOMELESS VAGRANT.

BY V. E. LEROY.

In The Farmer of Aug. 23 the author of "Fighting with Greater Efficiency," Mr. V. E. Leroy, puts the cowbird in the class of bad birds along with the English sparrow. I would like to know why this is done. I always believed the cowbird to be a very useful bird, supposing it fed upon the flies that bother cattle and never knowing it to do harm.

Mecosta Co. G. W. D. His name is Molothrus ater, alias Cuckold, alias Cow blackbird, alias Cowbird. If you know anything about him you will feel like adding, alias Feathered Hog, Winged Sneak, Black Thug, etc., ad infinitum with all the names imaginable that indicate something worthless, low and vile. It is a common occurrence for suspicion to be placed against the man who goes under two or more names. Always there is something unusual about him. Either he is a genius or a criminal. With the cowbird this holds good, because he not only has several names but he is both a genius and a criminal; he is a genius at crime.

Throughout the bird world, the maternal instinct is supposed to be one of the most strongly developed of bird traits. But there are exceptions to this rule and the cowbird can be pointed out as one of these very few exceptions. Next to deliberate murder, there is another crime that is abhorred by most of the higher animals—humans included. It is the act of abandoning young, helpless offspring, thrusting them onto some other mother who doubtless possesses more maternal love, and trusting to bull luck that these "parents by compulsion" will give the proper care and nourishment to the wanton wail. This contemptible trick stands against the cowbird as a black mark of degeneracy and causes him to be shunned as a pest by every other species of bird except the English sparrow, and even this little "rat of the air" filthy, quarrelsome, and the acknowledged chieftain of the Holy Order of General Uselessness, has a keen enough sense of what's right or wrong to move him to give his offspring the best he can possibly get by hook or crook to give them—and that is no little bit, considering the typical "Roosevelt family" he raises.

The cowbird received his name from his habit of associating with cattle in the

COLDER WEATHER COMING.

BY LALIA MITCHELL.

Oh, it's gwine to be colder weather,
Dah's suah to be fros' I know,
Fo' de crows da' flock together,
An' a p-p-o-p-o-e-t am de crow.
But eben if he's mistaken
It suah am a-comin' Fall
Fo' de bumble-bees forsaken
De bushes out by de wall.

Oh, dah's gwine to be change ob season,
Cause de crickets tole me so,
An' de little mice, an' da' reason,
So de mice da' suahly know.
Sides dis, all de fiah-flies hover
Low down; but it's suah it's Fall
Cause I'se looked, an' I can't discover
A bumble-bee by de wall.

Oh, dah's gwine to be fros' an' snowin',
An' dah's gwine to be cold an' ice,
Cause de birds am southward goin',
To de fields ob cane and rice;
An' it's comin' close, it's comin',
An' doan' yo' doubt it at all,
Fo' de bumble-bees ain' hummin'
No mo' by de garden wall.

fields apparently for the purpose of securing flies which frequent cattle, or the other insects that are disturbed by their movements. Often these birds are seen sitting on the backs of cows; generally they are on the ground just in front of the cow, looking for insects on which they feed, together with weed seeds and berries. Considered from the viewpoint of his food alone, the cowbird does little or no harm and possibly he is of some little real value to the farmer's stock or animals, but, taken in other ways, this bird deserves extermination, and here are the reasons:

Cowbirds never pair at the mating season. They build no nests. They roam about in flocks and mate promiscuously. When the female feels the necessity of depositing an egg, she leaves the flock temporarily and goes in search of a nest that has been built and is being used by some bird of a different species. Most any nest will do, but generally she selects the nest of a bird much smaller than a cowbird. Most frequently these nests belong to such birds as the phoebe, song sparrow, towhee, warbler, indigo bunting, ovenbird or field sparrow, but eggs have been found in the nests of the red-winged blackbird and the cardinal. A list has been made of over ninety different species of birds that are victimized by the cowbird. After the egg is laid, trouble begins.

What the owner of the nest does, on returning home and discovering the alien egg, depends a great deal upon the nature of the bird imposed upon. Some there are that will promptly desert at the first glimpse of the interloper, leaving their nest and their own eggs to whatever fate they prove to have. It has been said that some birds are able to remove the foreign egg by kicking it out of the nest. Perhaps such work has been done, but it is doubtful; nevertheless, we all hope it is true. Some of the very small birds, such as the yellow warbler and the redstart, endeavor to circumvent the trouble caused by the intruder by building a second story to the nest, enclosing the egg of the cowbird between the two floors. Of course, this method makes it necessary that the birds sacrifice their own eggs also, if any happen to be in the nest when the cowbird makes its call. Nests with three cowbird's eggs thus enclosed have been found. That means that the owners of the nest had to build practically three nests. Think of the extra work done by these birds to protect themselves and their offspring from the calamity a cowbird's egg brings when it hatches, for then is when the real trouble arises.

Through some fluke in the laws of nature, the cowbird's egg has acquired the trick of hatching before those rightfully belonging to the nest and, once the cowbird has hatched, his demands for food so claim the attention of the foster parents that the latter's own eggs or young are neglected and usually perish from want of care and food. It seems strange that the old birds should feed the young cowbird, but they do. In fact, the cowbird gets most of the food brought to the nest and he grows so rapidly that soon he is as large, and, generally, before he leaves the nest, much larger than the birds feeding him. His bulk often serves to smother the young of his foster parents, and many times he actually succeeds in kicking or crowding them out of the nest altogether. It is no wonder that birds are driven to abandon their work of incubation and sacrifice the source of the greatest happiness, that of successfully rearing young, and all because this homeless vagrant, this hoggish outcast whose gabbling voice sounds as if he

were seasick, is too lazy to build a nest of his own and too degenerate to care for his own offspring.

Remember that each young cowbird that reaches maturity means the death of a whole nestful of small birds of another species, and practically every bird in whose nest the cowbird habitually lays eggs is an active insect destroyer or weed-seed eater and, therefore, just as valuable an asset to the farmer as a bird can be. Thus we see that for the life of one cowbird whose good to the farmer is small at its best, there must be paid, as a price for that cowbird, a whole nestful of other birds whose good to the farmer is, beyond all possible doubt, many times greater than that of any cowbird ever was or ever will be.

Kill the cowbird.

THE WAY OF HOPE.

(Continued from page 294).

walked proudly down the cinder path to the green station, and half the town were standing along the track to say goodbye to Bill. Old Betsey Ann was happy, despite the fact that they were leaving Perkin's Center, but she was only going for a month and then would return to keep up the home which was to be Bill's vacation place every year. One day she came back, and then even Bildad Bennet, the miller, and Morgan, the mailman, spent many of their valuable hours listening to the descriptions of the great snow-capped mountains and the Golden Gate.

On pleasant days she walks down to the little station and plods along with Morgan, and nearly every other day the postmaster replies, "Yep, there is a nice thick letter from the west." Betsey Ann goes home happy and there is enough wonderful news to keep the neighbors on her front porch for several days. They never pity her any more but think that it must be nice to have a son who is busily engaged in the office of a big transportation company that owns boats which cost more than all the houses in Perkin's Center.

Bildad stepped out on the creaky porch of his rickety mill and called to Betsey who had just come down to the mill for a new supply of chick feed. "Say, Betsey, what do you hear from Bill?" and she replied with a smile, "Well, do you know, Bildad, the boy is a big surprise to you folks, but I always knew he would turn out all right; the folks that doubted him forgot the good stuff his father was made of, and Bill just couldn't help being a man when he woke up and had the responsibility of a real man-size job."

The local whistled around the bend and Betsey exclaimed, "Goodbye, Bildad, some mail is surely coming today and I must see if old Morgan is attending to business." She disappeared down the squeaky walk toward the village; the mill throbbed and groaned at its toll. Betsey climbed over the hill with a big letter and she smiled and thought of her boy and the good news that always came from the west.

A WAY OF HIS OWN.

BY E. L. K. W.

Upon the broad field of creation,

Two mortals were never the same;

Each one has his hopes and ambitions,

And each his life purpose and aim.

Together, in closest communion,

From childhood the two may have

grown,

And, bound by the ties of true friendship,

Still each has a way of his own.

'Twere folly to draw, howe'er kindly,

A mark for another to toe,

Or point, as a leader and mentor,

The way that our neighbor should go.

Though he, with respect and politeness,

May thank us for such favors shown,

We'll find, despite all, in the sequel

He'll follow a path of his own.

Not knowing what all may environ,

Nor what one's temptations may be,

How often we censure another,

Forgetful of true charity.

We differ, while still, all are faulty;

To err every mortal is prone;

And, 'mong all his fellow transgressors,

Each one has a way of his own.

God knoweth our many temptations,

He knoweth our trials and cares,

He notes every good resolution

Amid life's allurements and snares.

Some good in each one of his creatures,

For all that is ill, may atone;

To rescue the thoughtless and erring

God may have a way of His own.

On April 15, 1910, there were 29,499,136 children under 15 years of age in the United States. Almost all these children were born in this country. The foreign-born white children numbered only 759,346 and formed only 2.6 per cent of the total number of children. The figures show that in 1910 there were 7,225,569 native white children with one or both parents foreign-born.

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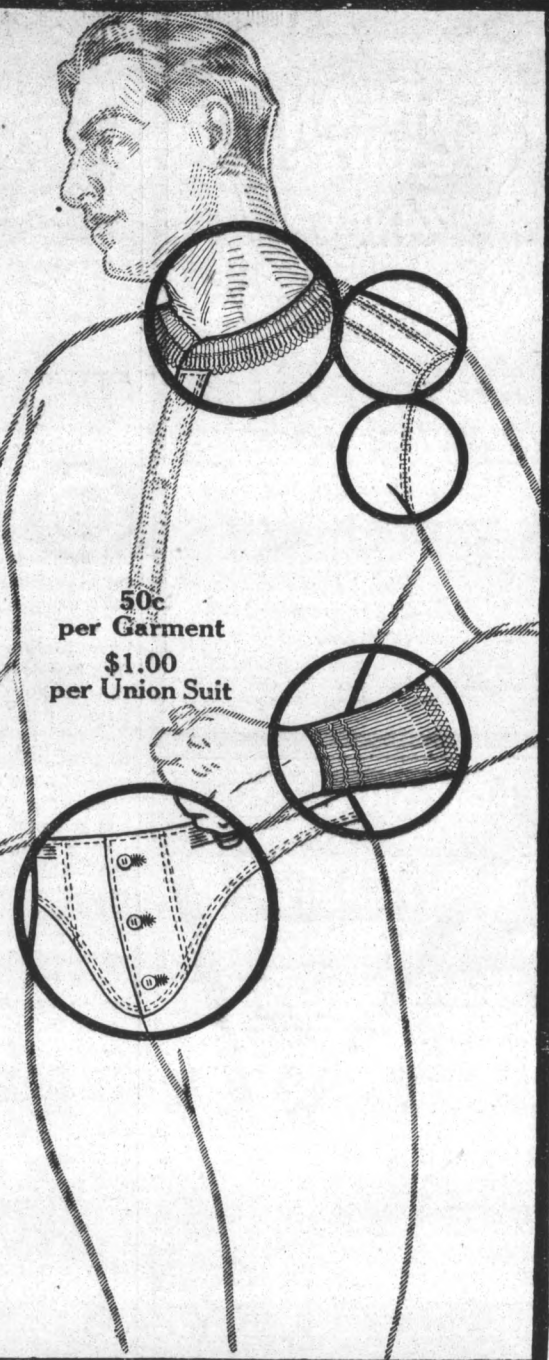
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Education vs. Health.

TWO young mothers were rocking their babies, (yes, I know it is forbidden, but they were doing it), and talking of their plans for the darlings' future.

"Our boy is going to have a college education," said one mother proudly. "Neither John or I had much learning, but our boy shall have his chance. John says Jackie is to be a graduate of the best college in the land and have \$1,000 in the bank by the time he is 21, if we have to live on brown bread and water. Our boy is to have the things he wanted and couldn't get." And with this ambitious prophecy of the little one's future she fell to kissing him rapturously and singing, "Yes, him shall."

The other mother sat quiet a few minutes. She was evidently thinking over her friend's plans.

"We hadn't planned much about Billy," she said finally slowly. "Only just to have him grow up strong and healthy. I suppose we ought to be laying by something for him, but we thought maybe if we gave him a good start physically he might make his own future. You know health seems to me so much more important than anything else. You see so many little pindling children, and the terribly bright ones in school almost always look pinched and pale and nervous. Of course, I want Billy to get an education, but if he can only have it at the expense of a strong body, I believe I'd choose the health. Besides, I don't believe he would want us to starve ourselves and him just so he could have things better than we did. If he should turn out that kind, he wouldn't be my son. He'd rather we would be comfortable and happy all together, so him would," and she, too, fell to kissing and cuddling the small mite of humanity whose future was not to contain a college education and a bank account.

Once I would have held with the first mother, but the older I grow the more I see the value of health. A sound mind in a sound body. What a blessing to the fortunate possessor. The mind may not be educated in the academic sense of the word, but good sense, sane judgment and a desire to progress are of greater value than mere book learning. And of what value is an education, gained at the expense of health? Or of what use is money if it can not buy strength and vigor?

One of the greatest financiers of the country would exchange much of his gold, it is said, for a sound stomach. Yet every mother can give her children sound stomachs if she used common sense in feeding them as they grow up.

I once thought it would be a terrible calamity if my sons could not be given a college education. Now I have changed to the belief that if I give them health they can get the college education for themselves if they want it badly enough. If they do not care for it enough to work for it, it will do them no good after they get it.

Health, that is the first and most important thing in life. Give the growing children plain, nourishing food, milk and eggs, oatmeal, wheat breakfast food or corn food, whichever best agrees with your own child, plain cuts of beef and mutton and bacon, good bread, whole wheat, graham and white in judicious mixtures, plain cookies and puddings and fruits, no rich cakes, spiced dishes or condiments. See that they are in bed at 7:00 o'clock or 7:30, in a room well ventilated and with plenty of warm covers in winter. Let there be no night parties until they are at least 16, and then only on Friday evening when they can sleep late next morning. Give them absolutely no drugs, unless ordered to do so by a competent physician. See that they have plenty of exercise in the open air, and let them take part of it in helping you with your work. Mix a judicious amount of fun in with the daily grind, and you should have healthy, strong children, unless they have some organic trouble.

It isn't a hard thing to raise healthy children if you go about it systematically. It doesn't take as much time or money as it does to rear sickly ones, and yet so many look upon it as a wonderful thing. The whole secret is to live simply and sanely, and living simply calls for less expenditure for the table and less time in getting meals, than the high living which makes for disordered stomachs and nerves. If your child falls ill, consult your physician. Do not go to the drug store and buy a bottle of patent dope, warranted to cure everything from freckles to shingles.

Give your child health. Then if he is worth a "chance" he will make one for himself.

DEBORAH.

The Preservation of Grapes and Unfermented Grape Juice

GRAPES may be preserved in many attractive and desirable forms. Grapes grow wild in many places, and the wild fruit may be preserved in the form of ketchup, jelly, and butter, with fairly good results.

If grapes of an especially fine quality are desired for any purpose, they may be secured by bagging the bunches when they are about half grown. This consists in tying paper bags over the fruit. By this means the grapes are caused to ripen earlier, and are also protected from insects, and a much better quality is produced because of the higher temperature inside the bag. The only objection to this is, the color of the grapes are not natural, but this can be remedied by removing the bags later in the season and substituting mosquito netting.

Grapes should be thoroughly washed before they are either eaten, or preserved, but the washing should be done quickly so that they may not stand in water any length of time. An excellent method for washing grapes is to hold each bunch under the faucet with the water turned on strongly.

Grape sugar is particularly easy of digestion, and therefore this fruit is a valuable article of food.

Grape Juice.

Probably no other product of the grape

is so universally popular as unfermented grape juice. It is a combination of food and drink, refreshing and delicious in every respect. The manufacture of grape juice is very easy, but its preservation without change is somewhat difficult. Yet with a little care as to details, any person can preserve grape juice successfully.

Some people make the mistake of boiling their grape juice. This prevents fermentation, but it changes the appearance unpleasantly and gives the product a scorched flavor. The remedy is to take care that the temperature does not reach the boiling point.

In making grape juice use sound, well-ripened grapes, avoiding carefully those over-ripe. The juice should be pressed out, as in making wine. It will be found that this process can be greatly facilitated by heating the grapes to about 180 degrees F. for a few minutes before pressing. The juice should then be put in bottles of convenient size, and cork stoppers put in loosely. The bottles are then set into a boiler, or other receptacle containing enough cold water to come up to the necks of the bottles. The water is heated until it reaches 180 degrees F. and held at that point 20 minutes. This heat is sufficient to keep the juice, and as it is below the boiling point, the natural flavor of the grape is not ruined by boiling. To

keep the juice without boiling is the secret of the whole process.

The bottles are then taken from the water, corked tightly, sealed with paraffin, or beeswax, and put away in a dark place to keep. Some prefer to heat the bottles on the second day again to 180 degrees F. for ten minutes to further insure the keeping of the juice.

Where a clear, colorless product is desired, the juice may be heated, before being put into the bottles, to 180 degrees F. for about five minutes to coagulate some of the solids and then strained through a fine cloth into bottles. Then proceed as stated before.

When well made, grape nectar is as fully refreshing a drink, as grape juice. To eight pounds of slightly crushed grapes, add three cups of good vinegar. Let stand four days. Heat enough to soften, then put in bag and squeeze out juice. To one pint of juice add one pound of sugar, and heat to just below the boiling point, keeping at that temperature 20 minutes. When cool bottle and seal with paraffin.

Spiced Grapes.

Spiced grapes are a splendid meat relish. Five pounds of grapes, three pounds of sugar, two teaspoons each of cinnamon, and all-spice, half teaspoon cloves. Pulp the grapes, boil the skins until tender, cook pulp and strain through a sieve, add it to the skins, put in sugar, spices, and scant pint of vinegar. Boil until thoroughly jellied, and seal.

Grape Ketchup.

Cover with vinegar two quarts of grapes that are ripe, and thoroughly mashed, and cook them until they are soft. Strain them and add a cupful of sugar, a tablespoonful of cinnamon, a teaspoonful each of cloves and allspice, and a quarter teaspoonful of cayenne pepper. Cook the mixture slowly, until it becomes thick and heavy. Place it in bottles while it is hot and seal and label them. If the vinegar is very strong dilute it or use less. If too little vinegar is used, there is danger of the ketchup's sticking to the kettle and burning.

Grape Marmalade.

Wash the grapes carefully, removing all stems and imperfect fruit, and drain them well through a colander. Separate the pulp from the skins. Put the pulp into the preserving kettle, heat it to the boiling point, cook slowly until the seeds separate from the pulp, then run through a colander. Return the pulp to the kettle with the skins, add an equal amount of sugar and cook the mixture slowly for 30 minutes.

