

MICHIGAN FARMER

AND LIVE STOCK JOURNAL.
PUBLISHED WEEKLY ESTABLISHED 1843.

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

VOL. CXXXVII. No. 5.
Whole Number 3558.

DETROIT, MICH., SATURDAY, JULY 29, 1911.

\$1.00 A YEAR.
\$2.75 FIVE YEARS.

FARM NOTES.

Canada Thistle Seed.

I am sending you some samples of Canada thistle blows. As you will note, some of these are white and others are brown. I would like to know if there are two kinds, or if the pollen from the brown ones fertilizes the others. I can find no evidence of seed in the brown ones. Kindly examine them carefully and see if you can find anything that would grow if they are not cut. The plants with the brown buds seem to be in patches, as are the white ones, but sometimes I find them together. The brown buds do not break open and the down blow with the winds, as the white ones do. Please advise as soon as possible, as I have a big job to cut them out of my oats. Usually I go through my oats just as they are budded and cut them off, letting them fall to the ground, but this year I was unable to get help to do the job. Am cutting them now with corn cutters and putting them in little piles in the oats and will burn them later.

Eaton Co.

L. G. T.

In the writer's opinion the difference in the appearance of the blows of the thistles sent is due simply to a difference in the characteristics of the plants upon which they grew. Canada thistles do not seed very liberally in Michigan. Most of the plants do not bear seed at all and on these the blows have the brown and blasted appearance mentioned. The other buttons or heads from which the white down protrudes have at least a tendency toward the seed-bearing habit, yet there are probably few seeds in these that would germinate under ordinary conditions. As an interesting experiment the writer is making a germination experiment with the seed from one of these heads. It is doubtless true, however, that comparatively few seeds are matured under average conditions and in normal seasons, else the pest would be everywhere present. However, there is likewise no doubt that some mature seeds are produced and that new colonies are started from them under favorable conditions. But these colonies spread rapidly by means of the root stocks and will soon overrun whole fields unless eradicated. The best means of eradication, however, is by clean culture of a hoed crop, as the greatest precaution against their spread from the seed will never lessen the pest where it is once established.

Lime-Sulphur for Potato Blight.

Will you please inform me through the columns of The Farmer whether lime-sulphur can be used as a preventive for blight, and if so what strength?

Oakland Co.

C. K. P.

The writer has no data on the use of the lime-sulphur spray as a preventive

of the late blight of potatoes. So far as we have been able to learn, no authentic experiments have been made to demonstrate the comparative value of the lime-sulphur spray and Bordeaux mixture for this purpose. The lime-sulphur mixture is a comparatively new preparation and was first used as an insecticide in the treatment of sheep scab. Later it was found to be effective in the spraying of fruit trees for the eradication of the San Jose scale. About this time the injurious effects of the frequent applications of Bordeaux mixture shown in the russetting of the fruit and in other ways were noted, and the lime-sulphur mixture was tried with success as a fungicide. It would perhaps be a profitable field of

experimentation to try this mixture on potatoes as a means of preventing the destructive late blight, although there is not the same good reason for it that obtained in the case above cited, since the Bordeaux mixture has been demonstrated to have a beneficial effect upon the potato plant which, as noted in a comment in the last issue, is sufficiently pronounced to cause an increased yield that on an average of several seasons' results will more than pay the entire expense of its application. If, however, the lime-sulphur spray would give the same degree of immunity from late blight with like beneficial results, potato growers ought to know it, for which reason it would be a profitable line of investigation



Gully a Mile Long and 60 Feet Deep. (See "Soil Erosion" on Next Page).

for practical growers as well as the experiment stations.

Eradicating Horse Nettle.

I have a field that has several patches of Horse Nettle that I would like to eradicate. Can you give me any information as to how it can be done? I have pulled it up and dug it up but it did not good. Has there been any way found to kill it by spraying? Have the experiment stations published any bulletins on the subject? If you or any of your readers can give me any information on the subject I would be very thankful to have you do so. This nettle is the most troublesome weed that I have to deal with on my farm.

Van Buren Co.

S. H. M.

A description and illustration of the Horse Nettle, together with advice regarding its eradication will be found on page two of this issue. Fortunately for Michigan farmers the Horse Nettle thrives better in a more torrid climate than prevails in our state. Our severe winters prove a severe handicap for this weed, and in our more northern sections where the ground seldom freezes deeply owing to protective snows, there is not a sufficiently long hot season for it to thrive at its best. However, there is no doubt that the weed is becoming increasingly common in Michigan, and that where it has become established it is one of the very worst weeds with which we have to deal. It is more or less troublesome in all crops and on all soils, but is worse on sandy or loose and friable soils that are easily penetrated by the root stocks, by means of which it spreads much the same as Canada thistles. In localities more favorable to its development ordinary cultivation only tends to stimulate its growth, and where it has become well established in our own state very persistent efforts will be required, and should in every case be made to get rid of it until it is exterminated.

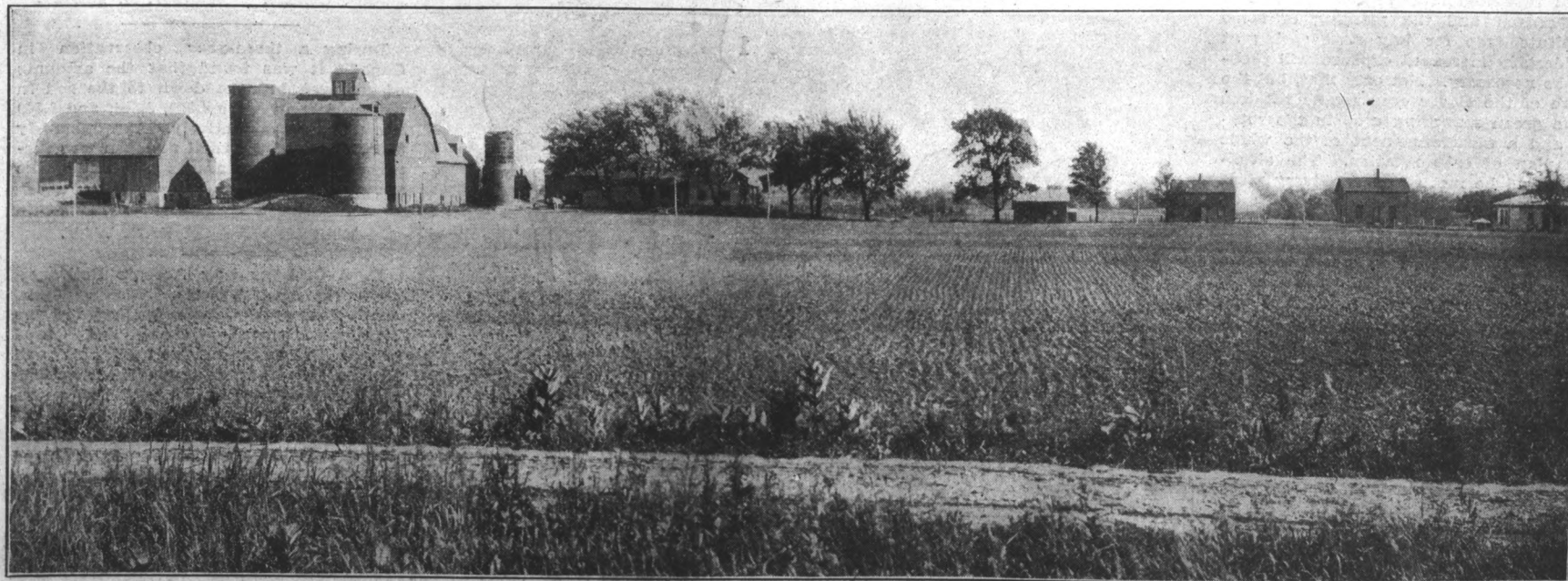
Clearing Marsh Land of Willows.

I have four acres of muck land in my pasture which, for the last three or four years, has grown up to willows and now it is almost a solid mass. Is there any time of the year I can cut them to kill them? Or what is the best way to destroy them?

Allegan Co.

L. L. W.

The writer knows of no method by which these willows could be successfully killed, except by grubbing or pulling them out. This can best be done with a team and men with mattocks during the mid-summer season, providing the muck land is wet in the spring and fall, as is probably the case, else the willows would not occupied it. Sprouting, unless oft repeated, will not kill them.



A Recently Taken View of "Lillie Farmstead" the Ottawa County Farm Home of Colon C. Lillie Showing the Main Barns at Left and Tenement Houses at Right.

SOIL EROSION.

The gullying of farm lands is becoming a serious matter in Michigan. In some sections of the state quite an area of land has become a useless waste on account of these washouts.

This erosion is caused by the cutting away of trees. After the forests are cleared on lands that exceed 10 per cent slope, cultivation does not go on long before erosion sets in. If this remains unchecked, the soil will soon be removed and fertility gone.

When lands are wooded they never gully because the foliage of the trees forms a storage place from which water drips slowly to the ground for a considerable time after each rain. Then the complex layer of brush, leaves, weeds, moss, and vines in varying stages of decay, becomes filled with moisture with each heavy rain and holds it for a considerable time. The surplus water so stored continues to be absorbed by the upper humus-filled layers of earth. The temperature is lower and the air is more humid in the forest than in the open and snow lies there much longer.

To the reasons already given must be added the mechanical power of the roots to go deep in the soil and break up the ground, thus forming channels for the ready entrance of water in the earth. Water is then stored in large quantities which filters through the soil and passes to great depths where it penetrates the rock strata and replenishes the great underground reservoirs from which it emerges later as springs.

To prevent the enlarging of gullies and prevent new erosions trees should be planted upon these slopes and brush dams built in the gullies.

In several states the state geologist has been instructed to make an investigation of the gullying of lands and the percentage of waste. This is evidence that it is coming to be considered a serious problem.

The illustration on first page shows one of the largest gullies in the state of Michigan, located seven miles northwest of Kalamazoo. It is one mile long and 60 feet deep and resembles a canyon. It shows, however, what all washouts will become in time if the erosion is not checked.

Calhoun Co. C. E. BARNES.

SEEDING STUBBLE FIELDS TO CLOVER.

I have a field of rye which I seeded this spring but lost the seeding. If I plow immediately after harvest and seed to clover would I be apt to get a catch? If so, could I cut it for hay next year? What kind of clover would be best, and should I sow anything with it? Land in fair condition.

Jackson Co. SUBSCRIBER.

Owing to the reported loss of the new clover seeding over wide areas as a result of the long drought, the United States Department of Agriculture has issued a press circular urging the farmers throughout the drought section to disk the stubble fields and reseed to clover as soon as the grain is drawn. The text of this circular follows:

"The clover and grass seed sown this spring in wheat, rye, and other grain, has been parched up and killed, either wholly or in part, on thousands of fields in the central western and northern states. This is a serious situation and calls for prompt attention. If the clover is not replanted it means no clover hay next season and the planting of some substitute crop for hay next spring at considerably increased expense will probably be necessary. Not only that, but the failure of the clover crop means the loss of the green manuring crop in the rotation and a disarrangement of the whole farm plan of crop rotation. The situation should be met at once. Every piece of new seeding should be examined and, if it has been burned up, steps taken to replant it at once.

"One of the best ways known to get a stand of clover is to disk the stubble field as soon as the grain is off, allowing the disk to run about three inches deep and working the stubble into the soil. The disking and cross disking should be sufficient to clean it of weeds and grass and put the top three inches of soil in fine tilth. Keep the ground cultivated until the first soaking rain, then sow about ten pounds of clover seed mixed with six to eight pounds of timothy per acre and harrow the seed in. A still better way than harrowing is to sow the grass seed with a grain drill, letting the seed run down the grain tubes from the grass seed box and covering the seed

from one to one and one-half inches deep. "By sowing clover and grass seed alone in this manner, without a nurse crop, it makes much more rapid and vigorous growth than when sown with grain. By disking the land also, a much better seed bed is made than could be obtained by plowing, since, when ground is plowed in dry weather it breaks up lumpy and lies up loose and is very difficult to work down into a compact seed bed such as is essential for the best results with clover and grass seed. In addition, the grain stubble worked into the top soil by disking seems to form a top mulch especially beneficial to clover.

"This method of seeding clover is becoming quite general in some of the middle eastern states where farmers over large sections are giving up the practice of spring seeding with grain because of frequent failure to catch and seeding alone after the grain is cut instead. By this method clover and grass seed may be sown in the central and western states as late as September 15, and still make a good stand that will not winter-kill, but in the extreme northern states the seeding should not be made later than August 15.

"To summarize, grass seedings in spring grain have been burned out on thousands of farms. Replant now by disking the stubble about three inches deep and sowing clover and grass seed alone without a nurse crop by August 15."

The much needed rains which have fallen in many sections will make this plan practicable. While the plan is not always successful, in seasons when there is a sufficient rainfall after the clover is seeded very good stands may be secured in this way. Compensation is one of the great laws of nature, and it is not likely that where the drought is now broken it will be succeeded by another severe summer drought. Of course, this cannot be known for a certainty, but the plan above outlined will be well worthy of a trial upon many farms this season.

In the writer's opinion, it would be better practice to disk the stubble ground thoroughly than to plow it, as a better seed bed could thus be provided for the

clover. If plowed, it would need to be repeatedly rolled and harrowed to get a firm seed bed, and this would take more time and delay the seeding to that extent.

SEEDING CLOVER IN CORN.

While the seeding of clover in standing corn is not satisfactory in the majority of seasons, there is occasionally a year where it can be done with success. A year like the present, when an early drought has killed the new seeding of clover is about the only time when the plan should be considered from an economic standpoint, but in such a season it may be expedient to vary the regular crop rotation and give the plan a trial. Where there has been one long drought early in the season, it is a reasonable supposition that an August or September drought is less likely to occur than where there has been an abundance of rain earlier in the season. Of course, this does not necessarily follow, but where there is no prospect for clover hay next year from the spring sowing, it will be profitable to have an eye out for favorable conditions for seeding clover in the corn field.

If there is an abundance of moisture in the corn field during the first two weeks in August, there is at least a fair prospect that there will be sufficient moisture for the germination and growth of clover if sown between the rows and lightly covered with a spike tooth cultivator. I have seen as good seedings result from such sowing as I ever saw, and the fact that the plan does not always succeed should not entirely condemn it for emergency use. Of course, if there is not a good supply of moisture when the seed is sown one runs the imminent risk of losing the seed and the labor of sowing it

But if conditions appear to be favorable at the time noted, and there is no other prospect for clover hay next year, it is, in my opinion a profitable venture to try this method of seeding. Some will argue that the corn stubble will interfere with the cutting of the hay and will injure its quality in any event, but if the plan is a success the corn can be cut low and the stubble rolled down in the spring. Anyhow, a good supply of clover hay, even if it has some corn stubble in it, is better than a snow bank for winter feed.

Oakland Co. A. R. FARMER.

THE IMPORTANCE OF PLOWING EARLY FOR WHEAT.

The truth of this topic is so often brought to the attention of Michigan Farmer readers that it is unnecessary to dwell long upon it. The difference in the moisture condition of the ground of soil plowed early, medium early, and late for corn has been quite forcibly brought to our attention this summer, as we have three fields so plowed. I have noticed that the early plowed ground seems to retain the moisture longer after a rain, which is probably due to the larger amount it has retained in the subsoil, and also that the corn has done better on this soil while the late plowed ground dries out more rapidly and the corn has not made as good growth on this.

The same is true of ground plowed in the summer, only more so since unplowed or unworked soil will dry out more rapidly through evaporation at this time of the year than in the spring. If the ground that is to be put to wheat following wheat or oats can be plowed soon after the crop is removed it will be in condition to absorb the rains and if harrowed after rains before the crust forms will retain much more of this moisture than if unharrowed or unplowed, hence the crop will have a better chance if the autumn is at all dry.

Calhoun Co. S. B. HARTMAN.

THE HORSE NETTLE.

I enclose a piece of weed plucked from a neighbor's field. He did not know the name or the nature of the weed, nor do I. Will you kindly tell us by way of the Michigan Farmer what is the name of it, and also is it a menace to the farmer who lets it grow on his place?

Allegan Co. SUBSCRIBER.

I enclose a letter from a man signing himself Subscriber of Michigan Farmer. As you will see by the letter, he requests that I identify the weed that he sent and answer him through your columns.

The weed is Horse Nettle, *Solanum carolinense*, one of the worst pests introduced in Michigan and is a native of the Atlantic sea board, and is now a bad weed over a large part of the country. Spreading by its underground parts, it has much the mode of life of the Canada thistle and can be exterminated in the same way, although it is sometimes more difficult to kill this than the Canada thistle. The principle of the treatment in both cases is to keep cutting off the shoots as fast as they appear above the ground and before they can make new food in the sunlight. This constant forcing of the roots to make new shoots without giving them a chance to replenish the food supply used up in this process, eventually leads to the death of the plant although it sometimes requires that a badly infested field be kept in constant cultivation one season and in hoed crops the next season.

Agri. College. ERNEST. A. BESSEY.

During a three-year observation in Canada it was found that the amounts of nitrogen brought down to the soil in rain and snow were 4.323, 8.364, and 6.869 lbs. per acre respectively. Approximately 85 per cent of the total nitrogen was furnished by the rain and 15 per cent by the snow.

WATER WAY OR RAIL WAY.

D. & C. Lake Line Accepts Railway Tickets.

All classes of tickets reading via the Michigan Central, Wabash and Grand Trunk Railways between Detroit and Buffalo in either direction are available for transportation on D. & C. Daily Line Steamers. This arrangement enables the traveler between eastern and western states to forsake the hot, dusty cars and enjoy the delights of a cool night's rest en route. Send stamp for booklet. Address

DETROIT & CLEVELAND NAVIGATION COMPANY,
6 Wayne Street, Detroit, Mich.



Horse Nettle. *Solanum carolinense*. 1, Plant in Flower. 2, Cluster of Fruit.
U. S. Department of Agriculture.

WHAT BRAND OF FERTILIZER TO USE.

I intend using fertilizer next fall on wheat ground. Would like to know what formula you would advise.

Lenawee Co.

A. O. H.

The best analysis of fertilizer to use depends upon the conditions, both of the soil and crop, and one can hardly recommend a particular formula without knowing more about the soil than is given in A. O. H.'s letter. Then again, one cannot always tell whether a sandy soil is deficient in potash or not or whether a clay soil has a good per cent of available phosphoric acid. The fact is, you have got to know the history of the soil, how it has been used, and the farmer must do some experimenting himself on his own soil and with different crops if he would find the most economical formula to be used in varied conditions.

Now, personally, on my soil, under my conditions for wheat this fall I would prefer to use the fertilizer analyzing 2:8:2. We want a little nitrogen to give the wheat plant a start. We need a little potash, although most Michigan soils have potash sufficient for wheat, but if we are going to seed this wheat to clover we will find use for the potash in the clover crop which follows. Phosphoric acid is undoubtedly the element most needed by all crops under all conditions in Michigan. But eight per cent of phosphoric acid to two per cent of ammonia and two per cent of potash is a pretty good formula. There is four times as much phosphoric acid as potash or ammonia. My judgment would be to use from 300 to 500 lbs. of 2:8:2 or any other brand having about the same proportion of ingredients.

COLON C. LILLIE.

SOME PRINCIPLES OF WEED CONTROL.

Weeds may be roughly divided into two classes: those which grow and spread entirely from seed, and those which, in addition to this, propagate by means of perennial roots or underground stems. The first class is made up largely of annuals, plants which start from seed, produce flowers and ripen seeds the same season, after which the whole parent plant dies. The pigweeds, tumbleweeds and mustard are examples of such weeds. They are best controlled by rooting them up when young, as in hoeing, cultivating, pulling by hand and, in some cases, by chemical sprays. To prevent their going to seed is the principal thing.

In the second class are found the Canada thistle, and field morning glory. Such plants, when once established, are very persistent and constitute our worst weed pests. When cut off or pulled up, new sprouts soon appear from the underground parts, while cultivation in the ordinary way often serves to scatter pieces of the plant to other parts of the field where they may take root. The only remedy consists in digging out and removing every part of the plant, in choking it out by means of some stronger growing crop plant, such as alfalfa, or by starving the underground parts of the plant. The last method is accomplished most frequently by careful and constant hand hoeing and pulling, on small areas, supplemented by thorough cultivation on large areas. To be effective this method requires that every sprout which comes above the surface be cut off, or pulled, or otherwise destroyed.

The food for such plants is manufactured in the leaves that come to the light, hence if every sprout is cut off before the leaves have time to get to work, it is merely a question of one or two seasons until the underground parts are no longer able to put up new sprouts.

Anything that kills the foliage will also accomplish the same thing. Unfortunately most of these plants are not greatly injured by chemicals other than those that are poisonous also to animal life.

Turning the infested area into a sheep or hog pasture for two or three years, especially if the animals are somewhat crowded, has been found effective in some cases, such as land infested with the field morning glory.

In any case persistent, thorough work is necessary to success in eradicating weed pests of this character, and the best time to begin is just as soon as the weed is discovered and before it covers large areas.

Col. Agri. Col. B. O. LONGYEAR.

Western packers have slaughtered from March 1 to latest accounts, 10,470,000 hogs, a gain of 2,955,000 compared with a year ago. The number packed for the same time two years ago was 9,230,000 hogs.



Make Something: Save Something.

You can do both by using and selling the **A. A. C. Fertilizers** which are wheat makers and soil builders and need no argument to sell the second year, for the crops they produce are their best advertisement. Wherever they are introduced, a permanent demand is established. Farmers find them the most profitable to use and agents for that reason find them the most satisfactory to sell. Write us for prices and terms.

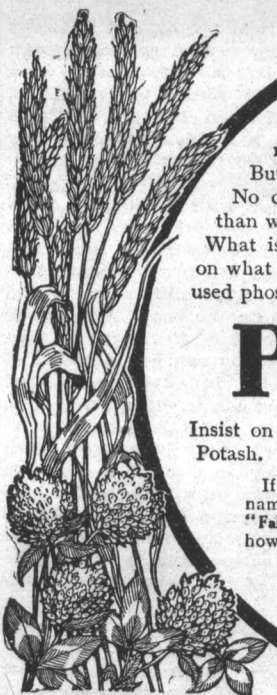
While the supply lasts, we will furnish this season A Banner Dissolved Bone, fine ground and perfectly dry, guaranteed to analyze not less than **34% Available Phosphoric Acid**. The actual analysis is about 36% Available. This Fertilizer is produced entirely from high grade animal bone, and is considered to be the best form of Phosphoric Acid for fertilizing wheat.

We want agents where we are not now represented. Write us today for your home territory and particulars.

The American Agricultural Chemical Company

Detroit Sales Department, DETROIT, MICH.

LARGEST MANUFACTURERS OF HIGH GRADE FERTILIZERS IN THE WORLD



Wheat and Clover

Many farmers stick to wheat raising mainly because clover follows it in the rotation.

But why not get the best possible out of both crops? No crop returns better profit for the right fertilizer than wheat.

What is the right fertilizer? That depends on the soil and on what fertilizer you have used on it. The longer you have used phosphate the sooner it will pay you to balance it with

POTASH

Insist on your wheat fertilizer containing 6 to 8 per cent. of Potash. **Potash Pays** on both wheat and clover.

If your dealer does not carry Potash, write us for prices, naming quantity needed, and ask for our free books, "Fall Fertilizers" and "Home Mixing." They will show you how to save money and increase profits.

GERMAN KALI WORKS, Inc.

Baltimore: Continental Bldg.
Chicago: Monadnock Block
New Orleans: Whitney Central Bank Bldg.

LIGHTNING

Safeguard your home. The **DODD SYSTEM** of protection is the standard. Only system endorsed by 2000 Insurance companies. Lowers Insurance rates. Agents wanted. Fine, large Lightning Book with vivid lightning scenes, free. Address

DODD & STRUTHERS, 429 6th Ave., Des Moines, Ia.

BONDS

Accepted by U. S. Gov't as security for

Postal Savings Bank Deposits

are the only class we offer. Instead of the 2% the Postal Banks pay these

Bonds will yield from **4 1/2% to 4 3/4%**

Write for FREE Circular.

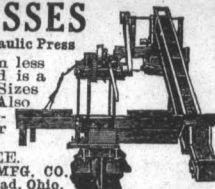
New First Nat'l Bank, Dept. Z-1 Columbus, O.

CIDER PRESSES

The Original Mt. Gilead Hydraulic Press

produces more cider from less apples than any other and is a **BIG MONEY MAKER**. Sizes 10 to 400 barrels daily. Also cider evaporators, apple butter cookers, vinegar generators, etc.

CATALOGUE FREE.
THE HYDRAULIC PRESS MFG. CO.
131 Lincoln Ave., Mt. Gilead, Ohio.



MELILOTUS

The choicest and one of the best soil restorers known. We have a fine lot of seed that we can retail at less than ordinary wholesale prices. Our seed is hulled, yellow blossom. **GUARANTEED TO GROW**. This plant is also a splendid preparation for alfalfa.

ALFALFA All northern grown, guaranteed to be 99 per cent pure and free from dodder. Write for free sample.

THE WING SEED COMPANY
BOX 842 MECHANICSBURG, OHIO

BINDER

Attachment with Corn Harvester cuts and throws in piles on harvester or winrows. Man and horse cuts and shocks equal with a Corn Binder. Sold in every state. Price \$20 with Binder Attachment. S. C. MONTGOMERY, of Texline, Tex., writes: "The harvester has proven all you claim for it. With the assistance of one man cut and bound over 100 acres of Corn, Kaffir Corn and Maize last year." Testimonials and catalog free, showing pictures of harvester. **NEW PROCESS MFG. CO., Salina, Kan.**

CHOICE SEED WHEAT.

Goen and Mealy varieties.

Goen wheat is a wonderfully hardy, productive red wheat; stiff straw, bearded, and one of the best all around wheats I ever grew.

Mealy wheat is also a red wheat but it is the bald variety. It is a most excellent wheat for very rich ground. **COLON C. LILLIE, Coopersville, Mich.**

CONCRETE IN THE COUNTRY.

A book of 114 pages, fully illustrated, showing how to use cement on the farm, furnished free on application by **PENINSULAR PORTLAND CEMENT CO., Jackson, Mich.** Manufacturers of High-grade Cement.

Please mention the Michigan Farmer when you are writing to advertisers.

THE DAIRY

CONDUCTED BY COLON C. LILLIE.

THE DAIRY BARN.

Selecting a proper location for the barn is the first consideration in building. The proper healthfulness of the site chosen is a very important point as the health of the animals depends to a large extent upon the conditions surrounding the barn.

As dry a spot as possible should be selected as the cows will be more healthy in a dry atmosphere than a moist one. It has been said, and it is a fact, that the healthfulness of a location diminishes as the amount of soil moisture increases. That being true it is essential to select a spot that has good underground drainage as well as having a slope which will provide surface drainage.

Underground drainage depends upon the character of the soil. A loose gravelly soil drains more readily and will be drier. It will also be a less favorable place for the breeding of bacteria and consequently will be more healthful. A clay soil retains moisture longest and will be damp, and in some cases unhealthy.

The dairy barn needs sunshine. As is well known, sunshine is the greatest destroyer of bacteria in the world. Trees are all right at some distance from the barn to protect the building and yards from the wind but there is no building where shade is so harmful as it is to a dairy barn.

In order to get the greatest benefit from the sunshine the section of the barn containing the cows should stand north and south, being wide enough to accommodate two rows of cows. In each wall, the east and the west sides, two rows of windows are to be constructed. The lower row on the east will light the stalls on the side next to it during the forenoon and the upper row will throw light to the line of cows on the west side. In the afternoon the stalls will be lighted in the same manner from the windows on the west side. A southern slope permits more sunshine to fall on the barn and yards and makes them more sanitary.

An underground or basement barn should never be constructed for dairy cows. True enough, it is a little cooler in summer and somewhat warmer in winter. But it is always damp. The sunshine never gets as good a chance at it. The basement barns have proven themselves to be about the worst style of a barn that could be constructed for increasing tuberculosis in cows. The writer recalls to mind a certain dairy barn in the state of Wisconsin where, out of 40 cows kept in a basement barn all but two were condemned for tuberculosis.

The dairy barn and its location should harmonize with the other farm buildings. To have the buildings arranged with some degree of artistic taste is a source of pride to the owner, an inspiration to his family, and an excellent advertisement for his farm. Convenience with the other farm buildings is also important, as very much time may be saved in the distribution of feed and in the general labor of the place if the buildings are properly grouped with relation to each other.