Separate the skins from the pulp. Place the skins on the back of the stove, and let them simmer for about five minutes. Cook the pulp until it falls to pieces. Run it through a colander to remove seeds. Stew some sour apples. To three quarts of pulp add three quarts of the mashed apples, and two quarts of the stewed grape skins that have been put through a meat grinder to chop them fine; the juice and pulp of four lemons, one ounce of stick cinnamon that has been broken in bits, and tied up in cloth, and seven pounds of sugar. Let all get hot together, adding the sugar last. Stir until it dissolves. Boil half an hour, or longer if necessary. Take out the spice bag when the flavor suits. Put up in jars, or cover with paraffin and paper like jelly after it is cold. Will keep years.

Grape Conserve.

Wash two and a half pounds of grapes very carefully. Separate the skins from the pulp. Place half of the skins in a granite saucepan on the stove and allow them to simmer for about five minutes; the rest of the skins may be thrown away, for the conserve is too strong if all are used. Cook the pulp until it falls to pieces. Run through a colander. Peel two oranges and run them and the stewed skins through a meat grinder to chop them very fine. Mix together the pulp, and oranges and grape skins, add two and a half pounds of sugar. Boil the mixture five minutes longer. Add half a pound of chopped English walnuts, cook a few minutes and seal in jars at once.

Green Grape Jelly.

Gather grapes when just beginning to turn a little pinkish; mash and add

enough water to cover them. Cook until seeds leave pulp. Put in bag and let drip. To three measures of juice add two of sugar. Cook until it jells.

HOME QUERIES.

Household Editor: How often should a child six months old be fed?—B. N.
Every three hours.

Household Editor:—Should meat for soup and stews be put over in cold water or in hot?—Sally Lunn.

The meat should be put in cold water for both. In making soup, as you want to extract as much goodness as possible, bring slowly to a boil and simmer several hours. In the stew as you wish to use both meat and broth, bring to a boil quickly and cook only until the meat is tender.

Household Editor:—I have a recipe which says to "toss" bread crumbs in melted butter. How is this done?—B. D.

Put the crumbs in the butter in a frying pan and shake as you do popcorn, or stir with a fork. The object is to get every crumb coated with butter.

Household Editor:—I am a subscriber of the Michigan Farmer. Can you or some reader please give me a sure recipe for the removal of large, dark-brown liver spots from the face?—M. S.

I know of no remedy for "liver spots." There many lotions sold as "cures," but I have never seen one that "cured." Right living is the best thing. Avoid coffee and rich foods, drink plenty of water, both hot and cold, see that the general health is good and that the stomach and bowels are in good condition and you will have done about all that you can.

A Fond Mother:—"What Every Child Should Know," series of books should furnish you everything you want for children of the age you mention. If you will send your name and a stamped envelope I will tell you where these may be secured. I can not publish names of business firms in this column.

Household Editor:—Can you inform me through the Michigan Farmer of an institute in Michigan that gives nursing lessons by mail?—P. W.

Household Editor:—We saw your advice about the charcoal iron, in the Michigan Farmer. Could you tell me where I could purchase the same, as I am very much interested in them?—Mrs. H. W.

We can not print the names and addresses of business firms in this column. Send self-addressed and stamped envelope, repeating your query, and the desired address will be given.

Household Editor:—Would you please publish a recipe for canning elderberries and apples, if you have one?—Mrs. A. T. Lowell.

What reader has a recipe?

Household Editor:—In the issue of August 30, I saw an article in the Home queries Department in regard to making pies so the juice will not run out. I do not profess to be a veteran pie-maker but still I make a great many pies during the course of a year and very seldom have the juice run out of any kind of pie I make. I never use cloth around the edge or a paper funnel, or any other device. The only thing I do is to press the lower crust firmly on the bottom and sides of the pie plate so as to exclude all air cells, then use a tablespoon of flour with half the amount of sugar I intend for a pie, generally a cup full, work the sugar and flour together and have it cover the bottom and sides of the pie plate. Then place the fruit in carefully, add the remainder of the cup of sugar on top of the fruit, the spices, if used, and a little butter, but no wetting, and have the top crust with plenty of air holes in it. Wet the edge of the lower crust with cold water then press the edge of the top crust down firmly all around the edge of the pie plate. Last, but most important of all, I bake them in a slow oven. I generally allow from three-quarters of an hour to an hour for apple or berry pie. I am safe in saying I never have the juice run out of a pie unless the oven is too hot.—G. E. P.

Household Editor:—I just read "Young Cook's" inquiry, "How to keep a fruit pie from running over." I have tried putting a layer of cold cooked rice on the crust, then put in berries. The rice can not be told from the berries. This may work with other fruits.—Mrs. H. M. D.

Household Editor:—I noticed in Home Department of Michigan Farmer of Aug. 30 a lady asks if there is any way to keep fruit pie from running out. I have made and baked many pies, but have never yet found a way to keep fruit pies from running out, but I have a way of handling my fruit pies so that I lose none of the juice. It is this: When the pie begins to run out take from the oven and tip sideways into a clean cup or bowl and drain

cut all the juice that will come. Put back in the oven and finish baking. When done remove from the oven and at once, while pie is hot, pour back the juice through the opening in the top crust. You must pour juice back while pie is hot so the pie will absorb the juice. I find this method very satisfactory. I also have a way of canning sweet corn which I think very good. Perhaps some of your readers might like to try it so I will give it. Take corn that is in the milk, shave from the cob, raw, and to nine cups of corn add one cup of white sugar and half a cup of salt. Put in kettle and cook from half to three-quarters of an hour, then can and press down well into the can so that juice will come on top. There will not be much juice; this amount will fill three cans. To cook it in winter I pour boiling water over it, add soda size of a pea, bring to a boil, then drain and season as you would any canned corn. We find this very nice. Adding the soda makes it tender. We have taken the Michigan Farmer a great many years and could not do without it.—F. E. R. A.

Household Editor:—To fit the top crust of a berry pie so the juice will not run out: Make the pie, all but the top crust. On that, when it is rolled, lay a dinner plate and cut it a perfect round. Take a fork and print around the edge, put prints of the fork in crust as usual, lay it on the pie, put in the oven and have an even heat and the pie will not run over.—Mrs. A. D. F.

Household Editor:—To keep the juice in berry pies try baking your pies without the top crust until well done, then remove and put top crust in place and return to oven. Bake to a delicate brown. I find this a good way for all fruit in more ways than one. Besides not losing their filling one can know that the fruit is well cooked.—A Reader.

Household Editor:—Will someone please tell me through these columns how to make grape jelly? I have tried making jelly several times, but it is always a failure. I saw a request in your issue of August 23 for a different way to cook pie-plant other than stewed or in pies, so I am sending a recipe for "Rhubarb Birds' Nest," which is very tasty. Butter a pudding dish and cover the bottom with about two inches of sliced rhubarb, sugar to sweeten, a pinch of salt, and put little pieces of butter over it. For the crust, take one egg, one-half cup sweet milk, a piece of butter size of an egg, one teaspoon of baking powder, and flour to make a stiff batter. Pour over top and bake. To be eaten with sweet or whipped cream. Apples and other fruit may be cooked this way.—Mrs. A. P.

Grape Jelly.

Crush the fruit with a potato masher and place in a porcelain kettle. If there is not enough juice in the kettle to prevent burning, add a little water. Boil 20 minutes and then strain through a jelly bag. Boil the juice 20 minutes, skimming off all impurities, measure, and add sugar cup for cup. Boil until it jellies, when a little is tried in a cold sauce dish. If you heat the sugar in the oven while the juice is boiling, the last cooking will not take so long.

Household Editor:—If Mrs. Wm. M. will soak her clothes, that have yellowed with age, in sour milk or buttermilk for four or five days, keeping them well covered, then rinse in several waters, and wash, they will be as white as ever. Please report results.—Mrs. F. M. F.

FASHION HINTS.

Narrow skirts are still staying by us, in spite of the inconvenience of women and the ridicule of men. The fall books show some only one and seven-eighths yards wide around the bottom, although they have the draped effect. Barrel skirts, is the name given them by some. There is a ray of hope, though, in the fact that the same style book shows one or two sensible straight skirts three yards wide at the bottom.

The early coats are getting away from the Balkan styles that had such a run in the early spring. Many have plain, tailored man's coat sleeves, and are straight and trim and tight fitting, coming to just below the hips. One or two Eton jackets are shown for early wear.

I like to bear down on the fact that quieter colors are to be the rule. The combinations of purple, yellow, majenta, pink, blue and orange which some affected in the spring have run their course. Women will not look like an old-fashioned posy bed, where flowers of all colors bloomed indiscriminately. Instead, black, black and white, sober blues, browns in all shades, taupe and gray will rule.

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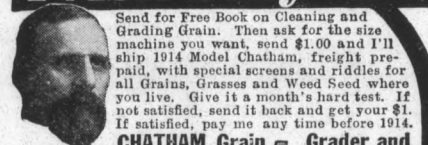
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Farm Commerce.

Some Phases of the Selling Problem.

NOWADAYS the successful farmer must possess ability as a salesman. The man who merely raises big crops does not succeed. Many high-class products are sold for palpably less than they would have commanded if offered by some other man. While every product must sell on its own merits its price is sure to be better if it is intelligently marketed.

Salesmanship is as much a part of a farmer's business equipment as are the goods he produces. Because he secures only a small percentage of the consumer's dollar does not usually imply a lethargic demand; it means, especially if the products are of a creditable character, that someone has failed as a salesman. The thought must be annoying to the man who, after making a sale in which he has made sacrifices, understands well that the same products in the hands of organized buyers and middlemen will bring 50 per cent more money. Illustration of this point is afforded by the common knowledge that many buyers of farm products sell them at enormous advances. It can not be said that the products have increased in intrinsic value as a result of short-time ownership by these shrewder and more fortunately situated men. Such products have an added value due to the cost of holding, storing and selling, but the most acceptable explanation of the premium enjoyed is expert salesmanship. While the individual farmer is at the mercy of organized buyers and transportation companies, yet as the original owner of the products he should exercise his ability as a salesman—whether individually or through a co-operative association.

Prepare to Hold Perishable Crops.

The foremost problem confronting the producer of farm products is that of being able to hold his stuff until the market conditions are favorable for selling. The growers of winter fruits, vegetables and truck crops who have storage facilities are able to hold their stuff a few weeks until the markets are cleared of the poorer grades with which they are flooded during the fall and early winter. Cold storage houses remove the necessity of selling at once—a necessity which most buyers quite naturally work to their advantage. Even a temporary storage house, with a fair insulation, will often pay for itself in a single season by affording sufficient protection against sudden cold spells, which frequently occur shortly after the products have been harvested, and annually freeze and destroy thousands of dollars worth of produce.

An Excellent Type of Storage Plant.

The most suitable type of storage house for a large fruit farm or a local co-operative association is undoubtedly one that is equipped with a gravity-brine system of cooling. This is entirely different from the machine systems commonly used in the old-style storage plants. Some of the apparatus is covered by patents, but the main principles are very simple and easy to understand. In each storage room is a system of pipes carrying brine just as in a mechanically cooled plant. The brine is merely a strong solution of calcium chlorid. The coils in the storage room are connected by a flow pipe with a return pipe with another coil, called the primary coil, placed higher up in the building in an ice tank. This tank, or bunker, is filled with a mixture of broken ice and salt. When one of these rooms is filled with fruit the heat given off by the fruit is taken up by the brine in the secondary coils placed in the room. As the brine takes up the heat it becomes lighter and passes upward into the primary coil surrounded by ice. The heavy, cold brine at the same time drops from the primary coil into the storage room, and thus there is set up, by the force of gravity, a regular circulation from one coil to the other. It is similar to a hot-water system of heating turned backward; the cold brine flows down; the warm brine flows up. This is done entirely by gravity, without the use of pumps or other machinery. In these houses a temperature of five to ten degrees above zero may be maintained. The system can be made so that the different rooms may be cooled without cooling any of the other rooms at the same time. One of these plants large enough to accommo-

date from ten to twenty thousand barrels of apples can be erected and equipped for from \$10,000 to \$16,000.

What Can a Community Invest in Storage Facilities?

How much to invest in a storage house depends upon circumstances. If the grower is situated in close proximity to a large storage house where he can secure ample facilities, it is perhaps, better to hire his fruit stored, but if his farm is a considerable distance from a suitable storage plant the question of the investment is a live one. The man who has an average annual crop of 2,000 barrels of apples can figure on about \$1,000 cost if he hires his apples stored. Figuring on that basis one can readily see that a storage house costing \$15,000 should prove a fine investment for ten farmers who raise twenty thousand barrels of apples each year, besides it would enable them to be independent of the interests that seek at certain seasons of the year to depress the value of their products. Such a plant would also afford ample accommodations for truck crops. Carefully compiled statistics and figures show that a storage house may safely constitute from 20 to 30 per cent of the investment on the fruit and truck farm. As a rule, if a co-operative association is formed it is better to limit the members to one neighborhood. There must be trust, confidence and a community of interest among the members or owners of a storage plant to make it a success.

Ability to Hold Crop Makes Grower More Independent.

With such a storage house the growers are made independent of the middlemen. They are prepared to listen, in October and November, to the offers of traveling buyers, and to accept their proposition or not, as they choose. If the prices offered are reasonable it is advisable to accept them in order to save work and the possibility of loss from decay and shrinkage. Such losses are usually unavoidable and must be calculated in figuring the profits from storage. It is good business policy for the growers to be independent of flooded markets and middlemen during the fall and early winter.

Now as regards the apple question, the growers of Michigan and New York plant the trees, cultivate and fertilize them for 15 or 20 years and study the requirements of the orchards. The trees reach a bearing age in fine condition and the crop is grown. He has made a close study of every problem connected with the orchard end of the business and worked all summer to get a good growth and color to his apples, and then what? He sells his entire crop to some buyer before they are ready to harvest. That is what the big interests of the country demand. They want the grower to produce the apples and let them, the middlemen, have the profits.

Now it seems to me that it is about time for apple growers to awaken to their opportunities and save that profit. Let these buyers and middlemen have their profits after the fruit is put on the market at a time when it demands it. For instance, the Snow apple is demanded in October and November and up to about Christmas time; then the Spitzenburg and King for the holiday trade. Then come the Greenings; and later on the Spies and Baldwins. Now what farmer wants to hold his Snow apples until February. The market isn't calling for them. Then why should the growers put their Greenings, Spies and Baldwins on the market in the fall when it does not want them? How many growers have made their sales today? The buyers knew there was going to be a short crop and have bought the fruit quicker than usual. And thousands of growers are obliged to sell to these buyers because they have no cold storage at hand.

Of course, the grower can barrel his fruit and ship it to the large cold storage plants in the city just as well as the commercial dealers. But this is not the best way. It is expensive and it injures the appearance of the fruit. There are many conditions in storing the apple crop that must be considered. Some will say that apples should be put in barrels before they are put into storage. This is not true. Certain varieties, such as the Rhode Island Greening, are inclined to

scald, and will keep much better if placed in crates so that there will be a free circulation of air. The Baldwins, Spies and the Ben Davis will keep just as well held in great bins that will hold a few hundred barrels as in any other way. In this way the barrels can be filled just before shipping time and will reach the market in ideal condition. It furnishes work for the men at a time when the other farm work does not demand attention and puts the fruit on the market at the time it demands it.

How the Middlemen Do It.

Let us see how the commercial buyers handle our apples. A wealthy firm from Boston, New York or Chicago sends out buyers all over the country to look up apples. These men have other agents who hire men to pick and pack the apples. They ship them to storage houses in the large cities and hold them until the market is favorable for selling. Can these men advance money, hire expensive help, pay storage charges and handle this fruit cheaper than the growers can? When they want to sell a few hundred barrels they plug the barrel a little if it shakes and put them on the market. Now the farmer can pack and grade his apples a few days before it is time to ship to some large market. There are no rotten apples squeezed together to make the barrel tight. And how long before—if his apples are properly marked—is it that he has a reputation upon his apples in the market, whatever mark he uses?

A Too Common Practice.

Now what are the conditions throughout the apple growing regions of Michigan and New York today? Last season I had charge of the packing of more than 10,000 barrels of fine New York apples. One of the large commercial growers had sold his crop on the trees for \$15,000 just as it was; he had nothing to do but haul the apples to the station. We got orders to put every apple in the barrels; we put in windfalls, wormy apples and all, and faced the barrels with good apples on both ends. Did that sale help the reputation of New York apples? Customers know that they came from Niagara county, New York, and they sold for a higher price on that account. Other men sold their crop in the same way and the buyers put everything they could scrape together in the barrels because they wanted the number of barrels regardless of the quality.

Now right here is the point for the farmers of Michigan and New York. Above all things protect your name and interests. Don't ruin your business by allowing commercial buyers to pick and pack your fruit and put it on the market in a way that will disgrace your reputation as producers of choice fruit. It has taken you years to bring your orchards into bearing and it is your business to protect yourselves against such practices. Don't let your beautiful Greenings, Kings, Baldwins and Spies reach the market looking like a mess of slush for some buyer to get rich. The owner of this particular orchard said, "I made a pretty good sale, they are having to dig around to make out the estimated number of barrels." Now look and see what that man is doing. He is killing the reputation of his farm and community by allowing such stuff to be sold with his name attached. It is just such men who are ruining the apple business in sections where the finest fruit is being grown.

New York. W. MILTON KELLY.

WORLD'S GRAIN PRODUCTION.

A cablegram dated September 19, 1913, from the International Institute of Agriculture, Rome, Italy, has been received by the United States Department of Agriculture, containing the following information:

Wheat.

Preliminary estimate of production: Bulgaria 60,627,000 bushels; France 322,734,000 bushels; Hungary 166,677,000 bushels; Italy 209,440,000 bushels; Roumania 88,185,000 bushels; Canada 211,004,000 bushels. In the following named countries the total production is estimated at 3,330,000,000 bushels, which is 4.1 per cent more than was produced in the same countries last year: Belgium, Bulgaria, Denmark, Spain, Italy, Luxembourg, Russia, Switzerland, United States, Canada, India, Japan, Algeria, Tunis, Prussia, England, Wales, France, Roumania, Hungary, (excluding Croatia and Slavonia).

Rye.

Preliminary estimate of production: Prussia 367,644,000 bushels; France 53,364,000 bushels; Hungary 56,006,000 bushels. The total production in the following named countries is estimated at 1,496,000,-

000 bushels, which is 6.7 per cent less than was produced in the same countries last year: Belgium, Bulgaria, Denmark, Spain, Italy, Luxemburg, Russia, Switzerland, United States, Canada, Prussia, France, Roumania, Hungary (excluding Croatia and Slavonia).

Barley.

The total production in the wheat countries named above, minus India and France, is estimated at 1,225,000,000 bushels, which is 1.2 per cent more than was produced in the same countries last year.