Little Details that Become Big Factors in Getting Results.

Convenience within the barn itself is a big factor in saving labor and in securing effective results from labor expended in the barn. Suppose that the services of three men are required in a barn. If each wastes ten minutes of time every day because of some unhandy arrangement, they will waste a total of more than eighteen days during a year. The writer was looking at a new dairy barn not long ago that in most respects was very good. Indeed, it was almost ideal in some. Yet it had the feed bins at one end and the two silos at the other. The plan in the barn was to throw down silage from the silo in the afternoon some time before feeding. Then, when feeding twice per day it meant that a man would walk the length of the barn and back three times per day, which meant 600 feet each day. Granting that they fed silage eight months, or 240 days each year, a man would walk, unnecessarily, 144,000 feet in a year on that account. Reduced to miles it would mean a 28-mile hike across a cement floor at a time when a man is usually tired and when he really has no time to spare. This case is given, not so much to indi-

cate the best location for a silo, but to emphasize the need for convenience in arrangement.

Ceilings in the cow barn should be about eight feet above the floor. Lower than that is apt to provide insufficient ventilation and if higher the barn is apt to be cold. As a general practice it is not advisable to store hay or straw above the cows, the objections being that chaff is continually falling into the milk pails, that ventilation is hindered, and that the hay becomes saturated with gases from the cows. Those objections are all very sound it is true. However, if the ceiling is made of grooved boards carefully placed together, and if plenty of ventilating shafts are provided, little harm will come from those sources.

The writer, as mentioned above, strongly prefers the barn which stands north and south and has two rows of cow stalls. With three or more rows of stalls the interior rows do not get a sufficient amount of fresh air and sunshine. With only one row of stalls the extra labor made necessary more than offsets the small gain made thereby.

To have the cows face outward has several distinct advantages. Only one litter carrier is needed, which will pass between the two gutters. Thus the two sides may be cleaned at one trip of the carrier. Or, if preferred, the manure spreader may be driven through. A wagon containing bedding may be driven through and the bedding distributed in a fraction of the time it would take to carry it along were the stalls arranged the other way. Then, any splashing that may be done from the gutters will fall on the central alleyway instead of on the walls. This system is a little more convenient when milking, especially where machines are to be used.

Floors and Interior Furnishings.

What about material for the floor? For the central alleyway, the feed way and the gutters, cement is certainly the most sanitary. For the stalls cement is apt to be too cold and damp. That is due to the fact that cement is one of the most rapid conductors of heat known. For that reason it very rapidly takes away heat from the part of the body touching it and produces chilling and even rheumatism in the cows. The mangers may well be of cement, made in one continuous trough the full length of the row of stalls. Iron divisions for this trough, that can be raised or lowered, will partition it off at feeding time. Such a manger can be swept out and used for a watering trough as well as for feeding.

Each individual stall should be about four-and-one-half feet in length from the manger to the gutter. Three-and-a-half feet is about the proper width. Both length and width of stalls vary somewhat according to the kind of cows that are to be kept. Jerseys will require less space than Holsteins or Shorthorns, for instance. Gutters should be 14 or 16 inches in width and with seven feet between them in a double row barn. Each alleyway should be about four feet and the mangers two feet in width. A few new barns have the floors of the feeding alleys raised to a level with the top of the mangers, which are about 16 inches deep. Having the floors raised in this way makes it a little easier to feed hay and when the cow drops a little hay on the outer edge of the manger it does not fall out of her reach, as is the case otherwise. This feature is not common but is certainly worthy of consideration.

The interior furnishings of the barn should be as plain and as sanitary as possible. Stall hangers and partitions should be of iron, as that material will furnish a minimum amount of space for the harboring of bacteria. Swinging stanchions will be about the most comfortable to the cows and the most convenient to the men, of all styles of fastenings.

Warmth and Ventilation.

The dairy barn should be made warm and comfortable. The dairy cow is thin-skinned and has but little fat stored in her body. For that reason she needs more protection from the cold of winter. When a cow has to use her body as a source of heat it not only decreases her milk secretion to the extent that it removes materials that should have gone into the milk but decreases her bodily vigor and reduces her milk secreting tendencies.

Fresh air must be provided. For that either of two systems may be used. One is a simple window inlet, with central shafts leading to small cupolas on the roof for outlets. A simple way of arranging the windows and one which avoids drafts is to put hinges on the low-

er edge of the upper section of the window. Then a triangular tin or piece of board is put up at either end of the sash in such a way that when the sash is opened the triangular pieces keep wind from entering at the ends and the sash itself keeps it from blowing straight in. The outlet chute should commence within a foot of the floor. A chute two feet square is generally considered sufficient for twenty cows. If it is so desired the chutes may be made telescope fashion so that they may be raised or lowered. This is a convenient arrangement when driving through the barn or in summer when the cows are kept in only a part of the time.

The other system of ventilation is the well known King system. It differs from that described in that the intake is different. The outlet being the same, the outside inlet is near the ground. From there the air passes upward through a 4x10-inch passage and enters the room near the ceiling. Upon entering the room it forces the impure air downward and up and out through the chutes. An objection frequently raised to the King system is that it depends upon the air within the stable being warmed by the animals' bodies sufficiently to cause it to rise. In extremely cold weather that is accomplished so slowly that the air becomes impure before it is warmed enough to cause the air to change.

We have yet to consider separator room and feed room. Suffice it to say that the feed room should be partitioned off from the main barn; also the separator room, as the stable gases are apt to contaminate the milk if this is not done. It is a good plan to have double doors between the barn and milk room if it is not entirely detached. Plenty of good pure water should be piped into the barn and used generously in keeping the barn clean, as well as in supplying cooling draughts for the cows.

Iowa.

H. E. MCCARTNEY.

COTTONSEED VS. OIL MEAL.

In your reply to a former feeding query you leave it optional with the feeder whether he uses cottonseed meal, oil meal or gluten feed. Are their feeding properties the same? I have been told that the action of cottonseed meal and oil meal on animals was exactly opposite, the oil meal being a laxative and the cottonseed meal a mild astringent. Also, that cottonseed meal contains double the protein of oil meal.

Of course, in furnishing milk for a condensing plant what we desire most is quantity. Most any cow will furnish milk of the required richness.

St. Joseph Co.

R. A. W.

The statement is correct that cottonseed meal is slightly constipating in effect and oil meal slightly laxative. However, the properties of these feeds are not strong enough in either one to make very much difference when fed in connection with other feed. Where one feeds clover hay and corn silage it would be hardly possible to notice the constipating effect of cottonseed meal and, in fact, you can feed oil meal, although it is slightly laxative, with clover hay and cottonseed meal and not have it injurious to the cow. I know of a good dairyman who feeds oil meal almost entirely as a grain ration. He feeds, for roughage, clover hay and corn silage. He gets splendid results and does not have any injurious effects so far as can be ascertained.

I left it optional with these three feeds because usually the difference in price at which they can be bought is such that, being based upon the protein content of each, it makes little difference to the dairyman which one he buys. Cottonseed meal is the richest of the three in protein and usually you can buy a pound of digestible protein in cottonseed meal cheaper than you can in either one of the other foods. On the other hand, most people prefer oil meal because it does have a tendency to keep the digestive tract of the animal in a little better condition than the cottonseed meal. Gluten feed is becoming quite popular. It is the product of the corn starch factory or the sugar factory and is a wholesome, easily digested food.

The object of every dairyman, in compounding a ration, is to get one that will cause his cows to produce the largest yield of milk. That is what we are all after. We learned long ago that the ration has very little effect upon the richness of the milk. That rests almost entirely with the individuality of the cow. What we are after is a ration that will cause the cow to do her best, and different rations compounded from different foods will produce practically the same results. We have to take into considera-

Get a SHARPLES Tubular Cream Separator IN THE FIRST PLACE

Write to us for "Junk Pile Pictures." They will show you how rapidly disk-filled and cheap cream separators are being discarded for Sharple's.

Others have paid good money to learn that disks are not needed in a modern separator, and that cheap machines lose their cost in cream the first year.

Why should you pay for the same experience?

Sharple's Dairy Tubulars are built in the only known way which overcomes the many parts and faults of others. Patented. Cannot be imitated. No disks. Twice the skimming force of others. Skim faster and twice as clean. Wear a lifetime. Guaranteed forever by America's oldest and world's biggest separator concern. Repeatedly pay for themselves by saving what others lose.

These are the reasons why you will never be satisfied with any other—why you will finally have a Tubular—why you should get a Tubular in the first place.

Free trial of the quality separator. The World's Best—without spending one cent.

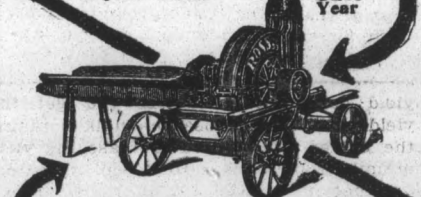
Other separators taken in exchange for Sharple's. Write for catalog No. 152.



THE SHARPLES SEPARATOR CO.
WEST CHESTER, PA.
Chicago, Ill., San Francisco, Cal., Portland, Ore.
Toronto, Can., Winnipeg, Can.

Fill Your Silo First Pay Afterwards

We want to prove to you that our machines are a good investment before you give up your money. We know they are so good that we do not feel it a risk to make this offer. Just tell us your needs.



ROSS SILO FILLING MACHINERY

has 61 years' experience behind it—more experience than any other machinery of its kind made. It has thousands of enthusiastic owners in every dairy and intensive farming district in the U. S. It is not only

FULLY GUARANTEED

to be free from defects all times but also to be the strongest, most durable and modern of any manufactured. Our offer will help you to determine this before you buy. Ask an expert's advice if you care to.

Our large free catalog shows our complete line. Write for it.
E. W. ROSS CO. Box 14 Springfield, Ohio
We also manufacture the Ross Silo

Shoo-Fly THE ANIMALS' FRIEND

Keeps flies and all insects and pests off animals—in barn or pasture—longer than any imitation. Used and endorsed since 1885 by leading dairy-men and farmers.

\$1 worth saves \$20.00 in milk and flesh on each cow in a single season. Cures sores, stops itching and prevents infection. Nothing better for galls. Kills lice and mites in poultry houses.

SEND \$1, if your dealer can't supply you, for enough Shoo-Fly to protect 200 cows, and our 8-tube gravity sprayer without extra charge. Money back if not satisfactory. Write for Booklet, free. Special terms to agents.

Shoo-Fly Mfg. Co., Dept. H 1310 N. 10th St., Philada.

Editor knows from experience that Shoo-Fly is O. K.

Everlasting Tile Silo

Made of Best Ohio Clay. Hard Burnt, Salt Glazed—Never Need Painting—No Repairs.

CHEAP, durable, indestructible. Different sizes. Simple in construction; absolutely air tight and sanitary. We have worked for years to complete every detail before putting it on the market. Write us for prices and further information.

National Fire Proofing Co.
Room C, Canton, Ohio.

Dowagiac Drills & Seeders Are the Leaders

THERE ARE MANY REASONS WHY DOWAGIAC MANUFACTURING CO. DOWAGIAC MICH.

MENTION the Michigan Farmer when writing to our advertisers.

tion the economy of the ration, and of course, the proper proportion of the protein and the carbohydrates, and if we can get a proper ration with cottonseed meal cheaper than we can with oil meal, then it would be good policy to feed cottonseed meal instead of the oil meal with the gluten. If he proportions his grain correctly and gives the desired amount of dry matter and the proper amount of protein and carbohydrates, he will get practically the same results, and so the dairyman will be governed almost entirely by the cost of the ration, which would depend largely upon the market price of these ingredients. In other words, you would feed a cow for butter-fat the same ration that you would for a larger milk yield. You can't get the

pose of him. I replied that I should never dispose of him. I shall keep him until he dies, and then I expect to have his hide tanned with the hair on and use the hide as a rug in the house.

I am aware that some people ruin young bulls. They buy a calf and before he gets to be a year old they allow him so much service that he is practically ruined. Then, again, a great many bulls are not kept properly. They are confined too much. You take a young bull and tie him up by the nose in a dark box stall and keep him there year in and year out and I have no doubt that his health will be impaired before he has developed his three important characteristics. A bull ought to have exercise. He ought not to be confined. Where it

three feet square extending from this little room to the top of the silo over the door—just large enough so that a man can climb up and down on a ladder easily and have room to throw down the silage into what we might call the ensilage room.

The foundation of the silo on the inside wants to be, if possible, of exactly the same diameter as the stave part so that there will be no obstruction to the settling of the ensilage. I do not think the silo will shrink enough so that there will be any danger of its being smaller than the foundation. If it did it could be opened up a little and another stave put in, but I do not think this would be necessary. I would not paint the silo on the inside or tar it; simply paint it on the outside, and this is more for looks than anything else. Of course, the silo shrinks when it is empty. Sometimes the hoops have to be tightened a little bit so that it will not weave and work too much in the wind, but as soon as the moist corn is put into it again the wood absorbs the moisture from the corn and swells, making the silo tight. One has to be careful in tightening up the hoops so as not to tighten them too much, or else he must loosen them again just before filling the silo.

There will be absolutely no damage below the water line, providing, of course, that you plastered it up on the inside with good rich cement mortar and fine sharp sand so as to keep out the water. You can go down into the ground as deep as you want to with the silo if you only plaster it properly on the inside, just as you would a cistern. On the Probert farm, at Jackson, the silo pits are entirely in the ground, or nearly so, extending down into the ground 15 or 20 feet and these are properly cemented. The ensilage keeps perfectly and the water does not come through. The foundation of a silo ought to go down into the ground two or three feet so as to get below the frost line, because if the ground beneath the foundation freezes and then thaws it will heave and affect the foundation.

The best kind of a roof for a silo, as I have described in The Farmer a number of times, is a flat roof made by putting 2x10's across the center of the silo three feet apart, leaving a continuous space entirely across the silo. Then, at the ends and the edge put a 2x8, a 2x6 and a 2x4. Nail on matched lumber and saw it off round around the edges to fit the silo. You can put on any kind of tarred roofing. Now nail the 2x6 on top of the 2x10's that you put in the center and then make a cap, to go over these, of the matched lumber. When you fill the silo take off this cap. You have a doorway into which to poke the nose of the ensilage cutter and when you fill the silo you can fill it without bumping your head, fill it full and actually walk right on top of the silo. Then this cap can be put in place and hooked down or tacked down with nails. It can be removed again next year when you want to fill the silo. If this roof is simply made out of matched lumber and kept painted it will last indefinitely and will shed water sufficiently well. It isn't necessary to put on the felt roofing.

The shortage of hay and pasturage has impelled the Washington Agricultural Department to issue a circular addressed to the farmers of the United States urging them to plant immediately emergency crops, such as millet, cow peas, sorghum and soy beans.

is possible in the summer time he ought to have a pasture. Grain ought to be taken away from him and this can be done, and even in winter he ought not to be confined in a box stall but allowed a yard in which he can take some exercise. He should not be kept in too warm a stable. Have the door to the bull stand open and let him pass in and out as he chooses day and night, no matter if it is cold weather; he will take care of himself if he can only have exercise, and he will live longer and keep healthier than if confined.

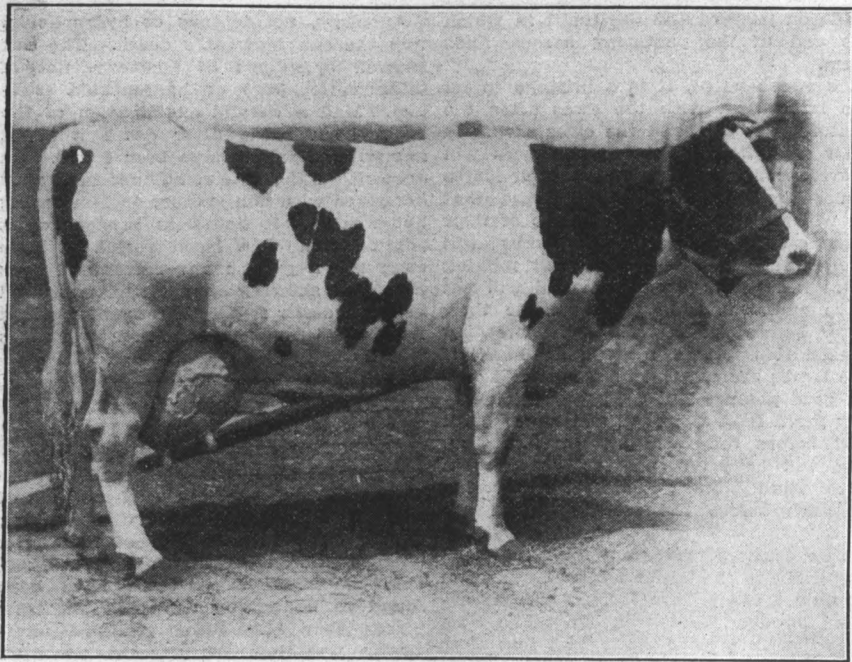
PROPER DISTANCE OF SILO FROM BARN.

In building a stave silo, how far should it be built from the barn, and how wide should the chute be? How much smaller should the foundation be than the silo? Would the silo shrink if painted outside and properly tarred on the inside, as much as one not painted or tarred, or one painted on outside only? Will silage keep better if the edges of the staves are painted as silo is erected? What would be the damage to the silage if the bottom of the pit was below the water line, in the spring, on low land? Should the pit necessarily extend below the frost line? If not, will the foundation heave and settle? What is the best roof for a silo, not considering price alone but the longevity of roof?

Calhoun Co.

J. E. M.

As a rule most silos are built too close to the barn to be handy. It is an excellent thing to have them built far enough away so that you could build a little room between the bottom of the silo and the barn, to be used as a storage place for the ensilage cutter, or for the accumulation of enough ensilage to last for the morning feed. In this way you can throw it down in the afternoon for the evening and morning feed in cold weather. Of course, this will not do in real hot weather, because, when it is exposed to the air in real hot weather it will spoil, but it can be done in winter. I have one silo that was built so close to the barn that it is absolutely unhandy in this respect, and another one that is built about the proper distance from it. I would say, build it eight or 10 feet from the barn and then on the ground connect it with a building six or seven feet wide. Put a good cement bottom in this as well as in the silo and you will not regret it. You will find it an extremely handy room. Of course, the ensilage chute proper need not be so large as this; what you want is a chute about



Four-year-old Holstein-Friesian Cow, Daisy Grace DeKol.

Under official tests this cow produced 521.3 lbs. of 4.99 per cent milk in seven days, 2,284.6 lbs. of 4.39 per cent milk in 30 days, 4,804.5 lbs. of 4.05 per cent milk in 60 days and 7,104.8 lbs. of 3.97 per cent milk in 90 days. She claims the distinction of having produced more butter (32½ lbs.) in 7 days than any other cow of her age, and her 60 and 90-day yields are world's records for a junior four-year-old or younger cow. This valuable animal is the property of Dan Dimmick & Bro., of Ohio.

yield of butter-fat unless you get the yield of milk, because the milk contains the butter-fat. If you increase the yield of milk you increase the yield of butter-fat, not by having a milk richer in per cent of fat but by getting a larger quantity.

BEST AGE FOR SERVICE BULL.

Is a bull that has been properly treated and well cared for until four years of age as valuable for service as when he was 18 months old? In other words, is his stock as good?

Ingham Co.

H. W. S.

If the bull is properly taken care of, providing he is healthy and sound constitutionally, he ought to be in better condition and ought to be more vigorous at four years of age than he is at one year or 18 months. Many a bull has lived to be 10 or 12 or 15 years of age and was vigorous during his entire life. Some of the best bulls of every breed have lived to be of that age. As a matter of fact, you do not know the value of a bull until he is four years old. There is no way of judging accurately the value of a dairy sire until his heifers mature as cows. That would be when they are two years old, and this will make the bull four years old. A man would be foolish indeed, after he had paid a good price for a promising sire, a good individual, and one well bred, to dispose of him before his heifers became cows, because that is the only accurate way in which you can judge the bull. We want individuality, we want performance in ancestry or a good pedigree, but above all we want a sire that will transmit these desirable qualities to his female offspring, and how can we tell about this until the heifers are old enough so that we can judge them at the milk pail. Therefore, no promising dairy sire ought to be disposed of until after he is four years old. Then, if he does not prove to be what one desires, the sooner he is disposed of the better. On the other hand, if he does prove to be a valuable sire the longer you can keep him the better for your herd.

I have in my own herd at the present time one service bull that is nearly 14 years old and he is apparently as vigorous and gets just as vigorous calves as he did when he was a year old. I have kept him because he has proven his worth as a sire. A neighbor asked me a short time ago when I was going to dis-

Please mention the Michigan Farmer when writing to advertisers.

SOWING WHEAT BETWEEN CORN ROWS.

It surely pays to sow wheat between rows of standing corn under certain conditions. Suppose that the corn is late in maturing, the farmer can go on with his seeding and get his crop in the ground in ample time by using a Superior one-horse five disc or five hoe drill. These drills are made in the following styles: Five Disc Plain Grain and Combined Grain and Fertilizer styles, also Five Hoe in same styles. Grass seed attachments can be furnished for any of these drills. These one-horse machines have the same style feeds as on large size Superior Grain Drills. They are fully and unreservedly guaranteed by the makers, The American Seeding-Machine Co., Incorporated, Springfield, Ohio. Write for the Superior catalogue and if you are contemplating the purchase of a drill of this kind go to your implement dealer and insist on seeing the Superior. Remember, "The name tells a true story."

\$15⁹⁵
**AND UP-
WARD**

**AMERICAN
SEPARATOR**

SENT ON TRIAL, FULLY
GUARANTEED. A new, well
made, easy running separator for
\$15.95. Skims hot or cold milk;
heavy or light cream. Different
from this picture which illus-
trates our large capacity ma-
chines. The bowl is a sanitary
marvel, easily cleaned. Whether
dairy is large or small, obtain our
handsome free catalog. Address

AMERICAN SEPARATOR CO. Box 1061
BAINBRIDGE, N.Y.

THE PAPEC

**BLOWS
AND
THROWS**

Here's the only blower ensilage
cutter that can be depended upon to
do good work under all conditions.

**PAPEC PNEUMATIC ENSILAGE
CUTTER**

Cuts and elevates silage with less
power than any other cutter. Easy
to set up and operate; no wood to
twist and warp; elevates over 50 feet
without clogging. Write for booklet,
"How to Prepare Ensilage," FREE.

PAPEC MACHINE CO., Box 50, Shortsville, N. Y.

Distributing Points:
Toledo, Ohio. Columbus, Ohio,
Indianapolis, Indiana.

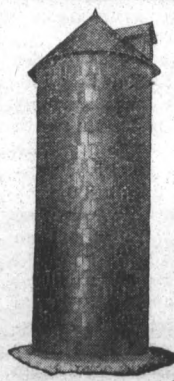
SAVE MONEY
BUY NOW
INDIANA SILOS!

Don't lose money through delay. If
you wait another year you lose the price
of the silo. Shortcrops mean high priced
feed. We can deliver promptly from our
factories at Anderson, Ind., Des Moines,
Ia., and Kansas City, Mo. Liberal terms.
Write for Catalog and our new book,
"Silo Profits." Sent free on request.

INDIANA SILO COMPANY
382 Union Building, Anderson, Indiana

Before you buy a Cream Separator
See and try a **DE LAVAL**
AND YOU WILL USE NO OTHER

THE DE LAVAL SEPARATOR CO.
NEW YORK CHICAGO SAN FRANCISCO SEATTLE MONTREAL WINNIPEG



Every advance step in the world's history has at first been met with more or less opposition [and hostility]. But true merit always wins and for this reason

The Imperishable Silo

soon wins against all competition. It makes friends and enthusiastic advocates wherever it is introduced. Being built of PATENTED HOLLOW BLOCKS OF GLAZE DVITRIFIED CLAY, a material that lasts always, it wins immediate favor over the decaying, shrinking, tottering, storm tossed stave silo and being IMPERVIOUS to MOISTURE it keeps the silage perfectly clear up to the wall and is therefore superior to any form of cement. Our silo is not a cement silo. The IMPERISHABLE is strong, needs no paint outside or coating inside. Simply ideal. Ask for our free booklet.

THE IMPERISHABLE SILO CO.,
HUNTINGTON, INDIANA.

LIVE STOCK

BREEDERS' PROBLEMS.

The Best Type of Horses for Farmers to Breed.

There is a great deal in all the farm papers about the large breeds of horses, but I see very little concerning the small stock and driving horses. Is there a distinct breed called the Morgan? If so, can you describe it and give general prices and where they can be purchased? And if you can, also give the names of other breeds of this class. The large horses are the thing for large farms and heavy work but for a small farm or for driving something smaller is more satisfactory.

Isabella Co.

SUBSCRIBER.

There is a distinct breed or strain of horses, of purely American origin, known as the Morgan. This strain of blood is traceable to a single ancestor, Justin Morgan, foaled in Vermont in 1793. The breeding of this horse is a matter of dispute. Various pedigrees have been assigned to him, but there is now a quite generally accepted belief that he carried a large proportion of Thoroughbred blood. Be that as it may, he was a phenomenal horse, both in individual characteristics and prepotency. He was small, but of astonishing strength, stamina, style and courage, and these characteristics were passed on through his get to many future generations with unusual constancy. The Morgan type may be briefly described as short of leg, thick and round of body with great courage, docility and a high order of horse intelligence. They possessed good style and action, were fast walkers, good roaders and possessed the strength and courage required to pull a much heavier load than most horses of much greater weight. In fact, it was claimed that Justin Morgan could walk faster, trot faster, run faster and pull a heavier load than any horse which was entered against him in the many local utility contests in which he was entered. The Morgan type so generally possessed these useful characteristics that it became exceedingly popular for road and general farm use. This great popularity of the type caused a correspondingly great diffusion of the Morgan blood in that of the common stock of the country, but so great was the prepotency of the strain that the general characteristics above noted were transmitted for many generations where but a fraction of the blood was possessed. Thus the type became widely distributed throughout the older sections of the country and was familiar to many people. It was a favorite type with many, as with the writer, who for many years drove a team of horses carrying a fair infusion of Morgan blood and possessing the characteristics of the type to a marked degree. These horses were bred and died on the farm, and retained their strength and vigor to an advanced age. One of them was chloroformed at the age of 35 and the other was killed by a bolt of lightning when he was 36 years old.

But this very diffusion of the Morgan blood, and the importation and development of special purpose types of horses within the past half century, brought about the decadence of the Morgan horse. While traces of the blood are to be found in some of the fastest trotters and a measure of it is to be found in the American gaited saddle horse, the breed or strain has been almost sacrificed in the furnishing of stamina and endurance for the foundation stock for these types and for the common horse stock of the country. However, at the present time an effort is being made to restore the breed to its original excellence and popularity. A Morgan stud book is maintained and government aid has been extended to attempt its rehabilitation. The best specimens of the breed to be found have been purchased by the government and these animals are being mated under government supervision. There are also several private breeding establishments devoted to similar work, and there are a number of good stallions carrying considerable Morgan blood and possessing the characteristics of the breed to a marked degree scattered throughout the country. Owing to their scarcity, however, and to the present demand for good individuals carrying Morgan blood, these are not easy to obtain at the present time.

Whether attempts to bring the Morgan horse back to his former status in this country will be successful, however, is a matter of doubt. Modern conditions demand a heavier class of horses for farm work and the special purpose draft breeds

and their grades have largely supplanted this smaller type of horses on the farms of the country. Even the larger general purpose breeds, such as the coachers and the Cleveland Bays, have been unable to gain and retain public favor in comparison with the Percherons, for instance, on the farms of the country, while the great development of the American Trotter has displaced the more general purpose Morgan type for the road, and the Hackney, which is of the strong general purpose type where not bred for extreme action, has not attained great popularity except as a show horse. It is to be hoped, however, that the attempt may prove successful, for there is certainly a very useful place upon our farms for a medium sized, general purpose horse of this type.

At present, however, the farmer who would breed horses of this type can do no better than to mix the available draft and trotting blood or resort to the breeding of coachers to supply his needs in this respect, although this line of breeding, especially the mixing of breeds, is unsatisfactory in a majority of cases, and does not offer the remuneration in the market value of the produce which will be found in the breeding of drafters and expressers by the use of draft stallions on the common or grade farm mares, the product of which mating is also a more valuable animal for heavy farm work. In fact, under existing conditions, it is probably the cheaper and more satisfactory way for the farmer with a small area of land who keeps only one team and needs horses of a general purpose type, to buy them in the open market, rather than to attempt to produce them by the crossing of breeds and take the chance of producing misfit animals which will not satisfy his needs and which will have small market value.