Oats.

Preliminary estimate of production: Prussia 429,499,000 bushels; Roumania 34,447,000 bushels; Canada 420,049,000 bushels. The total production in the wheat countries named above, minus Indian and France, is estimated at 3,426,000,000 bushels, which is 5.9 per cent less than was produced in the same countries last year.

Corn.

Preliminary estimate of production: Hungary (excluding Croatia and Slavonia) 184,758,000 bushels; Italy 98,422,000 bushels. The total production in the following named countries is estimated at 2,766,000,000 bushels, which is 22.4 per cent less than was produced in the same countries last year: Bulgaria, Spain, Italy, European Russia, Switzerland, United States, Japan, Tunis, Hungary (excluding Croatia and Slavonia).

Rice.

The production in Japan for 1913 is estimated to be 16,662,000,000 pounds, which is an increase of 5.1 per cent over the crop of last year.

CROP AND MARKET NOTES.

Newaygo Co., Sept. 20.—It is cold and rainy here with a few flakes of snow. Bean pulling, silo filling and peach picking are the order of the day. Our dry spell was broken the 15th with a big rain. Late potatoes will be benefited by the rains as they are still nice and green and will grow until killed by a heavy freeze. Fall seeding and pastures look bad on account of dry weather. Threshing is mostly all done. Winter apples are dropping quite badly; butter 30c; eggs 25c; peaches are selling from 75c@1 and are mostly all picked.

Pennsylvania.

Erie Co., Sept. 26.—Weather very dry for several weeks, with only light showers. Crops all good. Frost killed corn and potatoes; grapes only half a crop. No apples but plenty of pears and peaches. Cattle are very high; fresh milch cows very scarce.

Crawford Co., Sept. 22.—Long continued drought broken by good rains and a killing frost on the 10th. Corn all caught in the valleys as there was a killing frost the 10th of June and corn not ripe. Potatoes one-third of a crop and small; oats good, 40 to 70 bu. per acre; wheat is a fair crop. Buckwheat half a crop, largely frost-bitten. Dairying good here, butter selling at 32c; milk \$1.60 on stand. Dealers offering \$1.45 per cwt. for buckwheat; 75c for potatoes; \$1 for wheat; oats 45c. With plenty of old hay left from last year price is 60c per cwt. Fruit a total failure. Wheat about all sown and usual acreage.

New Jersey.

Morris Co., Sept. 22.—The past season has been very dry. Last night we had the first good rain this season. Wheat is a fair crop; oats poor. Corn is about two-thirds of a crop. About one-half of the fall seeding is done as some of the farmers have been waiting for rain, so as to be able to plow. The rain last night will help. Corn cutting is about half finished. Threshing buckwheat is progressing rapidly and is a fair crop. Wheat 90c; rye 56c; buckwheat 80c; hay \$15 per ton; rye straw \$14; butter 33c; eggs 34c.

Monmouth Co., Sept. 22.—Potatoes are nearly all gathered with about 75 per cent of average crop. Some places they were a complete failure. Corn is good, with but little damage done by hail; about one-third of the crop is cut at this writing. Some winter grain sown. Threshing about done; wheat and rye yielded poor; oats fair. Peaches are about done and a very short crop; cranberries are reported plentiful. Apples scarce and high. Hogs are scarce and command a good price. Very few sheep raised in this section. Have had one light frost but no damage done. Late pasture in fair condition, having had a reasonable amount of rain during the last three or four weeks.

Ohio.

Knox Co., Sept. 22.—This will be a busy week for farmers. Not much seeding done yet, but much will be done the present week if the weather is favorable. Most farmers use commercial fertilizer, and plant about one and a half bushels per acre. A good deal of corn to cut yet, which was blown down badly early in August, making hand-cutting necessary. A good many one-horse cutters introduced last year, which cannot be used much this season. A good prospect for clover seed. All kinds of live stock high in price. Apples and peaches very scarce. This is an oil and gas region, many farmers getting about \$1 per acre annual rental. Potatoes scarce and sell for 80@90c in field.

Clermont Co., Sept. 25.—Plenty of rain last week. Drought affected nearly all crops this summer. Wheat fair, about 20 bu. per acre. Oats fair; potatoes half a crop. Most of corn cut. Many new

silos built. Corn crop short. Most of the wheat is sowed. Rain helped pastures which were nearly dried up. Very little fruit. Hogs about as usual, getting them ready for market. Heavy frost Monday night but nothing hurt. Just a little ice Tuesday morning. Eggs 26c; butter 28c.

Holmes Co., Sept. 22.—Cooler with a good rain. Farmers cutting corn which is an average crop. Seeding well along; pastures good; cloverseed scarce. Many farmers selling cream; cows high. Labor is scarce. Building some improved roads. Not much land changing hands. Some farmers moving to town. Some district schools have only three and four scholars. Granges are booming and much interest is taken in them. Few public sales. Not much hunting on account of new hunter's license law, but farmers not much affected.

Wisconsin.

Polk Co., Sept. 23.—September has been a wet and cold month for the time of year. Farmers are about through haying their second crop of clover hay. Last night, Sept. 22, we had our first killing frost in this county but as all the corn is about cut and put in the silo but very little damage done. Threshing is a little later than other years, as the farmers did not have time to thresh until their silos were filled. There has been a great number of silos built this year. Almost all farmers have silos now. Corn ripened fine this year and is about the best crop farmers have here. Potatoes are good and selling at 50c a bu. Hay about \$10 per ton; eggs 23c; butter 33c; oats 36c; barley 55c.

Waukesha Co., Sept. 19.—A nice rain on the 16th for 30 hours was the first for two weeks. Farmers very busy plowing and cutting corn. Much corn is being put in the silo. Most of the rest in shock. It is a very fine crop of first-class corn. Potatoes 75c; oats 34@36c; clover hay and alfalfa plentiful; timothy hay \$11 a ton; eggs 26c; butter 36c retail. Farmers getting \$1.04 per cwt. for four per cent milk at creameries.

Indiana.

Allen Co.—The heavy frost of yesterday killed practically everything that could be affected. This frost was the first we experienced this year in this vicinity. The crop conditions are otherwise practically unchanged. All kinds of good products will sell high this winter. Meats will soar and eggs are constantly going up. Onions are considered very short and are now retailing at not less than 2c per lb. Produce prices are: Home-grown potatoes, 60@80c per bu; Michigan-grown potatoes, \$1.15; onions, 75c@1 per bu; beans, \$2.25; strictly fresh eggs, 26c; country butter, 24c; fancy creamery, tub, 27c; old hens, 12@13c lb; broilers, 14c; apples, 40@60c; corn 70@79c per bu; wheat 90c; oats 40@45c; hay, \$10@16 per ton.

Illinois.

Marion Co., Sept. 22.—Farmers are very much crowded with work, cutting corn, picking apples, and preparing ground for wheat and grass. Stock peas almost ready to cut, which look as though there will be a good yield of both forage and grain. Apples are a good crop here this year; are selling from \$1.50@3 per barrel; most of the Ben Davis apples will be bulked in the car, for from 50c@1 per cwt, price depending on grade. Cattle are selling from 5@6c per lb; hogs \$7.50@8; eggs 23c; butter 25c; peaches 75c@1.25.

Missouri.

Vernon Co., Sept. 24.—We have just passed through one of the worst drouths this county has ever known; plenty of rain now for fall seeding. Lots of wheat being sown. Wheat averaged 15 to 40 bu. per acre; oats 10 to 25 bu; corn almost a total failure except on bottom land. Corn worth 75c; wheat \$1; oats 50c; hay \$16; butter 25c; eggs 18c; chickens 12c.

Warren Co., Sept. 23.—Corn and oats are short but wheat is a good yield, of excellent quality. Corn is now being cut. Hay is very scarce and high, and a good deal being shipped in. Not many hogs or cattle being fed. There is a good demand for Jersey cows but no supply. Recent heavy rains helped fall pastures and water supply which were both very short. A large acreage of fall wheat is being sown.

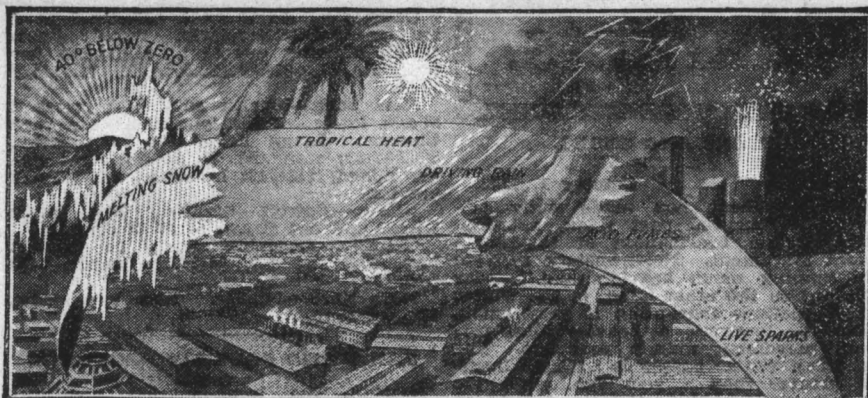
Ste. Genevieve Co., Sept. 22.—Half crop of corn; oats almost total failure; wheat a good yield; hay crop cut short by the drought. Truck crops and gardens yielded low. Pastures dry during summer, but a good late fall pasture. Corn about all cut. Not much wheat ground broken yet, but rains of Sept. 10 will help late plowing. Lots of cowpeas lay ruined in the fields. Stock high, except horses, which are in no demand, and good fancy stuff called for. Feed high and scarce.

Polk Co., Sept. 24.—An abundance of rain since Sept. 8, has revived pastures and put new life into the stock and grain business. Wheat is selling at 80c and corn about the same; timothy hay \$16; straw, baled, \$8 per ton; hogs 8c; milch cows good price but horses draggy. Hens selling for 9c; eggs 15c; butter 20c. Progress is being made toward seeding an average crop of wheat; 75 per cent of total corn crop was put in shock or silo, assuring abundance of rough feed. Condition of corn 30 per cent.

Harrison Co., Sept. 23.—We have been having good showers since Sept. 15, which has started the grass that was badly burned during August. Wheat sowing is now in progress about the usual amount being sown. Many silos going up and are now being filled; corn not more than half a crop. Wheat about 12 bu. per acre; oats poor, 20 bu. per acre; hay a fair crop. Wool not all sold yet, buyers are having some trouble getting farmers to take the 23c which they offer per pound. Potatoes not half a crop.

Kansas.

Franklin Co., Sept. 22.—Summer hot and dry; light rain last week, with much (Continued on page 302).



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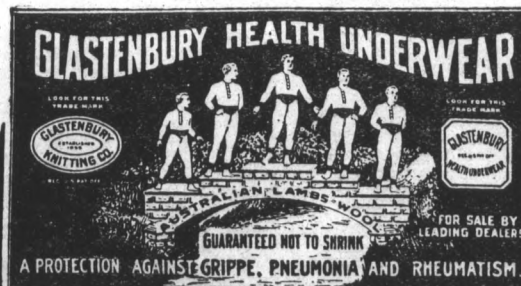
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Markets.

GRAINS AND SEEDS.

October 1, 1913.

Wheat.—Wheat has made daily advances during the past week, notwithstanding the bearishness of the home wheat movement. Northwestern receipts are running much heavier than a year ago, but on the other hand, in the winter wheat sections marketing is very small. There is, however, a heavier total primary movement than a year ago. The Canadian visible supply is 3,265,000 bushels greater than a year ago, while the world's visible supply shows an increase of 28,743,000 bushels, as compared with this date last year. The foreign market has been holding steady, little attention being paid in Liverpool to the fluctuations over here. Russia is a liberal seller of wheat at the present time. Trading in local markets is quiet and there is nothing to indicate that Michigan farmers are ready to sell their crop. One year ago No. 2 red wheat sold on this market at \$1.06½ per bu. Quotations for the past week are as follows:

	No. 2	No. 1	Dec.	May.
Thursday	91½	91½	94	99
Friday	91½	91½	94½	99½
Saturday	92	92	94½	99½
Monday	93½	93½	95½	1.00½
Tuesday	94	94	96	1.00½
Wednesday	94	94	95½	1.00

Chicago, (Sept. 30).—No. 2 red wheat, 93½@94½c; No. 3 red, 90½@92c; Dec., 87½c; May, 92½c per bu.

Corn.—The chief feature in the corn market during the past week was the general selling of the September option. Most of the transactions, however, were in small lots. There was a reaction of about 1c in the market during the week. One year ago No. 3 corn sold on this market at 69½c per bu. Quotations for the week are as follows:

	No. 2	No. 3
	Yellow.	White.
Thursday	75½	75
Friday	75	74
Saturday	74½	74
Monday	75	74½
Tuesday	74½	74
Wednesday	73	74

Chicago, (Sept. 30).—No. 3 corn, 71¼@72¼c; No. 3 yellow, 72¼@73c; Dec., 70½c; May, 72c per bu.

Oats.—Oats are in good demand and the market remains firm at an advance of 1c over the same day last week. There is, however, a rather heavy undertone to the market due to the competition of the Canadian Northwest. One year ago standard oats sold on this market at 35½c per bu. Quotations for the week are as follows:

	Standard.	White.
Thursday	44	43½
Friday	44½	43½
Saturday	44½	44
Monday	44½	44
Tuesday	45	44½
Wednesday	44½	44

Chicago, (Sept. 30).—No. 3 white oats, 41½@41¾c; standard, 42½@42¾c; Dec., 42½c; May, 45½c per bu.

Beans.—This market is inactive although there has been a nominal advance in quotations for prompt and immediate shipments of 10c per bushel since last week. Weather conditions have favored getting the bulk of the new crop housed in good condition, so that the quality of this year's crop is certain to be better than that of last season. Cash beans for immediate and prompt shipment are now quoted at \$1.95; Oct., \$1.90 per bu.

Chicago, (Sept. 30).—Market is steady. Offerings small; stock of beans low. Quotations unchanged; pea beans, hand-picked, choice, \$2.10; red kidneys, \$2.25@2.30; white kidneys, \$3 per bu.

Rye.—The rye market is dull with no change in values; cash No. 2 quoted at 68c, which is last week's figures. At Chicago cash No. 2 is quoted at 65½@66c, which is 1c below last week's quotations.

Barley.—This grain is quiet with limited receipts during the week. At Chicago quotations range from 58½@59c per bu., which is about last week's range. At Milwaukee malting grades are selling at 67½@68c per bu., which is last week's quotations.

Cloverseed.—There has been a reaction in the seed market during the past week, prime October now being quoted at \$7.50; Dec., \$7.50 per bu. Sales of March were made at \$7.65, with October also at \$10 per bu. At Toledo prime cash sold at \$7.50; October and December at \$7.45; March, \$7.55; October also, \$10.35 per bushel.

Alfalfa Seed.—Prime spot selling at \$7.50 per bushel.

Timothy Seed.—This market is unchanged, with prime spot selling at \$2.50 per bushel, which is last week's figure. At Toledo prime cash, old seed, sold at \$2.40; new September and October at \$2.42½; March, \$2.55 per bushel.

FLOUR AND FEEDS.

Flour.—Jobbing lots in ¼ paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.40; second, \$5.10; straight, \$4.90; spring patent, \$5.10; rye flour, \$4.60 per bbl.

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

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

No. 2, \$14@14.50; light mixed, \$15@15.50; No. 1 mixed, \$13.50@14.

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

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

Straw.—Detroit.—Steady. Rye, \$8@9; wheat and oat straw, \$7@7.50 per ton. Chicago.—Quotable steady as follows: Rye, \$7@7.50; oat, \$6@6.50; wheat, \$6@6.50.

New York.—Higher. New rye straw, \$18 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—The local market continues firm, despite signs of weakness at other points. Offerings of dairies and packing stock are not to the demand and a 1c advance is recorded. Quotations: Extra creamery, 31c per lb; firsts, 30c; dairy, 23c; packing stock, 21c per lb.

Elgin.—Market firm at 31c per lb.

Chicago.—The slight price reductions noted this week affect the better qualities of butter which are comparatively easy. The under grades are barely steady and still a little slow, but stocks gradually being reduced. Quotations: Extra creamery, 30½@31c; extra firsts, 29½@29¾c; firsts, 25½@26c; seconds, 24½@25c; ladles, 23½@24c; packing stock, 22½@23c.

New York.—An unsettled condition is apparent in this market, due to the fact that receivers are carrying over considerable stock of all grades. Packing stock is holding its own but creameries and dairies are off 1@1½c with most sales being made at inside quotations. Quotations: Creamery extras, 30½@31c; firsts, 27½@29½c; seconds, 25½@27c; state dairy, finest, 29½@30c; good to prime, 27@28½c; common to fair, 24@26½c; packing, 21@24c as to quality.

Eggs.—The general tone of the egg market is good at all points. Locally the demand is excellent for good stock and quotations show a gain of 1c over last week in the face of liberal offerings. Current offerings, candled, quoted at 25c per dozen.

Chicago.—A general advance of 1c over last week's figures is noted in this market. The better grades are very steady at the advance and, despite the fact that offerings are running ahead of this period a year ago, there is no accumulation. Refrigerators continue in good demand and firm. Quotations are: Miscellaneous lots, cases included, 17@25c, according to quality; do., cases returned, 16½@24½c; ordinary firsts, 22@23c; firsts 25@26c; refrigerator stock in good demand at 23@23½c for April firsts.

New York.—This market continues irregular with a fair interest in fancy grades of fresh gathered stock. Former quotations, however, are being shaded somewhat, but the outside figure on strictly fresh western eggs is 1c higher. Fresh gathered extras, 33@35c; extra firsts, 30@32c; firsts, 27@29c per dozen; western gathered whites, 28@30c per doz.

Poultry.—Young and old chickens are on a level as to values in the local market. All kinds and grades continue firm. Quotations: Live.—Springs, 15½@16c per lb; hens, 15½@16c; No. 2 hens, 11@12c; old roosters, 10@11c; turkeys, 17@18c; geese, 11@12c; ducks, 14@15c.

Chicago.—Chickens were unusually plentiful at this week's opening, the receipts including considerable thin, light stock. The demand was only fair and both fowls and springs had to be marked down ½@1c. Other kinds steady at former figures. Quotations on live are: Turkeys, good weight, 19c; others, 12c; fowls, general run, 14½c; spring chickens, 14c; ducks, 14c; geese, 8@13c; guinea hens, \$4@5 per dozen.

New York.—Market quiet with values practically unchanged. Fresh dressed western chickens, 17@24c; fowls, 14@19½c; turkeys, 18@20c.

Cheese.—Michigan and New York flats a good cent higher. Market firm. Wholesale lots, Michigan flats, 15@15½c; New York flats, 17@17½c; brick cream, 17@17½c; limburger, 14½@15c.

FRUITS AND VEGETABLES.

Apples.—Apples are scarce and firm with a consistent demand, particularly for the best grades. Prices higher. Good grades from \$3.50@4 per bbl. while poorer kinds, which constitute a large proportion of the bulk, are selling around \$2 per bbl. At Chicago values rule from \$2.50@4.75 per bbl. Market is firm for the high grades and the demand is ample to keep the houses clean and allow no surplus to accumulate.

Grapes.—Delawares and Niagaras are steady at 40@45c per peck basket. At Chicago the market is fair with receipts small. Prices advanced. General quotation 18@21c for 8-lb. baskets.

Peaches.—Supply has improved and values are down. Prices range from \$1.25@1.50 for choice and \$1.50@1.75 for fancy West Michigan stock. The Chicago trade is receiving ample supplies, but quality is generally inferior and fruit does not stand up well. Prices rule from 50c@1.50 per bu.

Plums.—In light supply. Quoted at \$1.50@1.75 per bu. At Chicago prices range from 75c@\$2 with supply meagre.

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

Potatoes.—Freer offerings has made trading a little easier, although price changes are small. Prices rule at 90c per bu. Receipts at Chicago showed another increase and the trade rules easier at lower values. Receipts last week, 135 cars; previous week, 130 cars, and corresponding with last year, 95 cars. The demand is good, with Michigan stock going at 70@75c per bu.

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

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

PRICES ON DETROIT EASTERN MARKET.

A large amount of farm produce is being sold at the eastern market these days. Sheds are altogether too small to accommodate the teams. Buyers packed the aisles. Peaches offered more freely with the best price around \$1.75 per bu. Tomatoes not so plentiful and majority of good, exchanging at 70@80c; potatoes lower, 80@90c; cauliflower, \$1.75@2 per bu; cabbage, 60c for both red and white; squash, 50@60c; melons, \$1@1.25; carrots, \$60; peppers, green, 70c; do., red, \$2; lettuce, 30c; turnips, 50c; apples, \$1.25@1.50; pears, \$1@1.25; celery, 25@35c per large bunch; hay, loose, higher at \$15@19 per ton.

GRAND RAPIDS.

The season for peaches will soon be over, smocks having appeared and they are the latest peach. Peaches ranged from \$1@2 on the market Tuesday morning. Apples have wide range in quality and price, choice stock ranging from 85c@1.25. Kieffers are the leading pear and are worth 75c@\$1. Grapes are bringing 75@90c per bu., and 12@14c in 8-lb. baskets. The end of the fruit season is near at hand. In vegetables the potato market is somewhat off, with local quotations at 65@75c. Tomatoes slumped Tuesday and sold at 40@60c, the lowest of the season. Eggs are firm at 26c; butter unchanged. In live poultry, fowls are quoted at 12@13c, springs at 14@15c. Dressed hogs are worth 12@12½c.

THE LIVE STOCK MARKETS.

Buffalo.

September 29, 1913.

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

Receipts of stock here today as follows: Cattle 200 cars; hogs 85 double decks; sheep and lambs 70 double decks; calves 1300 head.

With 200 cars of cattle on our market here today, and with 23,000 reported in Chicago, and with the butchers everywhere expecting the duty to come off of Canadian cattle this week, our market was in almost a demoralized condition; the heavy cattle selling from 25@50c per cwt. lower than last week, and all butcher cattle from 15@25c lower. Common grades of cattle of all kinds were extremely dull. Market was draggy and dull from start to finish, and there were several loads of weighty cattle left unsold.

We quote: Best 1350 to 1500-lb. steers, \$8.50@8.75; best 1200 to 1300-lb. steers, \$8.25@8.50; best 1100 to 1200-lb. steers, \$8@8.25; coarse and plain weighty steers, \$7.25@7.50; choice handy steers 1000 to 1100, \$8@8.35; fair to good do., \$7@7.50; grassy 800 to 1000-lb. steers, \$6.75@7.25; best cows, \$6.50@7; butcher cows, \$5.25@6; cutters, \$4.50@4.75; trimmers, \$3.75@4.25; best heifers, \$7.50@8; medium butcher heifers, \$6.25@7; stock heifers, \$5@5.25; best feeding steers, \$7@7.50; fair to good do., \$6.25@6.75; common light stockers, \$5.50@6; best butcher bulls, \$6.75@7.25; stock bulls, \$5@5.50; best bologna bulls, \$5.50@6; best milkers and springs, \$7@8; common to good do., \$5@6.

With 85 double decks of hogs here today, we had an active trade on everything, especially pigs and lights; this kind sold considerably higher, while the mixed and yorkers sold a strong dime higher than Saturday's best time. The bulk of the mixed and medium weights, also yorkers selling around \$9.50. Best selected lots, a few bunches at \$9.55; heavy at \$9@9.30 as to quality; best grade pigs \$8.50@9; as to weight; common kinds \$5@6; roughs \$8@8.50; stags \$6.50@7.50.

The sheep and lamb market was active today, with prices about 20c higher than the close of last week; most of the choice lambs selling from \$7.50@7.60; few at \$7.65; yearlings \$5.50@6. Look for about steady prices the balance of the week with moderate receipts.

We quote: Choice lambs, \$7.50@7.60; cull to fair lambs, \$6@7.40; yearlings \$5.50@6; bucks, \$3@3.25; wethers, \$5@5.25; handy ewes, \$4.50@4.75; heavy do., \$4@4.25; cull sheep, \$3@3.50; veals, choice to extra, \$11.50@12; fair to good do., \$10@11; heavy calves, \$5.50@8.

Chicago.

September 29, 1913.

Cattle. Hogs. Sheep. Received today

23,000	39,000	38,000
Same day last year	18,916	17,164
Received last week	54,932	137,412
Same week last year	57,351	86,533

Received today

Last week saw sheep and lamb shipments from here of 231,647 head, being the heaviest of the year and chiefly feeders.

The receipts of pigs today are estimated at 10,000 head, being much the largest of the season and mainly from Iowa and other cholera-stricken regions.

Hogs are active today at firm values, with heavy lots 5c or more higher. Hogs sell at an extreme range of \$8@9.

Cattle are in slow demand today, and prices are largely 10c lower, heavy steers being the worst sellers. At a late hour not much trading has been done.

Sheep and lambs are in lively request today, especially feeders, which are in large supply and show more firmness. The best range lambs bring \$7.35, an advance of 10c.

Hogs received last week averaged in weight but 214 lbs., comparing with 217 lbs. a week earlier and 232 lbs. a month ago. The average was 233 lbs. a year

ago, 215 lbs. two years ago and 264 lbs. three years ago.

Cattle have been making further high records for another week, the choicest beefs soaring to the highest prices recorded since last January, with the best class bringing \$9.25@9.50 and the greater part of the steers offered crossing the scales at \$8.25@9.25. For the commoner class of grassy light-weight steers there were buyers at \$7.15@8.25, while sales were made of medium class steers at \$8.50 and upward, with a good kind bringing \$8.90 and over, while medium to prime little yearling steers found purchasers at \$8.50@9.40. Range steers were ready sellers at \$7@8.50 for most of the offerings, with no large supply on the market and few that were on the feeder order. Native butchering cows and heifers shared in the upward movement and sold at \$5.10@8.50, a few selling up to \$8.80. Cutters sold at \$4.40@5, canners at \$3.40@4.35 and bulls at \$5@8, yearling bulls topping the market. There was a strong desire upon the part of farmers in several states to buy stockers and feeders, and a fair business was transacted, although advancing prices and competition for the fleshier class of feeder steers from the packers were obstacles that restricted the movement of cattle to feeding districts. Stock steers sold at \$5.25@7.65, while feeders sold usually at \$6.50@8.15 for lots carrying considerable weight. Calves, because of light offerings, sold away up, buyers paying from \$5@7 per 100 lbs. for the heavier weights up to \$10.50@12.10 for the choicer class of light vealers. Milksters and springers sold on a basis of \$55@110 per head for common to prime, most backward springers going to killers. During the latter part of the week prices for the general run of cattle and calves declined sharply, the demand becoming poor.

Hogs have been bringing good prices for the better class of corn-fed offerings, the spread in values between choice light and medium butchering lots of the class so popular with eastern shippers and the rough, heavy packing sows being extremely wide. Increasing receipts have resulted in breaks in prices, however, notwithstanding a very good demand for choice lots to ship to eastern packing points. Usually the best shipping demand is experienced on Monday, although it is apt to be of reasonably good proportions on other days, except near the week's close. Because of the larger percentage of pigs forced on the market from regions where cholera prevails extensively, the recent average weight of the receipts shrank on a single week from 231 to 217 lbs., and pigs have been selling at extremely low prices on the whole, as compared with prices realized for desirable consignments of hogs. As compared with other years, hogs are selling well, although some stockmen are inclined to be dissatisfied on account of the high prices for corn. Demand for fresh and cured hog products continues on a large scale. At the close of the week hogs brought \$7.95@9, compared with \$7.85@9.30 when the week opened, the cheaper kind selling closer to the better class. Pigs brought \$4@8.25, throwout packing sows \$7@7.90, stags \$8.25@8.70 and boars \$1@3.25.

Lambs and sheep have continued to come to market in enormous numbers, supplies running larger in volume than ever and far ahead of a year ago. There was a generally good demand during the past week, particularly for range feeding lambs, prices for which ruled much steadier than for other offerings, but mutton lambs had to go decidedly lower in price. As usual, sheep and yearlings displayed less weakness than lambs, as there were fewer of them, the great bulk of the daily arrivals consisting of lambs. The demand for feeders is expected to continue very large all through October, or up to the close of the range shipping season. After that much higher prices for sheep and lambs may be looked for. The week closed with lambs selling on the basis of \$5@7.25, yearlings at \$4.75@5.50, wethers at \$4@4.60, ewes at \$2.50@4.25 and bucks at \$3@3.50. Feeders bought range lambs at \$6@6.55, yearlings at \$4.75@5.50 and wethers at \$4@4.50.

Horses were not in as good demand last week, on the whole, as a week earlier, and sometimes the auction was cut short because of lack of buyers. The best demand was for choice workers, with a fair call for horses to send to the lumber regions of Maine, Michigan and Wisconsin. The poorer horses continued bad sellers around \$85@100 per head, while the best extra heavy drafters were firm at \$300@350 and no large offerings. More horses sold for \$150@275 than at other figures, with not many going below \$125 or above the \$300 mark.

CROP AND MARKET NOTES.

(Continued from page 301.)

lower temperature now. Wheat and oats made a fine yield. Few fields of corn made anything but fodder; cowpeas and hay were fair. Silos are prevalent here and nearly all were filled early. Alfalfa is being tried in this county. Those who had alfalfa fields harvested four good crops. A good many have sown alfalfa this fall. Stock water is very scarce, a great many haul water, some have sold their stock on this account. Potatoes are a fair crop. Fruit is rather scarce.

Dickinson Co., Sept. 23.—A good soaking rain last week relieved the longest and severest drouth we have had in 40 years. Wheat averaged 15 to 20 bu. on upland and 20 to 40 bu. on bottom land, good quality. Corn total failure except where it was put in the silo. Pastures which have been bare all summer are beginning to green up again. Alfalfa made a good seed crop. Prairie hay and alfalfa selling at \$15@20 per ton. Ensilage at \$7.50 per ton; corn \$4c; wheat \$8c; potatoes a failure, shipped in at \$1.20 per bu. No fruit except apples; hogs scarce selling at 8c.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.

September 25, 1913.

Cattle.

Receipts, 1194. Market steady with Wednesday; 10@15c higher than last week.

We quote: Extra dry-fed steers and heifers, \$8@8.50; steers and heifers, 1000 to 1200, \$7.50@8; do 800 to 1000, \$7@7.50; grass steers and heifers that are fat, 800 to 1000, \$7@7.50; do 500 to 700, \$6.50@7.50; choice fat cows, \$6@6.50; good do \$5.50@5.80; common do \$4.50@5.50; canners, \$3.50@4.25; choice heavy bulls, \$6.50@7; fair to good bolognas, bulls, \$5.50@6.25; stock bulls, \$4.75@5.25; choice feeding steers, 800 to 1000, \$7@7.25; fair do, 800 to 1000, \$6.75@7; choice stockers, 500 to 700, \$6.50@6.85; fair do, 500 to 700, \$6.25@6.50; stock heifers, \$5@6; milkers, large young, medium age, \$6@6.50; common do \$4@5.00.

Johnson sold Newton B. Co. 9 cows and bulls av 970 at \$5.50, 1 bull weighing 1260 at \$6, 2 steers av 835 at \$7, 6 do av 550 at \$6.

Sandall sold same 7 butchers av 854 at \$6.25, 2 cows av 895 at \$4, 6 steers av 763 at \$7.10.

Haley & M. sold Newton B. Co. 2 cows av 1045 at \$6.30, 10 butchers av 694 at \$6, 2 steers av 950 at \$7, 2 cows av 950 at \$5; to Bresnahan 1 steer weighing 890 at \$6.75, 2 do av 1010 at \$8; to Sweet & Co. 5 stockers av 496 at \$6.30; to Breitenbeck 13 butchers av 719 at \$6.70, 2 cows av 875 at \$4.50; to Sullivan P. Co. 3 do av 1017 at \$6, 2 do av 1135 at \$6, 1 do weighing 1040 at \$5.50, 2 do av 1010 at \$6, 2 do av 975 at \$5.50; to Sullivan P. Co. 4 cows av 1170 at \$6.20; to Hammond, S. & Co. 1 bull weighing 1080 at \$6; to Marx 3 cows av 1103 at \$6.10, 6 butchers av 828 at \$7.10; to Mich. B. Co. 7 steers av 983 at \$8, 9 do av 786 at \$7.25, 9 butchers av 685 at \$6.25, 16 do av 560 at \$6.50, 2 steers av 925 at \$7.50, 6 cows av 951 at \$6, 2 canners av 940 at \$4, 1 bull weighing 1280 at \$6, 3 steers av 1133 at \$8, 1 cow weighing 900 at \$5, 5 do av 836 at \$6; to Newton B. Co. 20 steers av 1120 at \$8.10, 20 do av 597 at \$6.75, 2 do av 705 at \$6.75, 22 do av 830 at \$7.20, 6 do av 626 at \$6.75, 2 oxen av 1340 at \$5.50, 1 bull weighing 1320 at \$6, 5 cows av 894 at \$5.50, 1 heifer weighing 680 at \$6.75; to Puchs 4 bulls av 670 at \$5.25.

Spicer & R. sold Sweet & Co. 15 stockers av 645 at \$6.75; to Bresnahan 9 do av 620 at \$6.50, 7 do av 554 at \$5.25; to Mason B. Co. 4 butchers av 750 at \$5.50; to Cooper 1 heifer weighing 710 at \$5, 1 do weighing 730 at \$5; to Kull 6 butchers av 721 at \$5.90, 1 cow weighing 980 at \$5; to Kamman B. Co. 20 steers av 740 at \$6.75; to Sullivan P. Co. 1 cow weighing 970 at \$4.

Roe Com. Co. sold Bresnahan 4 butchers av 790 at \$6.50, 1 cow weighing 1000 at \$5.35; to Sweet & Co. 3 stockers av 490 at \$6.50; to Newton B. Co. 4 butchers av 892 at \$5.60; to Hammond, S. & Co. 1 bull weighing 1820 at \$6.60; to Breitenbeck 16 steers av 952 at \$7.55; to Sullivan P. Co. 2 bulls av 890 at \$6, 1 steer weighing 790 at \$6.50; to Mich. B. Co. 24 do av 842 at \$7.25, 11 do av 693 at \$7.25; to Sullivan P. Co. 7 butchers av 843 at \$6.25; to Dennis 3 cows av 973 at \$5.

Bishop, B. & H. sold Mason B. Co. 2 canners av 825 at \$4; to Mich. B. Co. 2 steers av 1045 at \$7.40, 3 cows av 1010 at \$6, 1 do weighing 1000 at \$5.50, 2 heifers av 715 at \$6.75, 9 butchers av 531 at \$5.50, 5 do av 750 at \$5.70, 3 do av 707 at \$6.90, 29 do av 770 at \$6, 4 do av 790 at \$6.85, 8 cows av 990 at \$5.35; to Jesse 4 stockers av 637 at \$6.50; to Parker, W. & Co. 8 cows av 825 at \$4.25; to Sullivan P. Co. 3 bulls av 750 at \$5.75, 1 steer weighing 950 at \$8.25, 9 butchers av 496 at \$5.25, 4 bulls and cows av 935 at \$6.25, 8 butchers av 610 at \$6.75, 5 steers av 940 at \$7.30, 1 do weighing 840 at \$7, 1 cow weighing 960 at \$5.50, 1 canner weighing 840 at \$4.25, 7 butchers av 786 at \$6.80, 1 cow weighing 950 at \$4.50, 2 do av 1015 at \$5.60, 1 do weighing 1150 at \$6.75; to Taggart 3 stockers av 533 at \$6.75; to Sweet & Co. 3 feeders av 773 at \$6.75; to Newton B. Co. 2 canners av 900 at \$4.25, 2 cows av 1045 at \$6.50, 2 heifers av 780 at \$7.30; to Heinrich 11 steers av 1028 at \$8, 2 do av 715 at \$7; to Goose 1 bull weighing 1360 at \$7; to Parker, W. & Co. 13 yearling steers av 75 at \$7.75; to Mason B. Co. 1 cow weighing 1090 at \$6.25, 1 do weighing 880 at \$4.50, 1 heifer weighing 870 at \$7; to Sullivan P. Co. 1 bull weighing 920 at \$6, 4 cows av 950 at \$5.75, 8 do av 900 at \$4.25; to Schuman 2 heifers av 775 at \$7.35; to Taggardone 6 feeders av 700 at \$6.80; to Smith 24 stockers av 500 at \$5.30; to Thompson Bros. 6 cows av 850 at \$4.30, 2 steers av 940 at \$7.25, 2 cows av 890 at \$5.25; to Rattkowsky 14 butchers av 750 at \$6; to Kull 2 steers av 1050 at \$7.75; to Marx 6 do av 765 at \$7.25, 2 do av 870 at \$7.25; to Thompson Bros. 3 do av 810 at \$6, 2 heifers av 770 at \$7.50, 4 do av 917 at \$7, 1 bull weighing 980 at \$6; to Sullivan P. Co. 7 butchers av 723 at \$6.80; to Goose 11 do av 463 at \$5.35; to Mason B. Co. 6 do av 635 at \$6.75, 5 cows av 916 at \$5.75; to Bresnahan 16 heifers av 570 at \$6.60; to Taggardone 9 stockers av 602 at \$6.60; to Parker, W. & Co. 2 steers av 1220 at \$8.25; to Hammond, S. & Co. 1 bull weighing 940 at \$5.50.