FEEDERS' PROBLEMS.

Weaning the Pigs.

My spring pigs, now about four months old, are still nursing the sow. Is it right or wrong to allow it?

Lapeer Co.

M. A. C.

It is poor practice to let the pigs suckle the dam for so long a period, for several reasons. First, it is bad for the sow, especially if an immature animal, since the pigs continue to be a heavy drain on her system, precluding all possibility of getting two litters a year and stopping the growth of the sow or preventing her recuperation from the strain of maternity. It is also bad for the pigs, since under average conditions the pigs will not get enough of the right kind of food to eat when they are fed with the sow and perhaps with other hogs under these conditions. For best results with the pigs they should have supplementary feeding after they are three or four weeks old and while still running with the sow. This can be provided in a trough placed in a small pen or yard to which the sow cannot gain access, and a little sweet skim-milk and middlings, with perhaps a little molasses and some ground oats with the hulls sifted out. But little will be needed at a time, but in this manner the pigs can be taught to eat early in life and when weaned at the age of eight, or at the latest, ten weeks, they will go right on growing without any setback from the weaning period. Then the sow will recuperate quickly after weaning, and may be bred again for a second litter if desired.

Without question, it pays to give the young pigs the best of care and feed during the first few months of their lives, since the early gains are the cheapest gains they ever make. But if the best results are to be secured they must be fed in properly assorted bunches and upon the proper kind of feed. If they are left to rustle for a share of the feed fed to them in common with the older and stronger hogs they will fare badly, as, unless the feeding is exceptionally liberal and suitable for the pigs they will be handicapped in the eating race, and will be badly mauled besides.

Weaning the Lambs.

Too many sheep owners delay the weaning of the lambs long after this important factor of flock management should have attention. For best results the early lambs should be weaned in July and turned into some fresh succulent pasture. If summer forage has been provided by sowing rape for the purpose, this will be an easy matter, but if no such provision has been made they should be turned into the meadows after haying until some other feed is available. This is bad for the meadows, but it is essential that the lambs have good feed after weaning if they are to make a profitable

growth and reach an early maturity. If no other provision has been made for supplementary feed, some early sown rye will help out in the solution of the problem within a few weeks and will prove a profitable investment. If there is no other place to sow it, sow it in the corn at the last cultivation and turn the lambs into the corn field after it has attained sufficient growth to afford them good grazing. They will do little if any injury to the corn until the ears are approaching maturity, by which time other pastures will have made a fresh growth. Of course, no set rule can be laid down for the providing of suitable feed for the lambs after weaning, but a determined effort should be made to provide it, since the profit in the lamb crop depends to no small degree on the growth the lambs make on pasture and the thrift in which the end of the pasturing season finds them.

As above noted, it is a mistake to let the lambs run with the ewes after the pastures get poor and the ewes shrink in their milk flow. Most of the ewes will provide little nourishment for their lambs under these conditions, and those that do will provide it at the expense of their own condition. Thus the lambs will grow unevenly and the deepest milking ewes will become very thin and will not have sufficient time to recuperate their vigor before the arrival of the breeding season this fall. On the other hand, if the lambs are weaned in season and given good pasture and a little supplementary grain feed, the ewes will have "dried up" before the fresh pasture starts up and will have an opportunity to regain their vitality and get a needed covering of flesh before the mating season arrives.

Few farmers make a practice of feeding grain to the lambs while they are on pasture. We believe it is a safe assertion, however, that grain can at no time be fed with greater profit than just after weaning. If the early lambs were properly started they should have learned to eat grain before being turned to pasture, and will readily take to it after weaning. But if they have not yet learned to eat grain, a little time and patience on the part of the feeder will soon learn them the habit and they will soon all be eating. Heavy feeding is not required, but a light feed of bran and oats or oats with a little oil meal will provide them with needed nourishment and they will go right on growing without seriously missing the milk ration which is abruptly cut off at weaning. Good water should, of course, always be available, and with good pasture and a moderate supplementary grain ration the lambs will make a surprising growth at a fraction of the cost of the gains which will be made later on dry feed.

APOPLEXY THE CAUSE OF CALF'S DEATH.

I was lately visiting at a place where a strange thing occurred which no one present could explain, all saying they never saw anything of the kind before. Much inquiry as to what it was has been made but as yet no one can answer, so we present the case to the Michigan Farmer and would like to know the nature of the trouble and the remedy.

A calf, some five or six months old, was in the barnyard and when seen, a few minutes before the occurrence, was lying close to the side of the barn, sound asleep. A few minutes later it was heard to give a series of strange bellowings and, on going to see what was the trouble, the calf was found whirling around and around and apparently suffering from strangling. It seemed as though it had a bone or some other obstruction in its throat, but all efforts to relieve it were fruitless as from the start its jaws were set so tightly they could not be opened. As it continued choking and nothing could be done to relieve it, it was killed rather than to witness its suffering longer. It was a very hot day and one advanced the opinion that it was overcome with heat, as it laid so close to the side of the barn where the sun beat with scorching rays.

Another said he read of a case a few days' since, where a cow had died whose actions were identically the same as those of the calf and it was pronounced hydrophobia, but it was contended there could be no such trouble without the animal being bitten by another animal suffering from rabies or hydrophobia.

The writer has thought perhaps the cause of the calf's death might have been tetanus, having recently read an interesting article on this disease in which the

writer said: "It has been stated by certain physicians that tetanus (lockjaw) is undoubtedly the true cause of death in the majority of instances where rabies has been the diagnosis." The writer of this article then proceeded to differentiate between the symptoms of the two diseases in a manner which prompted the above suggestion.

In the case of the calf above referred to, an examination of the throat was made after death, but nothing was found to cause choking.

The jaws, even before weath, were so firmly set it was impossible to open them. Any light on the subject will be gratefully received and may also be of help to others in case of like trouble.

Oceana Co. JENNIE M. WILLSON.

Apoplexy, not tetanus or hydrophobia, was the cause of calf's death. The calf showed symptoms of apoplexy, not of tetanus (lockjaw) or hydrophobia (rabies). Had a careful examination of the brain been made after death a slight hemorrhage would have been found. On account of the calf remaining in a very hot place with sun shining on him during hot weather, it doubtless brought on a slight lesion of a blood vessel. I have examined a great many calves and hogs that died showing similar symptoms and in most cases found that death resulted from apoplexy. Treatment in such cases will do little or no good.—Vet. Ed.

NEED FOR BETTER PASTURAGE MANAGEMENT.

A careful study has been made by the Department of Agriculture of methods of pasture management and of the resulting effects on the production of forage on pasture lands, especially in the New England states. The pastures have been found to be greatly denuded. In many places they have been rendered practically worthless for pasture purposes. The department believes that the principal causes of these conditions are that cattle are turned upon the pastures too early in the spring, and that too many cattle are kept on a given area. The grasses are thus enabled to make a vigorous growth and have no opportunity to store up energy in the fall of the year for growth in the spring. This treatment, long continued, has killed out most of the good pasture grass, and as a result weeds have taken its place. It is probable from the information obtained by the department that it would require 10 acres of average New England pasture to support one cow five months. The solution of this important problem is being sought in the experience of the relatively few farmers who have maintained their pastures in good condition. Experiments on certain points of pasture management have been recommended by the Bureau of Plant Industry to state experiment stations and it is believed that when tests and observations are undertaken much good will result.

Washington, D. C.

G. E. M.

DANGERS FROM BARLEY.

From the standpoint of food value, barley contains a trifle less nitrogenous or muscle building material than oats and a trifle more than corn.

Barley chop, when fed to growing and fattening pigs, usually combined with ground corn and milk, proves a very excellent feed.

Ground barley combined with other feed has been reported as excellent feed for the dairy cow.

To horses it is sometimes fed whole or ground, alone, or mixed with oats or wheat bran. While from a nutritive standpoint we must commend it, yet there is danger in feeding it to work horses.

If, through some cause, normal digestion, either in the stomach or large intestines, stops, an unnatural fermentation takes place. Gases are sometimes formed in the stomach which so distend that organ that rupture may take place before the veterinarian can use a stomach tube. Belching indicates that the stomach is greatly distended with gas. In the large intestines this same process may go on. Tapping to allow the escape of gas and drugs to stop the fermentation often does not act quickly enough. There is also another phase, and that is in the process of splitting up the food substances, (in addition to gas formed), which when absorbed poisons the tissues, weakens the heart, and death follows. The gases are likewise absorbed, and also do damage which may be irreparable.

Col. Agri. College.

B. F. KAUPP.

THE MAKING OF A STOCKMAN.

Many young men leave the farm to begin a business or professional career because they feel that there are few opportunities for them to gain any special recognition by living on the farm. However, that is not true. It seems to me, in looking over the careers of such men as Warfield, Gibson, Van Natta, Gentry, Lovejoy and others who have made a success of breeding live stock, that there are more and better chances for a bright young man to gain recognition on the farm, as a breeder of live stock, than in almost any other line of endeavor.

We are beginning to appreciate more and more the practical and useful, and that we can make it of account in our lives and education. The breeding and perpetuating of high-class animals and watching the operations of nature's mysterious forces from one generation to another renders the study of heredity the most fascinating and perplexing of human pursuits. It certainly is a great business; and we can hardly realize what a change has taken place in the past few years and what a change is taking place today in the way of improved live stock. I know that every talented young man has hopes of gaining recognition in some line of human endeavor, and I do not see why they would not just as soon go into the live stock business and gain this recognition as to fight against greater odds in the crowded business or professional world. There is abundant opportunity for one to use all his talents in the live stock business. The man who produces the best specimens of the animal kingdom, even though he wears the blouse of a herdsman, is brother to all the other artists since the world began. In selecting and mating the parents of some of their famous animals breeders have exercised mental faculties as great as were demanded of Sir Christopher Wren in designing St. Paul's Cathedral.

A Love for the Business Essential.

No permanent success can come from the live stock business unless a man has a love for the helpless creatures which an all-wise providence has placed under his care. The combining of the useful and the beautiful is a source of joy and inspiration and he is never more at home than when surrounded by the beautiful creatures that know him as their friend and master. If a young man contemplates going into the live stock business I would recommend him to get the best animals he can afford. You get the best results from the best foundation stock. The consumers of meat and animal products are demanding higher quality. The only way to meet their demands is to keep pure-bred stock.

Now, if a young man is going to start in the pure-bred live stock business, what is the best thing for him to do? I should say the first thing he ought to do is to study the demands of the trade and fix in his mind the kind of animals the trade demands. Agricultural colleges will teach him what the very best breeds are, and what are the very best individuals of their breed. A visit to the large fairs and live stock expositions will give him further opportunity to study the best breeds and types. At these places he can see the best the country has to offer and broaden his views of the business. By the study of breeds and individuals at these places and discussing the various phases of the business with the leading exhibitors he will go home with new ideas and be better equipped to use good judgment in selecting foundation stock to begin with. Two factors should govern the selection of the breed; first, the breed that appeals most to his personal fancy, and, second, the demands of the trade he expects to supply with breeding animals.

High Ideals Are Important.

He should have a fixed idea of the shape and model of the animals he wishes to breed. The ideal always comes before the actual. The plan of the building is in the builder's mind and drawn out on paper before the building is commenced. The man is always greater than any of his works and he must have a clearly defined idea of what he wants before he can work to any good purpose. If a man does not have in his mind what an ideal animal is, he will secure it only by accident. So, when a man is going into the live stock business he must have his ideal, and he must purchase his animals in reference to that ideal. Do not expect to accomplish great results at the start and invest in fabulously high-priced animals until you are sure they are the ones for you to have. You must be sure that you can make

the business pay before it warrants too great an expenditure.

The men who have made the greatest success in the business of breeding live stock are not the men who have started with thousands of dollars. They have gone into it slowly, with the expectation of building up a profitable business. The young man of today has the experience of the older breeders to guide him. He can find out by attending the live stock meetings, reading and discussing the subject with the best breeders many of the valuable things they have learned by experience and hard knocks. It is a wonderful thing to think of, that the young man starting today, has the experience of generations gathered together and put in books to guide him in his business.

Location an Important Factor.

A careful study of his locality and markets will essentially aid a man in determining whether or not it will back him up in his business or not. It is a great advantage to be in a locality that is noted for the excellence of its live stock. In such a locality every man engages in a friendly rivalry to have the best of the class of animals he breeds and by having a large number of herds and flocks to select from they draw the best class of buyers from other localities. It is useless to deny the fact that the English system of improving the various breeds of live stock is in many ways more certain than our own, principally

ly to take place. It is a genuine pleasure to have one young animal grow and develop as he wished it to. It is the pure ecstasy that comes from playing the role of a prophet that leads him on to make a study of the future requirements of the breed he is working with and how best to meet them in years to come.

Originality Should Be Cultivated.

Success and fame are reached only through turning out a class of animals that possess individual merit which differentiates them from the great mass of animals of the breed to which they belong. It is the increased value of his stock as influenced by his individuality which forms the criterion by which the value of his work is measured. Success and fame do not always come from "creating lines of beauty," or establishing "points pleasing to the eye," but rather from breeding in a manner that will display his individual trademark which makes for the increase in value from a commercial point of view. There is abundant opportunity for every breeder to employ originality and to try and perpetuate the particular features that will add to the commercial value of his stock.

Well conditioned stock will attract buyers. There is nothing more disappointing to a man than to travel a long distance to visit a man's farm and find that he has been deceived in correspondence or to find the stock in poor



A 23-year-old Percheron Brood Mare and Her 18-month-old Colt, Weighing 1,100 lbs., Property of Mr. Lon Sixbury, of Branch County, Mich.

because each locality has its own breeds of horses, sheep and swine, that are grown and kept by the farmers in that particular locality. Thus, in time, they become better suited to the conditions under which they are grown and developed under less suitable environment. Not only is this much so, but it is also plain to the observer that where there are large numbers of animals grown in one section it affords the breeder a better selection of breeding animals and is also the means of attracting many of the most liberal buyers of that breed of stock from other localities. The buyers know where they can find a number of head that can be assembled at one place for shipment and are willing to pay more for them under these conditions than they would if they were all scattered around over a large territory. Thus it will be seen that friendly competition results in no harm to the man who is about to start into the live stock business.