Veal Calves.

Receipts, 421. Market strong. Best, \$11@12.50; others, \$6@10.50.

Spicer & R. sold Mich. B. Co. 2 av 145 at \$12, 3 av 120 at \$10; to Parker, W. & Co. 5 av 125 at \$12, 5 av 130 at \$12, 2 av 150 at \$12.50, 5 av 125 at \$12; to Goose 6 av 500 at \$5.25, 2 av 140 at \$12.

Haley & M. sold Parker, W. & Co. 6 av 165 at \$12.50, 5 av 170 at \$12, 1 weighing 230 at \$11, 7 av 170 at \$12.50, 7 av 170 at \$12.50, 7 av 205 at \$11; to Applebaum 4 av 325 at \$6.50; to Newton B. Co. 4 av 175 at \$12.50, 3 av 150 at \$11.25, 1 weighing 140 at \$12.50, 1 weighing 270 at \$12.

Bishop, B. & H. sold Sullivan P. Co. 2 av 155 at \$11, 5 av 145 at \$12.50, 4 av 145 at \$12.50, 5 av 130 at \$12; to Newton B. Co. 2 av 120 at \$10, 5 av 155 at \$12.50; to Parker, W. & Co. 3 av 165 at \$12.50, 4 av 110 at \$11.50, 5 av 250 at \$8, 11 av 150 at \$12, 4 av 130 at \$12.50, 2 av 180 at \$7, 5 av 165 at \$12.50, 10 av 168 at \$12, 5 av 155 at \$11.50; to Goose 6 av 400 at \$7.50; to McGuire 15 av 150 at \$12.50, 4 av 150 at \$10.50, 1 weighing 300 at \$8, 1 weighing 170 at \$12.

Roe Com. Co. sold Newton B. Co. 2 av 190 at \$10.50.

Sheep and Lambs.

Receipts, 7922. Market opened slow; run heavy; will probably close lower. Best lambs, \$6.75@7; fair to good lambs, \$6@6.50; light to common lambs, \$5@6; fair to good sheep, \$3.50@4; culls and common, \$2.50@3.

Roe Com. Co. sold Hammond, S. & Co. 32 lambs av 70 at \$6.75, 23 do av 83 at \$7, 65 sheep av 73 at \$2.75.

Sandall sold Young 104 lambs av 63 at \$6.60.

Taggart sold Hammond, S. & Co. 34 lambs av 75 at \$6.95, 34 do av 60 at \$6.90.

Bennett & S. sold Sullivan P. Co. 13 lambs av 75 at \$7.

Spicer & R. sold Mich. B. Co. 35 lambs av 75 at \$7, 25 do av 75 at \$6.75; to Costello 32 lambs av 50 at \$5.50; to Goose 10 sheep av 106 at \$3.50; to Sullivan P. Co. 10 lambs av 73 at \$6.85; to Youngs 25 do av 75 at \$6.75.

Haley & M. sold Bray 8 sheep av 125 at \$4, 12 yearlings av 110 at \$5; to Costello 35 lambs av 55 at \$6; to Newton B. Co. 31 do av 67 at \$6.75, 54 sheep av 110 at \$3.75; to Applebaum 13 do av 110 at \$3.75; to Hammond, S. & Co. 27 lambs av 73 at \$6.75.

Bishop, B. & H. sold Nagle P. Co. 100 lambs av 71 at \$7; to Powers 15 do av 75 at \$7, 460 do av 75 at \$7; to Sutton 152 do av 65 at \$6.25, 67 do av 60 at \$6; to Sullivan P. Co. 22 do av 60 at \$5.75, 34 do av 70 at \$7, 26 do av 83 at \$6.75, 59 do av 55 at \$6, 4 sheep av 120 at \$4, 43 lambs av 73 at \$6.60; to Thompson Bros. 75 sheep av 93 at \$3, 17 do av 100 at \$3.50; to Nagle P. Co. 18 sheep av 120 at \$3.75, 65 lambs av 73 at \$7, 38 do av 75 at \$6.90, 10 sheep av 91 at \$4, 24 do av 125 at \$4, 23 do av 105 at \$3.65; to Sullivan P. Co. 22 do av 120 at \$3.50; to Hammond, S. & Co. 40 do av 85 at \$4, 30 lambs av 70 at \$6.90, 8 do av 80 at \$3.35; to Nagle P. Co. 47 lambs av 67 at \$7.

Hogs.

Receipts, 4187. Nothing sold up to noon; looks as follows:

Range of prices: Light to good butchers, \$8.80@8.90; pigs, \$7.50@8; mixed, \$8.50@8.80; heavy, \$8.25@8.75.

Bishop, B. & H. sold Hammond, S. & Co. 250 av 180 at \$8.85, 810 av 190 at \$8.80, 605 av 170 at \$8.75, 300 av 170 at \$8.70, 210 av 140 at \$8.25.

Roe Com. Co. sold Sullivan P. Co. 240 av 200 at \$8.80, 175 av 190 at \$8.90, 25 av 210 at \$8.65.

Sundry shippers sold same 460 av 200 at \$8.80.

Haley & M. sold Parker, W. & Co. 230 av 180 at \$8.85, 50 av 190 at \$8.80.

Sundry shippers sold same 375 av 185 at \$8.80.

Friday's Market.

September 26, 1913.

Cattle.

Receipts this week, 1378; last week, 1621; market steady.

We quote: Extra dry-fed steers and heifers, \$8@8.50; steers and heifers, 1000 to 1200, \$7.50@8; do 800 to 1000, \$7@7.50; grass steers and heifers that are fat, 800 to 1000, \$7@7.50; do 500 to 700, \$6.50@7.50; choice fat cows, \$6@6.50; good do \$5.50@5.80; common do \$4.50@5.50; canners, \$3.50@4.25; choice heavy bulls, \$6.50@7; fair to good bolognas, bulls, \$5.50@6.25; stock bulls, \$4.75@5.25; choice feeding steers, 800 to 1000, \$7@7.25; fair do 800 to 1000, \$6.75@7; choice stockers, 500 to 700, \$6.50@6.85; fair stockers, 500 to 700, \$6.25@6.50; stock heifers, \$5@6; milkers, large, young, medium age, \$6@6.75; common milkers, \$4@5.00.

Veal Calves.

Receipts this week, 517, last week, 500; market 50c lower. Best, \$11@12; others, \$7@10.

Sheep and Lambs.

Receipts this week, 9091; last week, 8491; market dull at Thursday's prices. Best lambs, \$6.50@6.75; fair to good do, \$6@6.25; light to common do, \$5@5.50; fair to good sheep, \$3.50@4.25; culls and common, \$2.50@3.

Hogs.

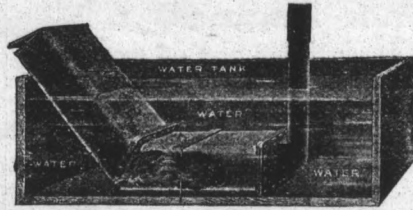
Receipts this week, 5331; last week, 4418; market 10c higher.

Range of prices: Light to good butchers, \$8.85@8.95; pigs, \$7@7.75; light yorkers, \$8.50@8.95; heavy, \$8.25@8.75.

Foreign beef is entering the United States to a greater extent than ever before, and the indications are strong that such importations are going to grow considerably in the near future and up to such a time as our American farmer-stockmen produce more beef. Late official figures from Washington show that between two million and three million pounds of fresh beef, nearly all of it from Australia and Argentina, have entered our ports within the last three months,

the indications being that such imports for the current fiscal year will exceed eight million pounds. Heretofore, such importations have not averaged above 333,000 lbs. a year. Several days ago there arrived in New York a cargo of 1,000 quarters of Argentine beef, the first big shipment ever brought over. The various big meat firms of this country took a great interest in the matter and had representatives on the docks to examine the beef. It was reported as fine in quality as any beef in this country, and the federal inspector stated that it was in first-class condition. The importer stated that the beef left the ship at about 10½c per pound, without the tariff, the latter making the price 12c a pound, or a cent less than our American beef. It was not thought that the recent importations would at first reduce the price of our beef, but that in time it would work in that direction, if imports were kept up.

Nelson Submerged Tank Heater



NOTE CONSTRUCTION—No heat going to waste. All passing under the water. Indispensable to all farmers. Pays for itself in two months with two cows. Burns straw, corn cobs, all rubbish, coal & wood. Ashes removed in a few seconds without disturbing the heater. Heats water with one-half less fuel than any other heater. Let us send you a heater on two weeks free trial, just as we have to thousands of others. This heater is now in use in thirty states, and Canada. If not sold by your dealer, do not neglect sending for catalog and prices, now while it is fresh in your mind. A postal will bring our catalog and testimonials from seventeen states free of charge.

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1 12 H. P. Ideal.

These machines are mounted on steel trucks and are complete with cooling system.

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Have been used a very little.

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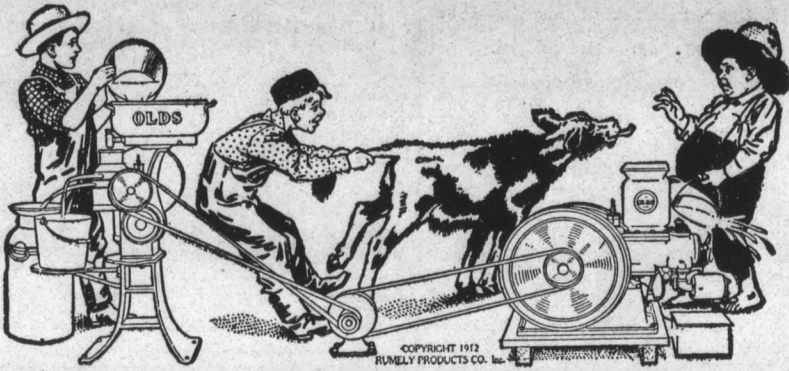
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The kind of power that brings in profits to the man who keeps cows is the kind that's steady, strong and always working. He must be able to use his power plant in all his work from husking corn to separating cream.

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Rumely makes a complete list of farm-power machinery—saw rigs, pump jacks, etc. and a full

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A strong, durable sheller of large capacity. Made in 4 sizes. Capacity 75-400 bushels an hour.

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A simple, sanitary, butter-making outfit, made in 14 styles and sizes. A regular factory outfit built to fit the farm dairy.

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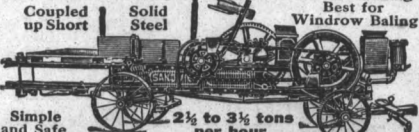
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LIVE STOCK AWARDS AT THE STATE FAIR.

Shorthorn Cattle.

Bull 3 yrs.—1st, N. W. Wagner, Fremont, Ohio; 2nd, A. E. Stevenson, Port Huron, Mich.

Bull 2 yrs.—1st, John Lessiter & Sons, Clarkston, Mich.; 2nd, Jay H. Smith, Ann Arbor, Mich.; 3rd, L. C. Kelly, Ypsilanti, Mich.

Sr. Yearling—1st, Stevenson. Jr. Yearling—1st, Wagner; 2d, Lessiter. Sr. Calf—1st, Smith; 2nd, Wagner; 3rd and 5th, Stevenson; 4th, Lessiter.

Jr. Calf—1st and 2nd, Stevenson; 3rd, Lessiter; 4th, Kelly. Cow 3 yrs.—1st and 4th, Wagner; 2nd, Smith; 3rd, Stevenson; 5th, Lessiter.

Heifer 2 yrs.—1st and 2nd, Wagner; 3rd, Stevenson; 4th, Smith; 5th, Lessiter. Sr. Yearling—1st and 2nd, Stevenson; 3rd, Smith; 4th, Lessiter.

Jr. Yearling—1st and 5th, Wagner; 2nd and 3rd, Stevenson; 4th, Smith. Sr. Calf—1st, Stevenson; 2nd, Wagner; 3rd and 5th, Smith; 4th, Stevenson.

Jr. Calf—1st, Stevenson; 2nd and 3rd, Smith; 4th and 5th, Wagner. Exhibitor's Herd—1st, Wagner; 2nd, Stevenson; 3rd, Smith; 4th, Lessiter.

Breeder's Herd—1st, Stevenson; 2nd, Wagner; 3rd, Smith; 4th, Lessiter. Calf Herd—1st, Stevenson; 2nd, Smith; 3rd, Wagner; 4th, Lessiter.

Heifer Get of Sire—1st, Wagner; 2nd, Stevenson; 3rd, Smith; 4th, Lessiter. Produce of Cow—1st, Wagner; 2nd, Stevenson; 3rd, Smith; 4th, Lessiter.

Sr. Champ, Bull—Wagner. Jr. Champ, Bull—Stevenson. Sr. and Jr. Champ, Female—Wagner. Gr. Champ, Bull and Cow—Wagner.

Polled Durham Cattle.

Bull 3 yrs.—1st, W. W. Rose & Sons, Rossville, Ind.; 2nd, C. E. Simons & Son, Geneva, Ohio; 3rd, Wm. M. Jones, Fairmount, Ind.; 4th, M. M. Garrett, Coldwater, Mich.; 5th, L. C. Kelly, Ypsilanti, Mich.

Bull 2 yrs.—1st, Jones; 2nd, Kelly. Sr. Yearling—1st, Simons. Jr. Yearling—1st, Garrett; 2nd, Kelly.

Sr. Calf—1st and 2nd, Rose; 3rd, Kelly. Jr. Calf—1st and 5th, Simons; 2nd, Jones; 3rd, Garrett; 4th, Kelly. Cow 3 yrs.—1st, Rose; 2nd, Jones; 3rd, Simons; 4th and 5th, Garrett.

Heifer 2 yrs.—1st and 4th, Rose; 2nd, Jones; 3rd, Simons; 5th, Garrett. Sr. Yearling—1st, Rose; 2nd, Garrett; 3rd and 4th, Kelly; 5th, Simons.

Jr. Yearling—1st and 2nd, Rose; 3rd and 5th, Jones; 4th, Simons. Sr. Calf—1st and 2nd, Rose; 3rd, Garrett; 4th, Simons; 5th, Kelly.

Jr. Calf—1st, Rose; 2nd and 5th, Garrett; 3rd, Jones; 4th, Simons. Exhibitor's Herd—1st, Rose; 2nd, Simons; 3rd, Jones; 4th, Garrett; 5th, Kelly.

Breeder's Herd—1st, Rose; 2nd, Simons; 3rd, Kelly. Calf Herd—1st, Rose; 2nd, Simons; 3rd, Garrett; 4th, Kelly.

Hereford Cattle.

Bull 3 yrs.—1st, Calhoun Bros., Bronson, Mich.; 2nd, W. T. McCray, Kentland, Ind.

Bull 2 yrs.—1st, J. H. & J. W. Van Natta, Lafayette, Ind. Sr. Yearling—1st, Van Natta.

Jr. Yearling—1st, McCray. Sr. Calf—1st, Van Natta; 2nd, McCray; 3rd, Calhoun. Jr. Calf—1st, McCray.

Cow 3 yrs.—1st, Van Natta; 2nd, McCray; 3rd, Calhoun. Cow 2 yrs.—1st, McCray; 2nd, Van Natta; 3rd, Calhoun.

Heifer Sr. Yearling—1st, McCray; 2nd and 3rd, Van Natta; 4th, Calhoun. Jr. Yearling—1st, Van Natta; 2nd, McCray; 3rd and 4th, Calhoun.

Sr. Calf—1st, McCray; 2nd, Van Natta; 3rd and 4th, Calhoun. Jr. Calf—1st, Van Natta; 2nd, McCray; 3rd, Calhoun.

Exhibitor's Herd—1st, Van Natta; 2nd, McCray; 3rd, Calhoun. Breeder's Herd—1st, Van Natta; 2nd, McCray; 3rd, Calhoun.

Calf Herd—1st, Van Natta; 2nd, McCray; 3rd, Calhoun. Get of Sire—1st, McCray; 2nd, Van Natta; 3rd, Calhoun.

Produce of Cow—1st, McCray; 2nd, Van Natta; 3rd, Calhoun. Sr. & Jr. Champ, Bull & Sr. Champ, Cow—Van Natta.

Jr. Champ, Cow—McCray; Gd. Champ, Bull and Cow—Van Natta.

Aberdeen-Angus Cattle.

Bull 3 yrs.—1st, Otto V. Battles, Mageweta, Iowa; 2nd, Woodcote Stock Farm, Ionia, Mich.; 3rd, Clark Bros., Grand Blanc, Mich.

Bull 2 yrs.—1st, Woodcote; 2nd, Battles. Sr. Yearling—1st, Battles.

Jr. Yearling—1st, Battles; 2nd, Woodcote. Sr. Calf—1st, Battles.

Jr. Calf—1st, Woodcote; 2nd, Battles; 3rd, Clark. Cow 3 yrs.—1st, Battles; 2nd, Woodcote; 3rd and 5th, Clark; 4th, Woodcote.

Cow 2 yrs.—1st, Battles; 2nd, Woodcote; 3rd, Clark. Heifer Sr. Yearling—1st, Battles, 2nd, Clark; 3rd, Woodcote.

Jr. Yearling—1st, Woodcote; 2nd, Battles; 3rd and 4th, Clark. Sr. Calf—1st, Battles; 2nd, Woodcote; 3rd, Clark.

Jr. Calf—1st, Battles; 2nd, Woodcote; 3rd, Clark. Exhibitor's Herd—1st, Battles; 2nd, Woodcote; 3rd, Clark.

Breeder's Herd—1st, Battles; 2d, Woodcote; 3rd, Clark. Calf Herd—1st, Battles; 2nd, Woodcote; 3rd, Clark.

Get of Sire—1st, Battles; 2nd, Woodcote; 3rd, Clark. Produce of Cow—1st, Battles; 2nd, Woodcote; 3rd, Clark.

Sr. Champ, Bull & Cow—Battles. Jr. Champ, Bull & Cow—Woodcote. Gd. Champ, Bull & Cow—Battles.

Galloway Cattle.

Bull 3 yrs.—1st, James Franz, Bluffton, Ohio; 2nd, S. M. Croft & Sons, Bluff City, Kansas.

Bull 2 yrs.—1st, Croft; 2nd, Franz Bros. Sr. Yearling—1st, Franz.

Jr. Yearling—1st, Croft. Sr. Calf—1st, Croft; 2nd, Franz. Jr. Calf—1st and 2nd, Croft; 3rd, Franz Bros.

Cow 3 yrs.—1st, Croft; 2nd, Franz; 3rd, Franz Bros. Cow 2 yrs.—1st, Croft; 2nd, Franz, 3rd, Franz Bros.

Heifer Sr. Yearling—1st, Croft; 2nd, Franz. Jr. Yearling—1st and 2nd, Croft; 3rd, Franz.

Sr. Calf—1st, Franz; 2nd, Croft; 3rd, Franz Bros. Jr. Calf—1st, Croft; 2nd, Franz; 3rd, Franz Bros.

Exhibitor's Herd—1st, Croft; 2d, Franz; 3rd, Franz Bros. Breeder's Herd—1st, Croft; 2nd, Franz.

Calf Herd—1st, Croft; 2nd, Franz; 3rd, Franz Bros. Get of Sire—1st, Croft; 2nd, Franz; 3rd, Franz Bros.

Produce of Cow—1st, Franz; 2d, Croft; 3rd, Franz Bros. Sr. Champ, Bull—Franz.

Jr. Champ, Bull—Croft. Sr. Champ, Cow—Croft. Jr. Champ, Cow—Croft.

Gd. Champ, Bull—Franz. Gd. Champ, Cow—Croft.

Fat Steers.

Steer 6 mo. and ud. 1 yr.—1st, J. H. & J. W. Van Natta; 2nd, Lessiter.

Herd of Three—1st, Van Natta; 2nd, Lessiter. Gr. Champ, Steer—Van Natta.

Two yrs and un. 3—1st, Van Natta; 2d, Lessiter. One yr. and un. 2—1st, Van Natta; 2d, Stevenson; 3rd, Lessiter.

Red Polled Cattle.

Bull 3 yrs.—George Ineichen & Sons, Geneva, Ind.; 2nd, Frank Hartline & Sons, Strassburg O.

Bull 2 yrs.—1st, Ineichen; 2nd, J. M. Chase & Son, Ionia, Mich.; 3rd, Calhoun Bros., Bronson, Mich.

Sr. Yearling—1st, Calhoun. Jr. Yearling—1st and 3rd, Chase; 2nd, Calhoun.

Sr. Calf—1st, Herbison Bros., Birmingham, Mich.; 2nd, Calhoun; 3rd, Ineichen. Jr. Calf—1st and 4th—Ineichen; 2nd, Herbison; 3rd, Hartline.

Cow 3 yrs.—1st and 2nd, Ineichen, 3rd and 5th, Hartline; 4th, Calhoun. Cow 2 yrs.—1st and 5th, Hartline; 2nd and 3rd, Ineichen; 4th, Chase.

Heifer, Sr. Yearling—1st, Hartline; 2d, Ineichen; 3rd, Calhoun; 4th, Chase. Jr. Yearling—1st and 2nd, Ineichen; 3rd, Hartline; 4th, Calhoun; 5th, Chase.

Sr. Calf—1st and 2nd, Herbison; 3rd, Ineichen; 4th, Calhoun; 5th, Hartline. Jr. Calf—1st, Calhoun; 2nd, Ineichen; 3rd, Hartline; 4th and 5th, Chase.

Exhibitor's Herd—1st, Ineichen; 2nd, Hartline; 3rd, Calhoun; 4th, Chase. Breeder's Herd—1st, Ineichen; 2nd, Hartline; 3rd, Calhoun; 4th, Chase.

Calf Herd—1st, Calhoun; 2nd, Herbison; 3rd, Ineichen; 4th, Hartline; 5th, Chase. Get of Sire—1st, Ineichen; 2d, Calhoun; 3rd, Hartline; 4th, Herbison; 5th, Chase.

Produce of Cow—1st, Ineichen; 2nd, Hartline; 3rd, Herbison; 4th, Calhoun; 5th, Chase. Sr. Champ, Bull—Ineichen.

Jr. Champ, Bull—Herbison. Sr. Champ, Cow—Ineichen. Jr. Champ, Cow—Hartline.

Gd. Champ, Bull—Ineichen. Gd. Champ, Cow—Ineichen.

Jersey Cattle.

Bull 3 yrs.—1st, Edwin S. George, Pontiac, Mich.; 2nd, A. Deshano, Auburn, Mich.; 3rd, Nells Falyan, Geneva, Ill.

Bull 2 yrs.—1st, H. B. Wattles, Troy, Mich.; 2nd, Deshano. Yearling—1st, Wattles; 2nd, George.

Sr. Calf—1st, Wattles; 2nd and 3rd, George; 4th and 5th, Deshano. Bull Jr. Calf—1st, George; 2nd, Wattles; 3rd and 4th, Deshano.

Cow 4 yrs.—1st, George; 2nd, Deshano; 3rd and 5th, Wattles; 4th, Deshano. Cow 3 yrs.—1st and 3rd, Wattles; 2nd, George.

Cow 2 yrs.—1st and 3rd, Wattles; 2nd, Deshano; 4th, George. Heifer 1 yr.—1st and 2nd—Wattles; 3d, George; 4th and 5th, Falyan.

Sr. Calf—1st, George; 2nd and 3rd, Wattles; 4th, Deshano. Jr. Calf—1st, George; 2nd, Wattles; 3d, Falyan; 4th, Wattles; 5th, Deshano.

Exhibitor's Herd—1st, George; 2nd, Wattles; 3rd, Deshano. Breeder's Herd—1st, Wattles; 2nd, George.

Calf Herd—1st, George; 2nd, Wattles; 3rd, Deshano. Get of Sire—1st, Deshano; 2d, Wattles.

Produce of Cow—1st, Wattles; 2nd, George; 3rd, Falyan; 4th, Deshano. Sr. Champ, Bull—George.

Jr. Champ, Bull—Wattles. Sr. Champ, Cow—George. Jr. Champ, Cow—Wattles.

Gd. Champ, Bull and Cow—Wattles.

Guernsey Cattle.

Bull 3 yrs.—1st, A. W. & J. E. Fox, Waukesha, Wis.

Bull 2 yrs.—1st and 3rd, Fox; 2nd, E. H. Raupp, Detroit, Mich.

Bull 1 yr.—1st, Fox. Sr. Calf—1st, Fox. Jr. Calf—1st, Fox.

Cow 4 yrs.—1st, Fox. Heifer 2 yrs.—1st, Fox. Heifer 1 yr.—1st and 2nd, Fox; 3rd, Falyan.

Sr. Calf—1st, Fox. Jr. Calf—1st, Fox. Exhibitor's Herd—1st, Fox.

Breeder's Herd—1st, Fox. Calf Herd—1st, Fox. Get of Sire—1st, Fox.

Sr. and Jr. Champ, Bull and Cow and Gd. Champ, Bull and Cow—Fox.

Holstein Friesian.

Bull 3 yrs.—1st, F. P. Knowles, Auburn, Mass.; 2nd, F. E. Eager & Sons, Howell, Mich.; 3rd, H. W. Norton & Son, Howell, Mich.
 Bull 2 yrs.—1st, Knowles; 2nd, D. M. W. Downing; 3rd, Rogers Bros.
 Bull 1 yr.—1st, Downing; 2nd, Eager.
 Sr. Calf—1st, Eager; 2nd, Downing.
 Jr. Calf—1st and 3rd, Eager; 2d, Downing.
 Cow 4 yrs.—1st, Eager; 2nd, Knowles; 3rd, Eager; 4th and 5th, Norton.
 Cow 3 yrs.—1st, Norton; 2nd, Knowles; 3rd, Eager.
 Cow 2 yrs.—1st, Downing; 2nd and 5th, Eager; 3rd, Knowles; 4th, Norton.
 Heifer 1 yr.—1st and 3rd, Downing; 2nd, Knowles; 4th, Eager; 5th, Knowles.
 Sr. Calf—1st and 2nd—Knowles; 3rd, Eager; 4th, Norton; 5th, Downing.
 Jr. Calf—1st, Downing; 2nd and 5th, Eager; 3rd, Knowles; 4th, Rogers.
 Exhibitor's Herd—1st, Downing; 2nd, Knowles; 3rd, Eager; 4th, Norton; 5th, Rogers.
 Breeder's Herd—1st, Downing; 2nd, Eager.
 Calf Herd—1st, Eager; 2nd, Downing.
 Produce of Cow—1st, Downing; 2nd, Norton; 3rd, Rogers; 4th, Eager.
 Sr. Champ. Bull—Knowles.
 Jr. Champ. Bull—Downing.
 Sr. Champ. Cow—Eager.
 Jr. Champ. Cow and Gd. Champ. Bull—Knowles.
 Gd. Champ. Cow—Eager.

Ayrshire Cattle.

Bull 3 yrs.—1st, W. P. Schank, Avon, N. Y.; 2nd, J. F. Converse & Co., Woodville, N. Y.; 3rd, Shuttleworth Bros., Leamington, Ont.
 Bull 2 yrs.—1st, Converse; 2nd, Schank.
 Bull 1 yr.—1st and 2nd, Converse; 3rd, Schank.
 Sr. Calf—1st, Converse; 2nd, Schank; 3rd, Converse.
 Jr. Calf—1st, Schank; 2nd, Converse; 3rd, Shuttleworth.
 Cow 4 yrs.—1st and 2nd, Schank; 3rd and 5th, Converse; 4th, Shuttleworth.
 Cow 3 yrs.—1st, Schank; 2nd, Converse; 3rd, Shuttleworth.
 Cow 2 yrs.—1st and 2nd, Schank; 3rd and 4th, Converse.
 Heifer 1 yr.—1st and 2nd, Converse; 3rd and 4th, Schank; 5th, Shuttleworth.
 Sr. Calf—1st and 4th, Converse; 2nd and 3rd, Schank; 5th, Shuttleworth.
 Jr. Calf—1st and 2nd, Schank; 3rd, Converse; 4th, Shuttleworth; 5th, Converse.
 Exhibitor's Herd—1st, Converse; 2nd, Schank; 3rd, Shuttleworth.
 Breeder's Herd—1st, Converse; 2nd, Schank.
 Calf Herd—1st, Schank; 2nd, Converse; 3rd, Shuttleworth.
 Get of Sire—1st, Schank; 2d, Converse; 3rd, Shuttleworth.
 Produce of Cow—1st, Schank; 2nd, Converse; 3rd, Shuttleworth.

Brown Swiss Cattle.

Bull 3 yrs.—1st, Jos. P. Allyn, Delavan, Wis.; 2nd, H. W. Ayers, Honey Creek, Wis.; 3rd, Hull Bros., Painesville, O.
 Bull 2 yrs.—1st, Ayers; 2nd, Hull; 3rd, Allyn.
 Bull 1 yr.—1st, Ayers; 2nd, Hull; 3rd, Allyn.
 Sr. Calf—1st and 4th, Allyn; 2nd and 3rd, Hull.
 Jr. Calf—1st, Hull; 2nd and 3rd, Ayers.
 Cow 3 yrs.—1st and 3rd, Allyn; 2nd and 4th, Hull; 5th, Ayers.
 Cow 2 yrs.—1st, Allyn; 2nd and 5th, Hull; 3rd and 4th, Ayers.
 Heifer 1 yr.—1st and 4th, Ayers; 2nd, and 3rd, Hull; 5th, Allyn.
 Sr. Calf—1st and 3rd, Hull; 2nd and 4th, Allyn; 5th, Ayers.
 Jr. Calf—1st and 4th, Hull; 2nd, Allyn; 3rd, Ayers.
 Exhibitor's Herd—1st, Allyn; 2nd, Hull; 3rd, Ayers.
 Breeder's Herd—1st, Ayers; 2nd, Hull; 3rd, Allyn.
 Calf Herd—1st, Hull; 2nd, Allyn; 3rd, Ayers.
 Get of Sire—1st, Allyn; 2nd, Hull; 3rd, Ayers.
 Produce of Cow—1st, Allyn; 2nd, Hull; 3rd, Ayers.
 Jr. Champ. Bull—Ayers.
 Jr. Champ. Cow—Ayers.
 Sr. Champ. Bull—Allyn.
 Sr. Champ. Cow—Allyn.
 Gd. Champ. Bull—Allyn.
 Gd. Champ. Cow—Allyn.

Dutch Belted Cattle.

All first premiums in this class were awarded to Maplebrook Farm, Adrian, Mich., the only exhibitor of the breed.

Shropshire Sheep.

Ram 2 yrs.—1st and 5th, Jess L. Andrews, West Point, Ind.; 2nd, E. E. Leland & Son, Ann Arbor, Mich.; 3rd and 4th, H. E. Powell, Ionia, Mich.
 Ram 1 yr.—1st and 3rd, Andrews; 2nd, Leland; 4th, S. L. Wing, Kinderhook, Mich.; 5th, Powell.
 Lamb—1st and 2nd—Powell; 3rd, Andrews; 4th, Wing; 5th, Leland.
 Ewe 2 yrs.—1st, Powell; 2nd, Andrews; 3rd, Wing; 4th and 5th, Leland.
 Ewe 1 yr.—1st, 2nd and 4th, Andrews; 3rd, Powell; 5th, Wing.
 Lamb—1st and 2nd, Andrews; 3rd and 4th, Leland; 5th, Wing.
 Flock—1st, Andrews; 2nd, Leland; 3rd, Wing; 4th, Powell.
 Young Flock—1st, Andrews; 2nd, Wing; 3rd, Leland; 4th, Powell.
 Lamb Flock—1st, Leland; 2nd, Wing; 3rd, Powell; 4th, Andrews.
 Get of Sire—1st, Leland; 2nd, Powell; 3rd, Shuttleworth; 4th, Andrews; 5th, Wing.

American Shropshire Special.

Ram 2 yrs.—1st and 3rd, E. E. Leland & Son, Ann Arbor, Mich.; 2nd, H. E. Powell, Ionia, Mich.
 Ram 1 yr.—1st, S. L. Wing, Kinderhook, Mich.; 2nd and 3rd, Powell.
 Lamb—1st and 2nd, Powell; 3rd and 4th, Wing.
 Ewe 1 yr.—1st, Powell; 2nd, Leland; 3rd, Wing.

THE OCTOBER SALE

125 Reg. Holstein-125 Friesian Cattle.

State Fair Grounds, Detroit, October 16, 1913

This sale will afford better opportunities than ever before offered in any sale ring in Michigan to select good individuals with the best of breeding. Among the cattle consigned are:

5 daughters of King Segis Pontiac Howell 79300.

15 daughters of Prince Segis Korndyke 38835.

13 daughters of Johan Hengerveld Lad 45104, most of them in calf to a son of King Segis.

4 granddaughters of The King of Butter Kings.

A daughter of Bessie Calamity Countess 30.79.

A sister to Calamity Wayne Pauline 30.25.

KELLY & HAEGER, Auctioneers.

Send for Catalog.

Attend the Sale.

H. W. NORTON, Jr., Sale Mgr., Howell, Michigan.

BIGELOW'S HOLSTEIN FARMS

BREEDSVILLE, MICH.

Have for sale fine bulls out of cows with high official butter and milk records.
PRICES \$100 to \$200,
 all grandsons of King Segis, King of the Pontiacs and DeKol 2nd, Butter Boy 3rd.

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

BREEDERS' DIRECTORY.

CATTLE.

Aberdeen-Angus.

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

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

For Sale Or Exchange To Avoid Close Breeding.
 The four-year-old imported Guernsey Bull, "Princess Charmant" 1485, Son of "Golden Noble 2nd" R. G. A. S. 2222 P. S. EDWARD LOWE, Grand Rapids, Mich.

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

HIGH CLASS GRADE GUERNSEYS FOR SALE

Tuberculin tested. Fresh Oct. Nov. and Dec. Bred to splendid registered Bull. Recently sold five for \$100 each. Only ten left. Will take \$850 for the lot. Must sell by Oct. 15 to make room for registered cows. If you want them and see them you will buy. Farm 3 miles north, 1/4 mile west of Watervliet, Michigan on Pere Marquette.

J. K. BLATCHFORD, (Owner) Auditorium Tower, Chicago, Illinois.
 CLINT BISHOP, Manager of Farm.

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

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

1 Holstein Bull.....\$900
 1 Holstein Bull.....\$100
 3 Holstein Bulls.....\$200
 1 Holstein Bull.....\$250
 Our sire is brother to 3 world record cows. The dams are choice with large A. K. O. records. Quality considered these are very cheap. LONG BEACH FARMS, Augusta, (Kalamazoo Co.) Michigan.

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

\$100—Buys two choice high grade Holstein heifers, 2 and 4 months old, and one registered bull, 4 months old, not akin, all nicely marked, 1/2 white. B. B. Reavey, Akron, Mich.

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

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

"Top-Notch" Holsteins.

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

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

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

Bull Ready For Service.

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

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

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

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

FOR SALE—Jersey Bull Calf

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

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

RED POLLED COWS and HEIFERS—For sale, of good milking strains.
 John Berner & Son, Grand Ledge, Mich. Route 4.

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

3 Choice Shorthorn Bulls For Sale.

7 to 9 mos. old. Bates-bred. Registered. Call or write to J. E. TANSWELL, Maple Ridge Farm, Mason, Mich.

DAIRY BRED SHORTHORNS—Bates bred bull 5-mo. old for sale. Price \$100.
 J. B. HUMMEL, Mason, Michigan.

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

SHEEP.

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

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

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

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

Reg. Rambouillet Sheep, Pure Bred Poland China HOGS and PERCHERON HORSES. 2 1/4 miles E. Morrice, on G. T. R. R. and M. U. B. J. Q. A. COOK.

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

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

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

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

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

MAPLESHADE FARM SHROPSHIRE

Reg. yearling and ram lambs, 25 ewes and 15 ewe lambs. WM. F. PULLING & SON, Parma, Michigan.

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

SHROPSHIRE YEARLING Good ones, priced to sell. W. E. MORRISH, Flushing, Michigan.

SHROPSHIRE RAMS and EWES FOR SALE. DAN BOOHER, R. 1, Marion, Michigan.

Shropshire Rams—Good ones cheap. Write before Aug. 15th. for special proposition. ROPE KON FARM, Kinderhook, Michigan.

HOGS.

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

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

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

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

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

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

O. I. C.—MARCH and APRIL PIGS, the long growthy kind, with plenty of bone. No cholera ever on or near farm. Satisfaction guaranteed. A. NEWMAN, R. 1, Marlette, Mich.

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

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

O. I. C. SWINE—Bred gilts all sold. have a No. of Spring pigs on hand. Will book orders for Sept. pigs, get my price on pairs and trios not akin.
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O. I. C.'s.—Taking Orders for Sept. Pigs, pairs and trios.
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Duroc Jersey Hogs—Have a few bred gilts, and spring boars, prize-winning strain. W. C. TAYLOR, Milan, Mich.

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

Duroc Jerseys—25 Spring Boars Ready to Ship. CAREY U. EDMONDS, Hastings, Michigan.

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

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

Duroc Jersey Pigs—10 weeks old, the big kind, \$8.00 each, pedigree furnished. F. A. LAMB & SON, Cassopolis, Mich.

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

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

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

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

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

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

Poland China Spring Boars and Sows

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

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POLAND CHINAS—Either sex, all ages. Some-pls, either sex, of finest breeding and individual quality. F. D. LONG, R. No. 8, Grand Rapids, Michigan.