Home Environments Should Be Good.

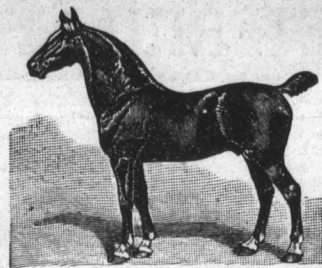
Now, there is another thing that seems to be of special importance to the young man who starts in the pure-blood business. He must not only be a man of education and culture so that he can talk and think intelligently, but he must keep his home and surroundings in good condition. When men come from a long distance to see him and his stock he begins to think that he is of some importance, and starts to improve and clean up his premises. He must fix up, he must make his home more attractive, because he must entertain his customers during their stay at his farm. Then, other people begin to think that he is of some importance and they begin to speak a good word for his stock.

If he is to become famous and have his stock much sought after he must not only be a judge, but a prophet, always keeping one eye on the present and the other looking far ahead into the uncertain future. It is a perennial source of joy and pleasure to follow the course of young animals growing up and anticipate in thought the developments that are like-

Obviously, breeding cannot be an easy business. Success means a tremendous amount of hard work, many failures and much disappointment. The foundation must be good to begin with, and if a mistake is made the way must be retraced to correct it and repair the damage. To the young man with a clear cut conviction of just what he wants and who is willing to stay with it until it is accomplished, the field of breeding purebred live stock offers as inviting inducements as any other business or profession that I know of.

New York.

W. MILTON KELLY.



WILL NOT SCAR OR BLEMISH.

GOMBAULT'S CAUSTIC BALSAM

is the safest and most effective lotion or blister for ailments of

HORSES and CATTLE

and supersedes all cautery or firing. It is prepared exclusively by J. E. Gombault, ex-Veterinary Surgeon to the French Government Stud.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable. Every bottle of Caustic Balsam sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

MINERAL HEAVE REMEDY

CURES HEAVES

NEGLECT Will Ruin Your Horse

Send to day for only PERMANENT CURE

\$3 PACKAGE will cure any case or money refunded.

\$1 PACKAGE cures ordinary cases. Postpaid on receipt of price. Agents Wanted. Write for descriptive booklet.

Mineral Heave Remedy Co., 483 Fourth Ave., Pittsburg, Pa.

NEWTON'S HEAVE COUGH, DISTEMPER CURE AND INDIGESTION

The first or second \$1.00 can cures Heaves. The third can is guaranteed to cure or money refunded.

THE STANDARD VETERINARY REMEDY. Makes the Horse Strong and Willing to Work. CURES HEAVES BY CORRECTING THE CAUSE which is Indigestion. Send for booklet "Horse Troubles." Explains fully about the Wind, Throat, Stomach and Blood. Newton's safe for colic, adulator mare in foal.

A GRAND CONDITIONER AND WORM EXPELLER \$1.00 a can at dealers, or express prepaid.

THE NEWTON REMEDY CO., Toledo, Ohio

Don't Cut Out A SHOE BOIL, CAPPED HOCK or BURSTITIS FOR ABSORBINE

Will remove them and leave no blisters. Cures any puff or swelling. Does not blister or remove the hair. Horse can be worked. \$2.00 per bottle delivered. Book 6 E free.

ABSORBINE, JR., Uniment for mankind. For Boils, Bruises, Old Sores, Swellings, Gout, Varicose Veins, Varicosties, Allays Pain. Price \$1 and \$2 a bottle at druggists or delivered. Will tell more if you write. Manufactured only by **W. F. YOUNG, P. O. Box 288 Temple St., Springfield, Mass.**

ELECTRIC Handy Wagon

Not the man-killer, horse-killer kind. Gives you the low lift instead of the high lift. The broad-tired steel wheels prevent rutting and make light draft. Over a hundred thousand farmers are using the Electric Handy Wagon—the best kind of wagon, the best of its kind. It carries all loads and stands up in all climates. Send for free catalog, and know the Handy Wagon that lasts your lifetime. Don't wait, send to-day.

ELECTRIC WHEEL CO., Box 35 Quincy, Ill.

LIGHTNING RODS 8½c PER FOOT

Best Quality Copper—Extra Heavy Cable. Don't do a thing about buying Lightning Rods until you get my Proposition. I have an entirely New Plan—a complete System direct to you with full instructions for installing. Easy to put up.

Buy Direct—On Trial—Freight Prepaid. System guaranteed satisfactory or your money back. Just write me a postal personally for our Proposition and FREE Catalog which makes every thing plain.

J. A. SCOTT, President

The J. A. Scott Company Dept. J. Detroit, Mich.

WHEN writing to advertisers just say "Saw your ad. in the Michigan Farmer."

VETERINARY

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

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

Bruised Stifle.—Have a three-months-old percheron colt with swollen stifle, causing slight lameness. This is a large growthy, active colt and I would like to know how to cure him. M. M. K., Alto, Mich.—Apply equal parts tincture iodine and spirits of camphor to bunch three times a week. A swelling of this kind is not easily reduced.

Foot and Mouth Disease.—Will you please give a description of foot and mouth disease and how to treat it? A. C. G., Decatur, Mich.—Foot and mouth disease is not prevailing in this country and if it did the government and state authorities would take steps to control it; therefore, you will never have occasion to treat a case of it.

Acute Indigestion—Colic.—Five-year-old mare is subject to attacks of spasmodic colic. She is a ravenous eater and following each attack she usually scours, therefore I would like to have you prescribe a preventive. W. S., Merrill, Mich.—A change of feed and watering before feeding grain, instead of soon after very often prevents indigestion and colic. Perhaps you are feeding too much grain to the mare when she is in a tired, exhausted condition. Give her 1 oz. ground ginger, 1 oz. bicarbonate soda and 1 oz. powdered charcoal at a dose in feed two or three times a day.

Fits.—Have nine white pigs which seem to have fits or spasms; they are fed skim-milk and swirl mornings, and mid-days at night. When feeding at night they suddenly begin to squeal, become perfectly stiff, falling down and remain for two or three minutes, then get up and commence eating again. Some of them will have as many as three spells at one feeding. Have another litter of seven Duroc Jerseys which are not affected; those that are affected are a cross between O. I. C. and Poland China. J. V. R., Dowagiac, Mich.—I am somewhat inclined to believe that your pigs choke by filling the throat too full of middlings or the food may be cold, producing a spasm of larynx. Warm their food and make it more liquid and I believe you will overcome this difficulty.

Sidebones.—I have a four-year-old mare that has never been broke, which is quite lame and sore in both fore feet. Our local Vet. tells me that her lameness is caused by sidebones. A. R., Albion, Mich.—If she is sore from sidebone, lower heels and apply one part red iodine mercury and four parts lard three times a month. This is perhaps the best remedy to check their growth; however, in some cases I fire.

Tape-worm.—I have a valuable pet lamb three months old that thrived for the first six weeks and grew rapidly, but since then he has stood still and is out of condition, acting at times as if in pain. G. W. W., Brighton, Mich.—Give 1 gr. powdered kamala to him for each pound or two he weighs, once a day for three days, following this dose two hours later with a teaspoonful of castor oil. If one dose produces the desired results, don't repeat. It is possible that by giving one-quarter grain doses of quinine three or four times a day, it will help him. You may not have been particular enough in his food supply and the cleaning of feeding utensils.

Ringbone.—I have a two-year-old colt that is troubled with ringbone. He seemed to be perfectly sound up to two months ago, since then he has shown some lameness in one leg. H. K. S., Sherman, Mich.—Keep the colt quiet and apply one part red iodine mercury and eight parts lard every few days, or as often as necessary to keep the parts blistered.

Hemorrhage from Nose.—Young mare had a hard fall which hurt her some. Was used carefully on binder a few days and appeared to be all right. Sweat freely without panting, then ran in pasture for three days; I then hitched her and after going eighty rods, held nose out, staggered and fell down, perspired freely and bled at the nose. What do you think the cause and is there a remedy? I might say this mare appears healthy. E. S. C., Homer, Mich.—I am inclined to believe her ailment is the result of hot weather and no doubt a small blood vessel in one nostril or throat or lungs opened and soon closed, therefore if you will give her good care and ten days' rest, she will perhaps be all right without any medicine. Her bowels should be kept open and her stomach not gorged with food when she is exerted and if she is very fleshy reduce her. By giving her 1 dr. ground nuxvomica at a dose in feed three times a day, it will help her.

Indigestion.—I have been watching the veterinary department of the Michigan Farmer for a similar case in pigs, and failing to find this information I would like to know what to do for three-month-old pigs that were weaned three weeks ago, which I feed ear corn and slop from the house, with a little milk added. These pigs are run down since weaning and appear to have stomach trouble. I have given them salts and lime water and disinfected the yard with lime. F. T. P.,

Gallen, Mich.—Give each pig 30 drops fluid extract gentian, 30 drops fluid extract cinchona and one drop nuxvomica at a dose three times a day. Also mix cooking soda and charcoal in their feed. I also suggest that you discontinue feeding them house slop for it may contain soap that is acting as a poison or irritating the stomach.

Lumpjaw.—I have a cow that has a large bunch on side of head under ear that has been gradually growing for the past three years, but lately it seems to be growing more rapidly than ever before, and I would like to know what to apply. J. N. Y., Albion, Mich.—Give her 2 drs. iodine potassium at a dose in feed or water three times a day and apply one part red iodine mercury and four parts lard to bunch once or twice a week. You had perhaps better discontinue using her for dairy purposes and fatten her.

Two Holes in One Teat.—I have a two-year-old heifer that just came fresh and there are two holes in one teat. The false opening is about three-quarters of an inch from bottom of teat and milk comes through it more easily than the proper opening. L. G. R., Onondaga, Mich.—Scarify and make raw edge of upper opening, stitch it with silk or linen, or close it with a steel sterilized pin, applying a string behind it, and use a milking tube when milking, or it may be left in until wound heals.

Vesicle Calculi.—I have a cow that strains for some time after passing water; sometimes the urine is followed by a bloody substance. She calved in December and is again due in January. Our local Vet. prescribed a teaspoonful of saltpeter twice a day, but she does not seem to improve under his treatment. F. E. F., Indian River, Mich.—Give her 2 drs. of urotropin or uritone at a dose in feed or water three times a day. Perhaps a change of feed of a less acid nature would relieve her.

Indigestion—Garget.—I have a two-year-old heifer fresh the 25th of last April, that usually gives six quarts of milk mornings and eight quarts evenings, but she is now giving only one quart in the morning and three pints in the evening. I have sprayed her with disinfectant to keep off flies all season. Her teats are sore and one-quarter of bag caked badly. I bathed bag with hot water and greased it with meat fryings from salt pork, rubbing under one hour at a time. I also have another cow that was sprayed and she has garget. C. W., Olivet, Mich.—The spraying of your cows did not injure them at all, but both udders are perhaps infected. Apply one part oxide of zinc and four parts vaseline to sores twice a day and apply iodine ointment to caked part of udder once a day. Give her 1 dr. iodine potassium and two tablespoonfuls cooking soda at a dose in feed night and morning.

Poisoned by Eating Herbs.—I have lost quite a few lambs lately and am unable to say what caused their death. None of them that have taken sick have recovered. They ran on an old sheep pasture that had been used for this purpose for several years up to July 1, then I changed to another, when they soon took sick and I would like to know what you believe caused their sickness and death. J. K., Ionia county, Mich.—Your lambs have either ate too much rich nutritious food, or infected food, or drank infected water, or ate poisonous herbs, or grass that caused their stomach and bowel trouble, terminating in death. As the whole trouble came on following a change of pasture I suggest that you shift them back to the same lot.

There has been a recent advance of 1¢ per pound in the ruling prices of cheese in the Chicago market, making one of the sharpest upward movements seen this season. The rise was brought about by the extremely hot weather, which has had a tendency to restrict the output, while consumption has been growing. Dealers state that the demand for cheese for immediate use has been so large that less than 25 per cent of the receipts have been going to cold storage warehouses. Reports from dairy districts have shown much higher prices.

Receipts of fat cows and heifers in western markets have fallen off a good deal of late, and the smaller offerings have helped to place prices on a higher level, but canners and cutters are still low in price, with plenty offered.

Word comes from Kansas City that many of the cattle received there recently from the southwest had the appearance of having been held for several weeks in the dry weather districts in the hope of getting rain.

Cattle exporters have been disappointed in the Canadian market this season, as the bulk of the fat beefs offered at Toronto were wanted for the home trade and for shipment to the Canadian north-western provinces. On a recent Monday 21 car loads of steers were bought in Toronto to ship to Winnipeg, and another consignment was taken to Vancouver. This outlet has made cattle sell higher in Toronto than in Chicago, and more cattle have been purchased in Toronto for Vancouver than for export. This has turned the export trade in the direction of Chicago.

The Pacific coast is short of beef cattle, and buyers have been going as far east as the Missouri river for supplies. Cattle are scarce west of "the river," and plentiful east of it. The same is true of stock cattle.

There is a big foreign demand for choice bacon, and it is stated that there would be exported to England if curers were able to supply plenty of the medium and light cuts that are usually called for. A Kansas stockman says that from Fort Worth, Texas, to Parsons, Kansas, there is no grass, and corn is gone, the result being the glutting of the Missouri river markets with thin, grassy cattle, which have to be sold at very low prices.

HARLEY-DAVIDSON

MR. FARMER

THOUSANDS of progressive farmers are buying Harley-Davidson Motorcycles this year. Buying them because they travel 10 miles for a cent, less than the wear and tear on their team and rig if they drive.

Buying them because they make any trip in one-fifth the time consumed driving.

Buying Harley-Davidsons because they have proven themselves to be the most economical machines made at any price.

The Harley-Davidson holds the World's record for economy besides innumerable speed records. It is the only machine which has ever been awarded a 1000+5 score and the diamond medal in an endurance contest.

Nearly one-third of all the motorcycles sold in America are Harley-Davidsons. Made and guaranteed by the largest exclusive motorcycle factory in the world. Send for literature.

HARLEY-DAVIDSON MOTOR CO.
MILWAUKEE, WIS. 848 L-ST.