P. C. MARCH and APRIL PIGS—The long bodied kind. Guaranteed to please. R. W. MILLS, Saline, Michigan.

LARGE TYPE P. C. FALL PIGS all sold. Have the spring pigs I ever raised. Eight sows farrowed 85. Come or write. Expenses paid if not satisfied. Free livery from Parma. W. E. Livingston, Parma, Mich.

(Breeders' Directory continued on page 303.)

THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's Caustic Balsam

IT HAS NO EQUAL

For the Human Body

It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Cancers, Boils, Corns and Bunions. CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

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A Perfectly Safe and Reliable Remedy for

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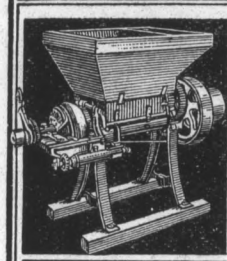
Dehorned cows give more milk; take less room; are gentle and easily handled. Dehorned steers fatten quicker and are not dangerous. Horns cost money; remove them with the new

Improved Keystone Dehorner

quickest, cleanest, strongest and most satisfactory. Clean, shear and sliding cut, no crushing; no bruising. Money back guarantee. Send for booklet.

M. T. Phillips, Box 126 Pomeroy, Pa.

SAVE 1/4 OF EVERY \$1.00



Every mouthful of unground feed your stock eats means a waste of 25 to 30%. Would you let that amount rot in the field unharvested? No! Then GRIND IT on a

STOVER OR IDEAL FEED MILL

SEND FOR CATALOG

We also build Sanborn Wind Mills, Pump Jacks, Hand Grinding Mills for Poultry Raisers, Gasoline Engines, Ensilage Cutters and Brass Candlesticks.

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Feed Cut Roots

Make Big Stock Profits

Multiply the value of your stock feed by mixing it with cut roots. Use less feed—keep stock healthy—help them show more profits—with the

Banner Root Cutter

Seven sizes—hand or power. Self feeding—works easy—no choking—makes half round chips—separates dirt from feed. Thousands in use. Mail postal for illustrated catalog. Address

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THE FREELAND CORN CRIB

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

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SCIENTIFIC SWEEP MILL

This No. 6 triple geared, double acting sweep mill has more capacity and will do better work than any other two-horse mill; it

Turns Corn TO DOLLARS

Avoid waste, and make big profits by grinding your feed with one of our mills. We make power mills also for engines of any size. Send for free catalog.

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30 Days Free Trial

Costs you nothing to test a set of Empire Steel Wheels for full month. Will prove them stronger, easier running, better in every way than any others. Lighten your work, save 25% of the draft, save repair bills. Write for free trial offer.

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Lamb—1st and 2nd, Leland; 3rd, Wing. Ram, any age—1st, Andrews. Ram, any age, Michigan bred—1st, Leland. Ewe, any age—1st, Andrews. Ewe, any age, Michigan bred—1st, Powell. Four Lambs Bred by Ex.—1st, Leland; 2nd, Powell; 3rd, Wing. Edwin S. George Special Sheep. Pen of four Lambs bred in Michigan—Cup, E. E. Leland & Son, Ann Arbor, Mich.

Hampshire Sheep.

Ram 2 yrs.—1st and 2nd, Walnut Hall Farm, Donerail, Ky.; 3rd, Interlaken School Farm, Rolling Prairie, Ind.; 4th and 5th, Monroe Stock Farm, Lucas, O. Ram 1 yr.—1st and 2nd, Walnut Hall Farm; 3rd, Peter Arkell & Son, Teeswater, Ont.; 4th, S. L. Wing, Kinderhook, Mich. Lamb—1st, 2nd and 3rd, Walnut Hall Farm; 4th, Interlaken School Farm; 5th, Monroe Stock Farm. Ewe 2 yrs.—1st and 3rd, Walnut Hall Farm; 2nd, Interlaken School Farm; 4th and 5th, Monroe Stock Farm. Ewe 1 yr.—1st, 2nd and 3rd—Walnut Hall Farm; 4th, Monroe Stock Farm; 5th, Interlaken School Farm. Lamb—1st, 2nd and 3rd, Walnut Hall Farm; 4th, Monroe Stock Farm; 5th, Interlaken School Farm. Flock—1st, Walnut Hall Farm; 2nd, Interlaken School Farm; 3rd, Monroe Stock Farm; 4th, William Newton. Breeder's Flock—1st, Walnut Hall Farm; 2nd, Monroe Stock Farm; 3rd, Interlaken School Farm; 4th, Wm. Newton. Lamb Flock—1st, Walnut Hall Farm; 2nd, Monroe Stock Farm; 3rd, Interlaken School Farm; 4th, Newton. Get of Sire—1st, Walnut Hall Farm; 2nd, Monroe Stock Farm; 3rd, Interlaken School Farm; 4th, Newton.

Oxford Sheep.

Ram 2 yrs.—1st and 4th, Peter Arkell & Son, Teeswater, Ont.; 2nd and 5th, G. W. Heskett, Fulton, O.; 3rd, S. L. Wing, Kinderhook, Mich. Ram 1 yr.—1st, 4th and 5th, Arkell & Son; 2nd, H. C. Arkell; 3rd, Heskett. Lamb—1st, Heskett; 2nd, 3rd and 4th, Arkell & Son; 5th, Wing. Ewe 2 yrs.—1st, Wing; 2nd, B. F. Miller, Flint, Mich.; 3rd, Arkell & Son; 4th, H. C. Arkell; 5th, Heskett. Ewe 1 yr.—1st and 3rd, Arkell & Son; 2nd, H. C. Arkell; 4th, J. C. Williams; 5th, Heskett. Lamb—1st, H. C. Arkell; 2nd, Heskett; 3rd and 5th, Miller; 4th, Wing. Flock—1st, Arkell & Son; 2nd, Heskett; 3rd, Wing; 4th, H. C. Arkell; 5th, Miller. Breeder's Flock—1st, Arkell & Son; 2d, Miller; 3rd, Heskett; 4th, Wing; 5th, H. C. Arkell. Lamb Flock—1st, Miller; 2nd, Arkell & Son; 3rd, Heskett; 4th, Wing; 5th, H. C. Arkell. Get of Sire—1st, Miller; 2nd, Arkell & Son; 3rd, Heskett; 4th, Wing; 5th, H. C. Arkell. Gd. Champ. Ewe (Yearling)—Arkell & Son. Gd. Champ. Ram (2 yr. old)—Arkell & Son.

Southdown Sheep.

Ram 2 yrs.—1st and 3rd, Robt. McEwen, Byron, Ont.; 2nd, S. L. Wing, Kinderhook, Mich.; 4th, G. W. Heskett, Fulton, Ohio; 5th, Interlaken Farm, LaPorte, Ind. Ram 1 yr.—1st, Monroe Stock Farm, Monroe, Ohio; 2nd, McEwen; 3rd and 5th Heskett; 4th, Wing. Lamb—1st, 2nd and 3rd, McEwen; 4th, Monroe Stock Farm; 5th, Heskett. Ewe 2 yrs.—1st Monroe Stock Farm; 2nd and 4th, Heskett; 3rd, McEwen; 5th, Wing. Ewe 1 yr.—1st and 5th, Monroe Stock Farm; 2nd, McEwen; 3rd, Heskett; 4th, Wing. Lamb—1st, McEwen; 2nd, Wing; 3rd, McEwen; 4th and 5th, Heskett. Flock—1st, Monroe Stock Farm; 2nd, McEwen; 3rd, Wing; 4th, Heskett; 5th, Interlaken Farm. Flock—1st, McEwen; 2nd, Monroe Stock Farm; 3rd, Heskett; 4th, Wing; 5th, Interlaken Farm. Lamb Flock—1st, McEwen; 2nd, Heskett; 3rd, Wing; 4th, Monroe Stock Farm; 5th, Interlaken. Get of Sire—1st, McEwen; 2nd, Heskett; 3rd, Wing; 4th, Monroe Stock Farm; 5th, Interlaken Farm. Champ. Ram—McEwen. Champ. Ewe—Monroe Stock Farm.

Cheviot Sheep.

Ram 2 yrs.—1st and 3rd, R. & W. Postle, Camp Chase, Ohio; 2nd and 5th, G. C. Woodman, Bennington, Mich.; 4th, Interlaken Farm, LaPorte, Ind. Ram 1 yr.—1st and 5th, Postle; 2nd and 4th, Woodman; 3rd, Interlaken. Lamb—1st and 5th, Woodman; 2nd and 3rd, Postle; 4th, Interlaken. Ewe 2 yrs.—1st and 2nd, Postle; 3rd, Interlaken; 4th and 5th, Woodman. Ewe 1 yr.—1st and 2nd, Postle; 3rd, Woodman; 4th and 5th, Interlaken. Lamb—1st and 2nd, Postle; 3rd and 5th, Interlaken; 4th, Woodman. Flock—1st, Postle; 2nd, Woodman; 3rd, Interlaken. Young Flock—1st, Postle; 2nd, Woodman. Lamb Flock—1st, Postle; 2nd, Woodman; 3rd, Interlaken. Get of Sire—1st, Postle; 2nd, Woodman; 3rd, Interlaken. Champ. Ram and Ewe—Postle.

Horned Dorset Sheep.

Ram 2 yrs.—1st and 2nd, H. H. Cherry, Xenia, Ohio; 3rd and 4th, Geo. C. Woodman, Bennington, Mich.; 5th, Interlaken School Farm, Rolling Prairie, Ind. Ram 1 yr.—1st and 4th, Cherry; 2nd and 3rd, Woodman; 5th, Interlaken. Lamb—1st, 2nd and 4th, Cherry; 3rd, Woodman; 5th, Wm. Newton, Pontiac, Mich. Ewe 2 yrs.—1st and 3rd, Cherry; 2nd and 5th, Woodman; 4th, Interlaken. Ewe 1 yr.—1st, 2nd, 3rd and 4th, Cherry; 5th, Interlaken. Lamb—1st, 4th and 5th—Cherry; 2nd and 3rd, Woodman.

Flock—1st, Cherry; 2nd, Woodman; 3rd, Interlaken; 4th, Newton. Young Flock—1st, Cherry; 2nd, Woodman; 3rd, Interlaken. Lamb Flock—1st, Woodman; 2nd, Cherry; 3rd, Interlaken; 4th, Newton. Get of Sire—1st, Woodman; 2nd, Cherry; 3rd, Interlaken; 4th, Newton. Champ. Ewe (Yearling)—Cherry. Champ. Ram (Aged)—Cherry.

Lincoln Sheep.

Ram 2 yrs.—1st, S. L. Wing, Kinderhook, Mich.; 2nd, Watt Bros., Kerwood, Ont.; 3rd, Wm. Newton, Pontiac, Mich. Ram 1 yr.—1st, Watt; 2nd, Wing; 3rd, C. D. McLean, Kerwood, Ont. Lamb—1st and 5th, Wing; 2nd and 4th, Watt; 3rd, McLean. Ewe 2 yrs.—1st and 3rd, Wing; 2nd, Watt; 4th, McLean. Ewe 1 yr.—1st and 2nd, Wing; 3rd and 4th, Watt; 5th, McLean. Lamb—1st and 2nd, Watt; 3rd and 5th, Wing; 4th, McLean. Flock—1st, Wing; 2nd, Watt; 3rd, McLean. Young Flock—1st, Watt; 2nd, Wing. Lamb Flock—1st, Watt; 2d, Wing; 3rd, McLean. Get of Sire—1st, Watt; 2nd, Wing; 3rd, McLean.

Leicester Sheep.

Ram 2 yrs.—1st, Wm. McLean & Sons, Kerwood, Ont.; 2nd, C. D. McLean, Kerwood, Ont.; 3rd, Wm. Newton, Pontiac, Mich. Ram 1 yr.—1st, McLean & Sons; 2nd, McLean. Lamb—1st, 2nd and 3rd, McLean & Sons; 4th and 5th, McLean. Ewe 2 yrs.—1st and 2nd, McLean & Sons; 3rd, McLean; 4th and 5th, Newton. Ewe 1 yr.—1st, 2nd and 3rd, McLean & Sons; 4th, McLean; 5th, Newton. Lamb—1st, 2nd and 3rd, McLean & Sons; 4th and 5th, McLean. Flock—1st, McLean & Sons; 2nd, McLean; 3rd, Newton. Young Flock—1st, McLean & Sons. Lamb Flock—1st, McLean & Sons; 2d, McLean; 3rd, Newton. Get of Sire—1st, McLean & Sons; 2nd, McLean; 3rd, Newton. Champ. Ewe (1 yr.)—McLean & Sons. Champ. Ram (Aged)—McLean & Sons.

Cotswold Sheep.

Ram 2 yrs.—1st and 2nd, Peter W. Hintz, Clyde, O.; 3rd, Wm. Newton, Pontiac, Mich. Ram 1 yr.—1st and 2nd, Hintz; 3rd, Newton. Lamb—1st and 2nd, Hintz; 3rd and 4th, Newton. Ewe 2 yrs.—1st and 2nd, Hintz; 3rd and 4th, Newton. Ewe 1 yr.—1st and 2nd, Hintz; 3rd and 4th, Newton. Lamb—1st and 2nd, Hintz; 3rd and 4th, Newton. Flock—1st, Hintz; 2nd, Newton. Young Flock—1st, Hintz; 2nd, Newton. Lamb Flock—1st, Hintz; 2nd, Newton. Get of Sire—1st, Hintz; 2nd, Newton. American Cotswold Associational Specials. Pen Four Lambs—1st, Hintz. Champ. Ewe (2 yr.)—Hintz. Champ. Ram (1 yr.)—Hintz.

Delaine Sheep.

Ram 2 yrs.—1st and 4th, S. Blamer & Son, Johnstown, O.; 2nd, David K. Bell, Brighton Sta., N. Y.; 3rd, Calhoun Bros., Bronson, Mich.; 5th, E. M. Moore, Wixom, Mich. Ram 1 yr.—1st and 3rd, Blamer; 2nd and 5th, Calhoun; 4th, Moore. Lamb—1st and 5th, Blamer; 2d and 3rd, Calhoun; 4th, Bell. Ewe 2 yrs.—1st and 2nd, Blamer; 3rd, Bell; 4th and 5th, Moore. Ewe 1 yr.—1st, 3rd and 4th—Calhoun; 2nd, Blamer; 5th, Moore. Lamb—1st, Blamer; 2nd and 4th, R. Williamson, Xenia, O.; 3rd and 5th, Calhoun. Flock—1st, Blamer; 2nd, Calhoun; 3rd, Moore; 4th, Bell; 5th, Williamson. Young Flock—1st, Calhoun; 2d, Blamer. Lamb Flock—1st, Calhoun; 2nd, Blamer. Get of Sire—1st, Calhoun; 2nd, Blamer; 3rd, Moore.

American Merino Sheep.

Ram 2 yrs.—David K. Bell, Brighton Sta., N. Y.; 2nd, R. D. Williamson, Xenia, O.; 3rd, S. Blamer & Son, Johnstown, O.; 4th, E. M. Moore, Wixom, Mich.; 5th, W. M. Staley, Marysville, O. Ram 1 yr.—1st, Bell; 2nd, Williamson; 3rd and 4th, Blamer; 5th, Moore. Lamb—1st, Williamson; 2nd and 5th, Blamer; 3rd, Bell; 4th, Calhoun Bros., Bronson, Mich. Ewe 2 yrs.—1st, Moore; 2nd and 5th, Bell; 4th, Calhoun; 3rd, Blamer. Lamb—1st, Blamer; 2nd and 5th, Williamson; 3rd, Bell; 4th, R. D. Stephens, South Lyon, Mich. Ewe 1 yr.—1st, Moore; 2nd, Blamer; 3rd, Bell; 4th, Williamson; 5th, Calhoun. Flock—1st, Bell; 2d, Moore; 3rd, Blamer; 4th, Williamson; 5th, Calhoun. Young Flock—1st, Bell; 2nd, Moore; 3rd, Stephens. Lamb Flock—1st, Bell; 2nd, Moore; 3rd, Stephens; 4th, Calhoun; 5th, Blamer. Get of Sire—1st, Bell; 2nd, Moore; 3rd, Stephens; 4th, Blamer; 5th, Calhoun.

Rambouillet Sheep.

Ram 2 yrs.—Orth & Matthews, McGuffey, Ohio; 2nd, E. M. Moore, Wixom, Mich.; 3rd and 5th, F. S. King Bros., Co., Laramie, Wyoming; 4th, J. M. Shaw, Edison, Ohio. Ram 1 yr.—1st and 4th, King Bros.; 2nd and 5th, Orth & Matthews; 3rd, Moore. Lamb—1st and 3rd, Shaw; 2nd and 5th, Moore; 4th, King Bros. Ewe 2 yrs. or over—1st and 2nd, King Bros.; 3rd and 4th, Shaw; 5th, Moore. Ewe 1 yr.—1st, Moore; 2nd and 3rd, King Bros.; 4th, Orth & Williams; 5th, Shaw. Ewe Lamb—1st and 4th, King Bros.; 2nd and 3rd, Moore; 5th, Shaw. Flock—1st, King Bros.; 2nd, Orth & Matthews; 3rd, Moore; 4th, Shaw. Young Flock—1st, King Bros.; 2nd, Moore; 3rd, Orth & Matthews. Lamb Flock—1st, Moore; 2nd, King Bros.; 3rd, Orth and Matthews. Get of Sire—1st, Moore; 2d, King Bros.; 3rd, Orth & Matthews.

Fat Sheep.

Middle Wool 1 yr.—1st, Peter Arkell & Sons, Teeswater, Ont.; 2nd, Wm. Newton, Pontiac, Mich. Middle W. 1 yr.—1st and 2nd, Geo. W. Heskett, Fulton, O. Champ. M. W. Wether—1st, Arkell & Sons. Gd. Champ. Wether—Arkell & Sons. Middle Wool Lamb—2d, J. C. Andrews, West Point, Ind. L. Wool 2 yr.—1st, Newton. Merino Lamb—1st and 2nd, Newton. Merino 2 yrs.—1st and 2nd, Newton. Merino 1 yr.—1st and 2nd, Newton. L. Wool 1 yr.—1st and 2nd, Newton. L. Wool Lamb—1st and 2nd, Newton.

Berkshire Swine.