HARRIS STEEL CHAIN HANGING WOODLINED STANCHIONS

AND SANITARY STEEL STALLS. Send for our catalog which shows photographs of some of the most up-to-date barns in the country. You will be convinced that we make the very best there is at the lowest price.

THE HARRIS MFG. COMPANY
316 Cleveland Ave., Salem, Ohio.

REG. PERCHERONS FOR SALE—1 stallion, 1 year old both grays. M. A. BRAY, Okemos, (Ingham Co.,) Mich.

A. S. WILCOX, JEROME, MICH.—Live Stock and Real Estate AUCTIONEER. Write for terms and dates.

BREEDERS' DIRECTORY.

CATTLE.

ABERDEEN-ANGUS.

Herd, consisting of Trojan Ericas, Blackbirds and Prides only, is headed by Egerton W. a Trojan Erica, by Black Woodlawn, sire of the Grand Champion steer and bull at the International in Chicago, Dec., 1910. He is assisted by Undulata Blackbird lto.

WOODCOTE STOCK FARM, Ionia, Mich.

GUERNSEY BULL CALF from A. R. ancestors Dropped December 20, 1910. ALLAN KELSEY, Lakeview, Michigan.

FOR SALE

Registered Holstein Bulls

Five to ten months old.

From the best heavy milk producing families.

Send for list.

BIGELOW'S HOLSTEIN FARM,
BREEDSVILLE, MICHIGAN.

TOP NOTCH HOLSTEINS

Top Notch registered young Holstein Bulls combining in themselves the blood of cows which now hold and have in the past held World's Records for milk and butter fat at fair prices.

MCPHERSON FARMS CO., Howell, Mich.

Holstein Friesian Cattle—BULL CALVES. Grandsons of Canary Mercedes. W. B. JONES, Oak Grove, Michigan.

HOLSTEIN-FRIESIAN Cattle and Duroc Jersey swine. Bull calves for sale from A. R. O. Cows. E. R. CORNELL, Howell, Michigan.

HOLSTEIN BULLS—1 with a 20 lb. Dam; A grand one at a low figure. Several fine ones at lower cost. LONG BEACH FARM, Augusta, Kalamazoo Co., Mich.

FOR SALE—Holstein Bull 2 years old \$25. Bull Calves 6 months to 1 year \$50 to \$100. Bred heifers \$150 to \$200. Oldest herd in Ind. Send for Photos and Pedigrees. W. C. JACKSON, 715 Rex St. South Bend, Ind.

HEREFORDS—Both sexes and all ages for sale. Also Poland-China hogs. ALLEN BROS. Paw Paw, Mich.

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

Register of Merit Jerseys. Official yearly lot of young bulls from dams with official records of 483 pounds and upwards of butter. T. F. MARSTON, Bay City, Michigan.

JERSEY BULLS—Reg. Ages from six months to maturity. Dams high producers. Prices right. W. E. SHELDON, Litchfield, Mich.

JERSEYS FOR SALE—A few choice heifers bred. A. NEWMAN, R. No. 1, Marlette, Michigan.

FOR SALE—Reg. St. Lambert Jerseys, Cows and Bulls from high producing stock. C. A. BRISTOL, Fenton, Michigan.

REGISTERED JERSEYS For Sale—Some combining the blood of St. Louis and Chicago World's Fair Champions by HERMAN HARMS, Reese, Mich.

LILLIE FARMSTEAD JERSEYS. HERD BULLS (Vidas Signal St. L. No. 58197. Jubilee's Foxhall, No. 82299.

Bull calves sired by these great bulls, and out of splendid dairy cows, many of them in test for register of merit. Also a few heifers and heifer calves for sale. Write for description and prices. Satisfaction guaranteed, or money refunded.

COLON C. LILLIE, Coopersville, Michigan.

DAIRY SHORTHORNS

of the Best Milking Families.
All milk weighed and records kept.
W. W. KNAPP, R. D. 4, Watervliet, Michigan.

SHEEP.

PARSONS' OXFORDS—these big, dark faced Rams will get larger and better lambs. Grade X, \$15; XX, \$20; XXX, \$25. I pay express charges. Order now for shipment later when needed of Michigan's largest breeder of good sheep. "PARSONS—the Sheep Man," Grand Ledge, Mich.

Oxford-Down Sheep and Polled Durham cattle for sale. J. A. De GARMO, Muir, Mich.

Oxford Down Sheep—Good Yearling Field Rams and ewes of all ages for sale. I. R. WATERBURY, Highland, Michigan.

PARSONS' POLLED DELAINE RAMS will increase the weight of wool and longevity of your flock. Grade X, \$15; grade XX, \$20; XXX, \$25. "PARSONS—the Sheep Man," Grand Ledge, Mich.

Reg. Rambouillets—I have 100 ewes, among them all of my youngest and best, also 85 ewe and ram lambs. Live 2 1/2 miles east of Morrice on G. T. Road. Address J. Q. A. COOK.

HOGS.

Durocs & Victorias—Growthy Spring Boars & Glits of choicest breeding from Prize Winners. M. T. STORV, R. 248, Lowell, Michigan.

BERKSHIRE PIGS combining the blood of the Longfellow families—the world's best breeding. Price \$15. C. D. WOODBURY, Lansing, Michigan.

Berkshires—Ten glits bred to the wonderful Duke Pontiac Chief, to farrow in April or May. No better breeding. C. S. Bartlett, Pontiac, Mich.

BERKSHIRES—Registered boar pigs, excellent individuals, breeding unsurpassed. Price \$15. C. C. COREY, New Haven, Mich.

TWO Berkshire Glits, sired by Handsome Prince 3. Bred for Aug. farrowing, will sell at \$40 & \$45 also a few spring pigs left. A. A. PATLLUO, Deckerville, Mich.

DAMS EROS, Litchfield, Mich., breeders of Imp. Chester White and Tamworth swine, service boars, sows bred or open, of either breed. Shorthorn Cattle, Buff Rock, Buff Wyan-dotte, W. Orpington. Chks. all breeding stock, leading winners.

O. I. C. Swine—Bred glits, males weighing from 150 to 250 lbs. Price and type right. Geo. P. Andrews, Danville, Ingham Co., Mich.

O. I. C.—March pigs with quality and best pedigree. Order now and get first choice. C. J. THOMPSON, Rockford, Michigan.

O. I. C's For Sale—Best quality, large growthy type, either sex, pairs not akin, some fine bred glits, choice lot of fall pigs all ages. OTTO B. SCHULZE, Nashville, Michigan.

CHESTER WHITES—Sold out but still in the business of raising Chesters and Holstein cattle. Both Phones. W. O. WILSON, Okemos, Mich.

O. I. C's Bred sows all sold. 93 choice Mar. & April farrowed pigs either sex pairs not akin Reg. in buyers name. Fred Nickel, R. No. 1, Monroe, Mich.

O. I. C. March Pigs and Sows to farrow Aug. & Sept. H. W. CLARK, R. F. D. 4, Brighton, Michigan.

O. I. C's—All ages, 25 young and 2 yearling sows, safe in pig. Price for ashort time \$22 to \$30. H. H. JUMP, Munith, Michigan.

O. I. C.—Choice registered pigs 8 to 16 weeks old, from World's Fair Winners. Glenwood Stock Farm, Zeeland, Mich. (Phone 84.)

O. I. C. Choice Spring Pigs, either sex. Pairs not got first choice. All pigs shipped on approval and Reg. free. HARRY T. CHANDELL, CASS CITY, MICH.

O. I. C. SWINE—My herd is chiefly strain both males and females. Get my price before you buy. Will register free of charge in purchaser's name. A. J. GORDEN, R. No. 2, Dorris, Michigan.

DUROC-JERSEYS—Bred Glits and spring pigs for sale. CAREY U. EDMONDS, Eastlans, Michigan.

FOR SALE—DUROC-JERSEY bred sows, pigs and Shepherd pups. Express prepaid. J. H. BANGHART, Lansing, Mich.

WALNUT HILL DUDOCs—17 fancy sows bred to Mich. Col. for August and Sept. farrow. 155 spring pigs, both sexes, priced right. Write or come. J. C. BARNEY, COLDWATER, MICHIGAN.



Write JOHN W. GOODWINE, Marlette, Michigan, for prices on ten and twelve weeks old

HAMPSHIRE PIGS.

LARGE TYPE P. C. Largest in Mich. Sept. & Oct. L pigs weigh 250 to 300 lbs. Sired by two largest boars and from largest sows in State. Come and see and be convinced. W. E. LIVINGSTON, Farma, Mich.

POLAND-CHINAS—Booking orders for spring pigs. WOOD & SONS, Salline, Michigan.

Poland-Chinas—A few big type Sept. Glits bred for Sept. farrow. Also spring pigs. E. D. BISHOP, Route 38, Lake Odessa, Mich.

Spring Pigs either sex. Fall sows, September farrow. Write L. W. BARNES & Son, Byron, Shiawassee Co., Mich.

Three Extra Good Fall P. C. Boars By Next In Line. 32 spring male pigs ready to ship. I ship C. O. D. and furnish pedigree promptly. If you want good as the best, write me for prices.

WM. WAFFLE, Coldwater, Michigan.

Butler's Famous Wonders—The big Poland-China, without a peer, combining size, bone, quality. We're headquarters for everything in Poland-Chinas. Herd boars, brood sows, weanling pigs, always for sale. Registered Jersey Bulls of all ages for sale, our prices are low. J. C. Butler, Portland, Mich. Bell Phone.

BIG TYPE POLAND CHINA BOARS, also fall and early spring pigs. B. P. Rock eggs \$1.00 per 15. ROBERT NEVE, Pierson, Michigan.

FOR SALE PURE YORKSHIRE PIGS. Both sexes. Price reasonable. MURRAY-WATERMAN CO., ANN ARBOR, MICH.

Lillie Farmstead Yorkshires—Holywell Manor and Oak Lodge blood predominates. Large Herd. Three service boars. Pairs and trios, not akin. Boars ready for service. A fine lot of spring pigs. Glits bred for August farrow. The best hog on earth. Satisfaction guaranteed. COLON C. LILLIE, Coopersville, Mich.

Don't Fail to mention the Michigan Farmer when you are writing to advertisers.

POULTRY AND BEES

ABOUT SELLING FOWLS—SOME OBSERVATIONS AND EXPERIENCE.

As the moulting season approaches and the period of decreased egg production naturally follows, it is a good time to "weed out" the flock. By this I do not necessarily mean selling all the old hens and keeping pullets only, but getting rid of the least desirable ones. There are lots of year-old or even two-year-old hens that will have more good laying days during the coming winter than some of the pullets.

But I care not how carefully a flock of hens may be selected or bred up, they can be "evened up," and it adds greatly to the appearance and value of the flock. The first prices in the fall are usually the best of the season, and in every flock there are hens that it will hardly pay to keep long for the few remaining eggs they will produce.

Right here I wish to say a word about the "square deal" in marketing fowls. I do not know what there is about poultry buying that is morally demoralizing. You cannot compare it in any way to "sheep herding" unless the herding of innocent sellers at a certain hour at a certain congested point, with the cars backing up and the engines shrieking, making the unfamiliar farm horses very restive and their owners in a great hurry to get away with their lives and little money, bears a resemblance to the herding of innocent sheep. The fact remains, however, that there are few "deals" in which petty "nigging" is so general as in the buying of fowls. Whether it is because the deal is so small individually that the seller would rather lose than "start something," even though he realized he was being beaten, or because of the ignorance of the seller as to the real weight of his fowls—it is probably a little of both, also the confusion before spoken of.

However, it is the way the deal is carried on in too many instances and what makes it easier is that the buyers are usually strangers, very often operating only once at a given point. Smooth spoken and of good address, they drive around the country offering an attractive

ters" once upon a time where the conditions were ideal for the "hold up." The passage to the weighing point was lined on both sides by elevators and railroad cars, terminating in a narrow passage permitting nobody to turn back without passing through the "mill." Here the buyer picked out just what he pleased at just such weights as he pleased to give. Anyone daring to raise his voice in protest was ridiculed or abused, or both, according to the way the buyer sized up his man. I sized up the situation and happened to be so situated that I could drive over the tracks between two freight cars, and thus escaped. I returned the man the small advance payment he had made and gave my reasons. He threatened me with financial ruin, and I told him to go ahead.

This is no isolated case, by any means, and improved facilities are still needed in many country localities for handling the chicken deal. Where local buyers do not pay a fair price, and the outside buyer is not giving a square deal, it is perfectly practicable to ship your own stuff, making sure that you ship to a reputable jobber. A good plan is to write to a number of firms for quotations and ask for references. Then write to the people referred to, enclosing stamped envelope, doing this some time before you are ready to sell. Remember that the business end of poultry raising is as important as the production of the right kind of fowls.

Isabella Co.

Wm. J. COOPER.

WHERE TO PLACE THE BEES.

There are many things to consider in locating bees upon the average farm. Not only must the place meet the requirements of the bees as nearly as possible, but the convenience and safety of the owner, his family and neighbors must be thought of. Bees located too near the buildings, or close to a public highway, may prove a nuisance and drive their owner to abandon bee-keeping in disgust.

To get the full benefit of their help in fertilizing fruit blossoms it stands to reason that they should be conveniently near the orchard and small-fruit garden. It is seldom that a better place is found than an old orchard that is no longer cultivated and whose trees furnish abundant protection from the sun in hot weather. In this state where farm woodlots

found on the premises and moving the hives to it during the dormant season.

The situation chosen should be clear of obstructions which would in any way interfere with the mowing of grass and weeds. Tall grass and weeds about the hives harass the bees when returning home with their loads of nectar and interfere with the circulation of air about the hives. Those who attend to the bees during the busy season find their work lighter and more congenial if the ground about the hives is smooth and the grass is kept short. In orchard or woodlot apiaries the clearing away of all brush and undergrowth at the beginning of the season is recommended to the bee owner who would escape the little annoyances incident to encountering such obstructions during the period when time is precious and patience is at a premium.

THE MIGHTY LITTLE MITE.

The story of the mite may seem somewhat stale, but during warm weather we are all apt to become more or less negligent, and before we know it the very little mite is getting in his work. And again, there are each year recruits to the poultry business who must learn these things, making it necessary to repeat important work in the poultry yard many times.