Boar 2 yrs.—1st Hibbard & Baldwin, Bennington, Mich. Boar 18 mos.—1st, Nells Falyan, Geneva, Ill.; 2nd, J. W. Clapp, Novi, Mich. Boar 12 mos.—1st and 2nd, Clapp. Boar 6 mos.—1st, Hibbard & B.; 2nd, B. B. Perry, Leslie, Mich.; 3rd and 4th, Clapp. Boar un. 6 mos.—1st, 2nd and 3rd, Hibbard & B.; 4th, Clapp. Sow 2 yrs.—1st and 2nd, Hibbard & B.; 3rd and 4th, Clapp. Sow 18 mos.—1st and 3rd, Falyan, 2nd and 4th, Hibbard & B. Sow 12 mos.—1st and 2nd, Hibbard & B.; 3rd and 4th, Clapp. Sow 6 mos.—1st and 3rd, Perry; 2nd, Falyan. Sow un. 6 mos.—1st and 2nd, Hibbard & B.; 3rd and 4th, Clapp. Exhibitor's Herd—1st, Hibbard & B.; 2nd, Clapp. Breeder's Herd—1st, Hibbard & B. Four Get of Sire—1st, Falyan; 2nd, Hibbard & B.; 3rd, Clapp. Four Produce of Sow—1st, Hibbard & B.; 2nd, Clapp. Herd—American Trophy, 1st, Hibbard & B. Michigan Trophy, 4 pigs—1st, Hibbard & B. Champ. Boar 1 yr. or over—1st, Hibbard & B. Champ. Boar un. 1 yr.—1st, Hibbard & B. Champ. Sow 1 yr. or over—1st, Falyan; Champ. Sow un. 1 yr.—1st, Hibbard & B. Gd. Champ. Boar and Sow—Hibbard & B.

Poland China Swine.

Boar 2 yrs.—1st and 2nd, A. C. Grieve, Xenia, O.; 3rd, C. E. Simon & Son, Geneva, Ind.; 4th, Bean Creek Farm, Addison, Mich. Boar 18 mos.—1st, C. C. Beatty, Vanwert, O.; 2nd, Bean Creek; 3rd, Beatty. Boar 12 mos.—1st and 2nd, Grieve. Boar 6 mos.—1st, Beatty; 2nd and 3rd, Grieve; 4th, Simon. Boar un. 6 mos.—1st, 2nd and 3rd, Grieve; 4th, Simon. Sow 2 yrs.—1st, Beatty; 2nd and 3rd, Grieve; 4th, Simon. Sow 18 mos.—1st, Beatty; 2nd, Grieve; 3rd, Simon; 4th, Bean Creek. Sow 12 mos.—1st and 4th, Grieve; 2nd and 3rd, Beatty. Sow 6 mos.—1st, 3rd and 4th, Beatty; 2nd, Simon. Sow un. 6 mos.—1st, Grieve; 2nd, Beatty; 3rd, Bean Creek; 4th, Simon. Exhibitor's Herd—1st, Beatty; 2nd, Grieve; 3rd, Simon; 4th, Bean Creek. Breeder's Herd—1st, Grieve; 2nd, Beatty; 3rd, Simon; 4th, Bean Creek. Get of Sire—1st, Grieve; 2nd, Simon; 3rd, Bean Creek; 4th, Beatty. Produce of Sow—1st, Beatty; 2nd, Bean Creek. Champ. Boar 1 yr. or over—Beatty. Champ. Boar un. 1 yr.—Beatty. Champ. Sow 1 yr. or over—Grieve. Champ. Sow un. 1 yr.—Beatty. Gd. Champ. Boar—Beatty. Gd. Champ. Sow—Grieve.

Hampshire Swine.

Boar 1 yr.—1st, Lenawee Stock Farm; 2nd, D. W. Castor, Belleville, O.; 3rd, W. C. Gilliland, Van Wert, O. Boar 18 mos.—1st, Leroy P. Stephen, Carlock, Ill.; 2nd, Adam Alt, Rockford, O.; 3rd, Castor; 4th, Lenawee Stock. Boar 12 mos.—1st, Gilliland; 2nd, Clark Bros., Grand Blanc, Mich.; 3rd, Alt. Boar 6 mos.—1st, Alt; 2nd, Castor; 3rd, Lenawee Stock; 4th, Stephen. Boar un. 6 mos.—1st and 4th, Castor; 2nd, Stephen; 3rd, Alt. Sow 2 yrs.—1st, Castor; 2nd, Alt; 3rd, Gilliland; 4th, Stephen. Sow 18 mos.—1st, Gilliland; 2nd, Castor; 3rd, Alt; 4th, Lenawee Stock. Sow 12 mos.—1st and 4th, Castor; 2nd, Alt; 3rd, Gilliland. Sow 6 mos.—1st and 3rd, Castor; 2nd, Alt; 4th, Gilliland. Sow un. 6 mos.—1st, Alt; 2nd and 3rd, Castor; 4th, Clark Bros. Exhibitor's Herd—1st, Alt; 2nd, Castor; 3rd, Gilliland; 4th, Stephen. Breeder's Herd—1st, Castor; 2nd, Alt; 3rd, Gilliland; 4th, Clark Bros. Get of Sire—1st, Alt; 2nd, Castor; 3rd, Gilliland; 4th, Clark Bros. Produce of Sow—1st, Castor; 2nd, Alt; 3rd, Lenawee Stock; 4th, Gilliland. Champ. Boar 1 yr.—Stephen. Champ. Boar un. 1 yr.—Alt. Champ. Sow 1 yr. and un. 1 yr.—Castor. Gd. Champ. Boar—Stephen. Gd. Champ. Sow—Castor.

Duroc-Jersey Swine.

Boar 2 yrs. or over—1st, H. E. Brown, Hersman, Ill.; 2nd, E. E. Stemen & Sons, Middleport, O.; 3rd and 4th, Brookwater Farm, Ann Arbor, Mich. Boar 18 mos.—1st and 2nd, Browning; 3rd, Stemen; 4th, M. T. Story, Lowell, Mich. Boar 12 mos.—1st, Stemen; 2nd, Browning; 3rd, Brookwater Farm; 4th, Story. Boar 6 mos.—1st, Browning; 2d, Brookwater Farm; 3rd, Stemen; 4th, Story. Boar un. 6 mos.—1st and 4th, Brookwater Farm; 2nd and 3rd, Stemen. Sow 2 yrs. or over—1st, Browning; 2nd and 4th, Stemen; 3rd, Browning. Sow 18 mos.—1st and 4th, Stemen; 2nd and 3rd, Browning. Sow 12 mos.—1st and 3rd—Browning; 2nd, Stemen; 4th, Brookwater Farm. Sow 6 mos.—1st and 3rd, Browning; 2nd and 4th, Stemen.

Sow un. 6 mos.—1st and 4th, Story; 2nd and 3rd, Brookwater Farm.
 Exhibitor's Herd—1st, Browning; 2nd, Stemen; 3rd, Brookwater Farm; 4th, Story.
 Breeder's Herd—1st, Browning; 2nd, Stemen; 3rd, Story; 4th, Brookwater Farm.
 Four Get of Same Boar—1st, Browning; 2nd, Stemen; 3rd, Brookwater Farm; 4th, Story.
 Four Produce of Same Sow—1st, Brookwater Farm; 2nd, Story.
 Boar and 3 Sows owned by Exhibitor—1st, Brookwater Farm; 2nd, Story.
 Three Barrows un. 1 yr.—1st, Brookwater Farm; 2nd, Story.
 Champ. Boar 1 yr. or over—Browning.
 Champ. Boar un. 1 yr.—Browning.
 Champ. Sow 1 yr. or over—Browning.
 Champ. Sow un. 1 yr.—Browning.
 Gd. Champ. Boar and Sow—Browning.
 (Concluded next week).

Veterinary.

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

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

Editors' Note.—A portion of last week's veterinary queries were lost in the mails while being forwarded to our veterinarian. A special reply will be sent to every subscriber who was inconvenienced by our inability to answer his question if he will repeat same.

Swollen Joints.—I have a suckling colt with swollen joints, was all right until a week ago. E. W., Alpena, Mich.—Apply equal parts spirits camphor and tincture of iodine to enlarged joints once a day and give five grs. sodium salicylate soda at a dose three times a day.

Stifle Weakness.—When moving my three-year-old filly I can hear both stifles crack and slip into place, then she moves well. It is noticed most when backing. D. S. H., Kibbie, Mich.—Apply one part powdered cantharides and six parts fresh lard once a week, lightly, and she will recover.

Chronic Contracted Hoofs—Thrush.—For the past five years my 13-year-old mare has been troubled with contracted hoofs and the treatment we have applied has done little good. I also have another horse that is troubled with diseased frogs of both fore feet and I would like to know how to treat them. G. M., Zeeland, Mich.—Apply light blister to coronet once a week and apply lanolin to hoof daily, will partially remedy this chronic trouble, but don't look for a cure. One part cantharides and six parts fresh lard makes a very good blister; however, you can safely apply any of the blisters that are regularly advertised in this paper. First apply hydrogen peroxide, then apply calomel to diseased frog daily until he gets well. The hoofs should be kept clean and dry.

Roarer.—I have a brood mare that had distemper last spring; since then she breathes with difficulty, and glands of throat are swollen. Local Vet. fails to help her. W. O., Gladwin, Mich.—Apply one part iodine and ten parts fresh lard to throat glands once a day and give her 1 dr. potassium iodide at a dose in feed or water three times a day. It may be necessary to perform a surgical operation on throat before she recovers.

Rheumatism.—We have a colt that has a very painful joint ailment which shifts from one joint to another. Our local Vet. thought it either sprain or rheumatism. This lameness shifts from one fetlock to the other, but is never present in both at same time. C. M., Ewart, Mich.—Apply one part iodine and ten parts lard to joint every day or two. Give 5 grs. of sodium salicylate at a dose three times a day.

Sore Neck.—I have a colt that has a sore neck; this cavity is deep and I have been unable to heal it. This sore keeps raw, no matter what I put on. G. E. S., New Boston, Mich.—Apply one part iodine and ten parts boracic acid to sore twice a day. It is perhaps needless for me to say, but be sure the collar fits.

Indigestion.—Eight-year-old cow gives milk that does not keep long before it changes, and after standing some time curd-like bodies stick to edge of pan. Is her milk fit for people to use? W. D. T., Belding, Mich.—Give her a dessertspoonful of hypo-sulphite of soda at a dose in feed three times a day. Are you keeping the milk free from outside contaminating influences? Her milk is not fit for domestic use.

Infected Udder.—I have a cow that has had several attacks of udder trouble and I am anxious to have her cured. Mrs. W. L., Cheboygan, Mich.—When a cow's udder becomes infected in more than one quarter, and when one inflammatory attack follows another, she rarely gets entirely well. She will be benefited by applying iodine ointment to diseased and caked portion once a day and give her 2 drs. of potassium iodide at a dose in feed three times a day.

Warts on Teats.—I have a three-year-old cow that has numerous growths on udder and teats which interfere with the milk flow, and I would like to know what will take them off. F. D., Wellston, Mich.—Apply one part salicylic acid and two parts fresh lard or lanolin to warts daily. If any of the bunches or warts have necks, cut them off.

Farmers' Clubs

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—Jas. N. McBride, Burton.
 Vice-President—C. B. Scully, Almont.
 Secretary-Treasurer—Mrs. C. P. Johnson, Metamora.

Corresponding Secretary—Mrs. Wm. T. McConnell, Owosso.

Directors—C. P. Johnson, Metamora; H. W. Chamberlain, White Lake; Wm. T. Hill, Carson City; Jerry Spaulding, Belding; R. J. Robb, Mason; J. F. Riemann, Flint.

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

Associational Motto:

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

CLUB DISCUSSIONS.

The Best Money Crop.—The September meeting of the Ingham County Farmers' Club was held at Woodlawn with Mr. and Mrs. W. M. Webb, and there was a good attendance despite the fact that it is a busy season. Mr. Webb has the distinction of never having failed to pay his dues, having joined the Club in the early years of its organization, he and Mr. Russell, followed closely by others, stand next to the two charter members, President Ives and Judge Bristol. Mr. Webb has lived on the farm 45 years and spent his whole life in the same vicinity, and has surrounded himself with the comforts of life. After the usual good dinner, President Ives called the meeting to order and Lloyd and Lola Avery sang a vacation song. Mrs. Taylor called the roll, the response being "Helpful Thoughts." E. A. Densmore, President of the Farmers' Mutual Insurance Co., who gave a paper upon "Things Real and things Personal," giving a good deal of information about real and personal property, and telling the difference between larceny and trespass. It was full of interest and a whole meeting could have profitably been given to it and the discussion. The question of the day, "The Farmer's Best Money Crop," was handled by W. H. Taylor who said in part: "The best crop depends upon the farm as well as the farmer. At the present time perhaps beans are taking the place of the wheat of years ago as a cash crop, but the raising of live stock is not to be ignored, as it helps to maintain the fertility of the farms. No question but dairying is profitable, but all can not do this—too many do not like to milk. One of the best crops is that of contentment—to realize our blessings and care for the coming generation."

Ladies Discuss Topic of the Hour.—Nearly 50 members of the Charlevoix Farmers' Club met at the home of Mr. and Mrs. Theron Palmeter and family, Saturday, Sept. 20, in spite of a cold, wet and disagreeable day. After the usual picnic dinner, the Club was called to order by President Hagleshaw. Following the business meeting, an excellent program in charge of Miss Clara Palmeter was given. Piano solos were rendered by Hazel Bradley, Leona Miller and Iva Maxson, a vocal solo by Mrs. L. L. Joy, and a violin and piano duet by Mr. Joy and Miss Maxson. Alta Fenner and Mrs. A. P. Simpson each gave a recitation and Mrs. L. J. Bradley a reading. Socialization of Farm Life. The topic, "Meals for Threshers," was discussed by the Club members. Some excellent and palatable meals were mentioned. The program was closed with the singing of several songs from the Club song books. The place selected for the next meeting is at the home of Mr. and Mrs. Elwin Pike near Galesburg and as it is the time for the annual election of officers, there will be no lecturer's program. Topic chosen for discussion at that time is "What to Feed Poultry in the Winter Time." Mesdames G. L. Perry, Olin Bera, and Theron Palmeter and Messrs. William Henson, L. J. Bradley and A. B. Imus were appointed to discuss the subject. Mesdames J. L. Batesman, Olin Bera and A. D. Scrackengast were appointed to assist the hostess.

Discuss Practical Farm Topics.—Mr. and Mrs. Wm. Garber entertained the members of the Burton Farmers' Club, of Shiawassee county, very enjoyably at the September meeting. After an excellent dinner that was prepared from products raised on the farm, the program was taken up. The roll call was made interesting, each member responding with earliest remembrances. "Waste on the Farm." Mrs. Hammond said that the land was not tilled thoroughly enough and there was too much waste on most farms. In the dairy business the farmers were not careful enough about selecting the right kind of stock. "Waste About the House." Mr. Hammond thinks the ladies waste too much energy in trying to outdo their neighbors. A. Schultz thinks a four-horsepower gasoline engine the most practical for all farm work. "Are State and County Fairs a Benefit to the Farmers?" Mr. Brookins maintains that they are a great benefit in all ways. "Which is the Better to Hire, a Thresher with Help, or Furnish One's own Help?" Mr. Garner said that help is so scarce that it is better to hire a thresher with help. "Is there any way by which you may Condemn a Gravel Pit for Public Use?" Mr. Peterson said if circumstances and conditions demand it, there is a law that permits the public to condemn it. The meeting was adjourned to meet in November with Mr. and Mrs. Albert Schultz.—Reporter.

Grange.

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

THE OCTOBER PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Song.

A story—told by a woman.

How can we help blot out the great "White Plague," Tuberculosis? Discussion based on experience in sleeping out of doors.

Prayer, "A Tuberculosis Day Prayer," by Chaplain.

Humorous recitation.

Violin solo.

A sold eye for 80c a bushel to the village merchant, who in turn sold it to B., who lives on a farm less than two miles from A. for \$1.50. What remedy would you suggest? Discussion.

Appointment of committees to visit schools.

Some of the things I liked in this program today.

Closing song.

MONTCALM POMONA MEETING.

Montcalm County Pomona Grange, No. 24, met with Bushnell Grange two miles east of Fenwick on Thursday, Sept. 18, for an all-day meeting. On account of the busy time the attendance was small, but delegates were present from the following Granges: Montcalm, Howard City, Butternut and Crystal. A splendid chicken-pie dinner was served by the ladies of Bushnell Grange.

In the afternoon there was a short fifth degree session. Reports from the several Granges showed that the organization is holding its own. Bro. and Sister Hiram Smith, of Montcalm Grange, were elected delegates to the State Grange from Pomona, and Bro. Ashley Berrige and Sister J. M. Parkhurst are the alternates. Bro. Ashley Berrige was suggested as a candidate for the State Executive Committee.

In the fourth degree session a good program was carried out. Sister Forsyth, of Bushnell Grange, giving the address of welcome in which she urged the necessity of keeping up with the times in Grange work. Bro. William Walker, of Crystal Grange, talked on how to keep the boys and girls on the farm, in which he mentioned making the farm attractive, giving them something to own and control, and not giving them bad jobs to do. In the discussion that followed much interest was shown in the question and many valuable helps suggested. The roll call was responded to with sayings from Poor Richard's almanac.

"Saving Strength in the Home," was discussed by the sisters, and the following things were suggested: Have a vacuum cleaner and sweeper, gasoline sad irons, a power washer, linoleum on kitchen floors, a room to do the washing, churning, etc., in, which can be done with a gasoline engine. One sister present still does hers in the good old way.

The subjects brought out by the question box were: "The best time to sow alfalfa," some thought in the spring, while some favored August. It was decided that a 40-acre farm is large enough for one man to attend to, although much depends upon the man. It was the opinion of all, except one, that it pays to have a garden, and that one member said he never had had a garden in his life. The age which a child should reach before choosing his or her vocation in life was left undecided. It was thought best to let them have time to decide for themselves. Bro. E. W. Johnson read an original poem on Grange work, this closing a very interesting session.—Press Reporter.

Community Specialties received some consideration at the first September meeting of Harmony Grange, of Charlevoix county, it being proposed that the Grange take the lead in making the community noted for some particular thing. However, there was some difference of opinion as to what would be the best thing to make a specialty of. In view of the prospect of a creamery being established at Boyne City in the near future, several advocated the adoption of some breed of dairy cattle, thereby establishing a reputation as a community in which modern, up-to-date dairying is the chief interest. Some members of the Grange are making a study of the various dairy breeds and their adaptability to the conditions of this section, hoping to enable the organization to reach a conclusion and to make a practical beginning in the near future.

Nearing the Century Mark, as regards membership, is the report from Vermontville Grange, of Eaton county. More than 40 members have been added to the roll during the past year, making the degree work consume an undue proportion of the time allotted to meetings. However, interest in the program work is keen and the future of this subordinate seems very bright.

COMING EVENTS.

Pomona Meetings.

Charlevoix Co., with Charlevoix Grange, Tuesday, Oct. 7. County convention. Clinton Co., at Maple Rapids, Friday, Oct. 17.
 Eaton Co., with Delta Mills Grange, Saturday, Oct. 18. Prof. French, of M. A. C., will talk on "Agriculture in Rural Schools."

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