The mite is not only mighty little, but he is also mighty destructive, making it necessary that we watch him closely. Last season I had 200 White Wyandotte chicks in colony houses. During the early summer we were all very busy with the farm work and the colony houses were not cleaned as often as they should have been. Late in July I noticed that the youngest chicks were not doing so well as they should; their feathers became rough and they had a scrawny appearance generally. An investigation was started and we were not a little surprised to find one colony house literally alive with mites.

We decided to exterminate those pests at once. The first job was to thoroughly clean the houses. The perches were removed and then thoroughly painted or saturated with kerosene; the whole interior of each colony house was given the same treatment. The third day thereafter the same treatment was given again and repeated every few days. The mites were soon destroyed but the application was repeated occasionally to make sure they should not return. In a few days I could see that the chicks were on the gain again.

The present season has been very favorable to the multiplication of mites, being very warm and dry, and where there is filth they are almost sure to abound. I have found that mites and lice do not trouble much where thorough cleanliness prevails; at least, it goes a long way in keeping rid of them and disease as well.

This year, with 300 chicks in colony houses, we determined there should be no mites to work disaster to the young stock. Believing that prevention is better than cure, I purchased a hand spray pump and, each time after cleaning the houses we sprayed them with kerosene emulsion. This emulsion is easily made and does the work well. The houses are entirely free from the pests. A little disinfectant is a good thing. Whitewash, containing a little crude carbolic acid, will do the work, as will many of the preparations on the market. This work is done early enough in the day so the houses dry out before the chicks enter them for the night.

Gratiot Co.

F. W. BROOKE.

The old-established bee-keeper desires at least enough swarms to make up for colonies lost during the winter, while the beginner is anxious to increase the number of his colonies by this means. In no case, however, should the owner of an apiary strive to more than double his colonies in any one year. It is better to have fewer colonies and have them all extremely strong. Feeding for winter, except in extremely poor seasons, will not then be necessary. Neither does it pay to extract all honey and feed syrup to sustain the bees during winter.

Wax moths are frequently blamed for the death of colonies, whereas they do no damage to strong, healthy colonies, properly cared for, but enter only when the colony is weakened by queenlessness, lack of stores, disease, or some other cause. In the majority of reports of wax-moth depredations received by the Bureau of Entomology at Washington, it has been found that the trouble is actually an outbreak of a brood disease.

FALSE HUNGER

A Symptom of Stomach Trouble Corrected by Good Food.

There is, with some forms of stomach trouble, an abnormal craving for food which is frequently mistaken for a "good appetite." A lady teacher writes from Carthage, Mo., to explain how with good food she dealt with this sort of hurtful hunger.

"I have taught school for fifteen years, and up to nine years ago had good, average health. Nine years ago, however, my health began to fail, and continued to grow worse steadily, in spite of doctor's prescriptions, and everything I could do. During all this time my appetite continued good, only the more I ate the more I wanted to eat—I was always hungry.

"The first symptoms of my breakdown were a distressing nervousness and a loss of flesh. The nervousness grew so bad that finally it amounted to actual prostration. Then came stomach troubles, which were very painful, constipation which brought on piles, dyspepsia and severe nervous headaches.

"The doctors seemed powerless to help me, said I was overworked, and at last urged me to give up teaching, if I wished to save my life.

"But this I could not do. I kept on at it as well as I could, each day growing more wretched, my will-power alone keeping me up, till at last a good angel suggested that I try a diet of Grape-Nuts food, and from that day to this I have found it delicious always appetizing and satisfying.

"I owe my restoration to health to Grape-Nuts. My weight has returned and for more than two years I have been free from the nervousness, constipation, piles, headaches, and all the ailments that used to punish me so, and have been able to work freely and easily." Name given by Postum Co., Battle Creek, Mich. Read the little book, "The Road to Wellville," in pkgs. "There's a Reason."

Ever read the above letter? A new one appears from time to time. They are genuine, true, and full of human interest.

DO YOU WANT WORK?

WE have absolutely the best proposition to offer those who can give all or part of their time to us. To those who can give all of their time we pay a liberal salary and expenses. For those who can give only part of their time we have the most attractive commission and rebate proposition ever offered. Teachers and Students can earn a large salary during vacations. The work is pleasant and instructive. Write at once for full particulars. Addressing BOX F, care MICHIGAN FARMER, Detroit, Mich.

PATENT SECURED OR FEE RETURNED. Free Patent Book. Selling Guide and List of Buyers and Manufacturers of Inventions. Advice Free. Send sketch FARNHAM & SUES, Attys., 540 F. St., Washington, D.C.

"EGGMAKERS"—S. C. Brown Leghorns. Get first choice of male birds now. \$1 up. Write me. W. S. Cooper, Mt. Pleasant, Mich.

White Leghorns—Rose or single comb cockerels. Rose Comb eggs \$1 to \$2 per 15. Ray J. Graham, R. F. D. No. 1, Flint, Mich.

LILLIE FARMSTEAD POULTRY B. P. Rocks, R. I. Reds, W. Wyandottes and S. C. W. Leghorn eggs for sale. 15 for \$1; 26 for \$1.50; 50 for \$2.50. COLON C. LILLIE, Coopersville, Mich.

EGGS: EGGS: EGGS—White & Buff Orpington, White & Barred Rocks, Black & White Minorcas, White & Buff Leghorns, Rose & Single Comb Reds, Houdans & White Crested Black Polish. H. H. King, Willis, Mich.

THOROUGHbred S. C. BROWN LEGHORN EGGS at \$1.00 per 15 or \$5.00 per 100. Stock all sold. LEWIS T. OPPENLANDER, R. No. 4, Lansing, Mich.

R. C. B. Leghorn Cockerels—Kulp strain, the best there is, \$1 to \$3. Eggs in season. C. W. WAITE, Gobleville, Michigan.

SINGLE COMB BLACK MINORCAS—A few more "pull-ets to spare. Eggs \$1.50 per setting. R. W. MILLS, Saline, Michigan.

SILVER, GOLDEN and WHITE WYANDOTTES. Eggs \$1.50 per 15; \$2.50 per 30. A few White Roosters left, circular free. C. W. Browning, Portland, Mich.

FOR SALE—S. C. and R. C. Rhode Island Red Eggs. 15 for \$1.00; 50 for \$2.75; 100 for \$5. BUELL BROS., Ann Arbor, Mich.

WHITE WYANDOTTES—Useful and beautiful. The kind that weighs, lays and pays. A. FRANKLIN SMITH, Ann Arbor, Mich.

DOGS.

NOW WRITE W. J. ROSS, Rochester, Mich., for those beautiful sable and white and tricolor Collie Puppies. Finest breeding, natural workers.

Twenty-five Hound Pups. All bred from the best of trained Coon hunting parents, send stamp. W. E. LECKY, Holmesville, Ohio

ALWAYS mention the MICHIGAN FARMER when you are writing to advertisers.



A Well Kept Apiary Located in a Farm Woodlot.

price—very often higher than the local buyer, if there happens to be one. If the price is above what the market warrants it must be made good somehow, and it is a fact that where there is one "kicker" who will stand out for his simple rights there are ten who will stand and be swindled.

Now by this I don't wish it thought that all local dealers are "square" or that all transient buyers are rascals, because it is a mighty good thing that "outsiders" come into the markets and make the local buyers "get right," and it is usually the points where local buyers have abused their exclusive market that attract outside buyers, for of course, it is the large margin that makes the rascal's opportunity. The farmers have a grievance all right, and the outsider makes an attractive price, getting, as a result, about all the fowls lying around loose at this particular point. The buyer then goes to new fields and the local press "hollers" about the "easy Rube" and preaches patronage of home buyers, etc., when it is partly the local buyer's fault.

I participated in one of these "slaugh-

are numerous it is not uncommon to find the orchard so located as to have the protection of the woodlot as a windbreak, and where such conditions exist there is no better place for the bees than in the edge of such a woodlot adjoining the orchard. Such a location is almost ideal, affording as it does natural shade in summer and the necessary protection from strong winds in winter. However, where it is not feasible to place them in either orchard or woodlot some remote part of the premises should be made available and steps taken to provide shade and windbreak for the hives if trees or bushes suitable for the purpose are not now in existence. Shade and a measure of protection from the wind can be secured by erecting trellises and growing some hardy vine upon them. Upon many farms where bees are kept they are not now satisfactorily located and yet the owner neglects, from year to year, to prepare a better place for them. At this season, or a little later, some thought should be given to this matter, with a view to selecting and properly fitting up the most advantageous spot that can be

The Michigan Farmer

ESTABLISHED 1843.

THE LAWRENCE PUBLISHING CO.,

EDITORS AND PROPRIETORS.

39 to 45 Congress Street West, Detroit, Michigan.

TELEPHONE MAIN 4525.

NEW YORK OFFICE—41 Park Row.
CHICAGO OFFICE—800 First Nat'l Bank Building.
CLEVELAND OFFICE—1011-1015 Oregon Ave., N. E.
GRAND RAPIDS OFFICE—5 & 6 New Hawkins Building.

M. J. LAWRENCE.....President.
M. L. LAWRENCE.....Vice-President.
E. H. HOUGHTON.....Sec.-Treas.

I. H. WATERBURY.....Associate Editor.
O. E. YOUNG.....Associate Editor.
BURT WERMUTH.....Associate Editor.
ALTA LAWSON LITTELL.....Associate Editor.

E. H. HOUGHTON.....Business Manager

TERMS OF SUBSCRIPTION:

Five Years 260 Copies Postpaid \$2.75

Three Years, 156 Copies, Postpaid.....\$2.00

One Year, 52 copies, postpaid.....\$1.00

Six Months, 26 copies, postpaid.....60 cts.

Canadian subscriptions 50 cents a year extra for postage.

Always send money by draft, postoffice money order, registered letter or by express. We will not be responsible for money sent in letters. Address all communications to, and make all drafts, checks and postoffice orders payable to, the Lawrence Publishing Co.

RATES OF ADVERTISING:

40 cents per line agate measurement, or \$5.60 per inch, each insertion, with reasonable discount on orders amounting to \$24 or over. No adv't inserted for less than \$1.20 per insertion.

UP No lottery, quack doctor or swindling advertisements inserted at any price.
Entered as second class matter at the Detroit, Michigan postoffice.

COPYRIGHT 1911

by the Lawrence Pub. Co. All persons are warned against reprinting any portion of the contents of this issue without our written permission.

WE GUARANTEE to stop THE MICHIGAN FARMER immediately upon expiration of time subscribed for, and we will pay all expenses for defending any suit, brought against any subscriber to The Michigan Farmer by the publisher of any farm paper, which has been sent after the time ordered has expired, providing due notice is sent to us, before suit is started.

Avoid further trouble by refusing to subscribe for any farm paper which does not print, in each issue, a definite guarantee to stop on expiration of subscription.

The Lawrence Pub. Co.,
Detroit, Mich.

DETROIT, JULY 29, 1911.

CURRENT COMMENT.

Last Saturday witnessed the close of one of the longest and most bitterly contested fights ever waged in the United States congress over any question of national public policy, when the bill for the ratification of the Canadian reciprocity pact passed the senate without amendment. The vote by which the bill passed the senate showed a substantial majority for the pact, being 53 for and 27 against. An analysis of the vote shows that a majority of the republican members of the senate present and voting were against the pact, 21 republican members voting for and 24 against it, while 32 democratic members voted for the pact and three against it. Thus it would appear that, while the vote was in a measure non-partisan, yet with a majority of the republican members in both the house and the senate voting against the bill, the credit for the consummation of the agreement on our part is shared by the republican president who is responsible for its promulgation and the democratic members of the two houses of congress who furnished the votes necessary to its passage.

As forecasted in previous comments on the situation, Michigan's vote was divided, thus making our state a negligible factor in the final solution of this vexed question. Senator Townsend voted for the bill, and against all of the amendments offered on the day of its final consideration, as he did against practically all of the amendments previously submitted. His own amendment looking toward negotiations for the establishment of a deep waterway between the great lakes and the ocean, the encouragement of which scheme was his principal published reason for favoring the pact, was voted down by the senate. Senator Smith voted against the bill, and against most of the amendments offered on the ground of believing in the protection of American industries all along the line, but voted for the Nelson amendment to put back half of the duties on farm products taken off by the terms of the agreement and for the McCumber amendment which provided that Canadian grain now held in bond in American warehouses be required to pay a duty, even if taken out of bond after the agreement goes into effect in the event of its passage by Canada.

Various other analyses of the vote are possible from the standpoint of the views of the senators on general tariff legislation but they could be included to no purpose in this comment, since Michigan Farmer readers would have no common interest in them. With the matter finally disposed of by congress and assured of the President's approval, public interest in the present special session centers in the disposition which may be made of other pending tariff legislation. The fate of such legislation, however, seems to be settled by the reported announcement of President Taft that he will veto any further tariff legislation that may be passed before the tariff board reports on the investigation of tariff matters which it is now making. It is predicted that there will be an early adjournment of the special session, following the vote on the two tariff bills now pending in the senate, the last of which has been fixed for August 7.

There will, of course, be a general public interest in the course of legislation in Canada relating to the ratification of the agreement. Canadian authorities who are in close touch with the proposition predict that Canadian ratification will be held up for some time, it being expected that an appeal will be made to the people by the liberals on the reciprocity issue at the fall elections. Another factor which may bring about a further delay is the fact that a readjustment of seats in the Canadian parliament will be made under the new census, which may enable the opponents of the pact to force the issue into another election, with a possible compromise through which the pact might be ratified with an interval provided before it would go into effect, during which a referendum could be taken upon a basis of the new apportionment of seats. The prospect of the approval of such a compromise by the government is said to be strengthened by the fact that the western provinces, which are relatively strong for the pact, would gain in their number of seats under the new apportionment, and that the ultimate ratification of the pact would thus be made more certain.

But whatever the obstructions which may be placed in the way of early action, there is apparently little reason to believe that the pact will fail of final ratification by the Canadian government, and however long may be the delay in its official approval and actual effect, its approval by our government will have the practical effect of discounting its ultimate effect upon our agriculture. It is, however, important to our personal and collective welfare to make a mole hill rather than a mountain out of that effect so far as it is in our power to accomplish that result. It is always better to be an optimist than it is to be a pessimist, and nothing can have a more untoward effect upon our agriculture than a generally pessimistic attitude on the part of our farmers. We have fought this proposition as best we could. That we have lost is, of course, a matter of regret, but it is not a good reason for pessimism on our part. The pessimist is always handicapped in the race for material success. The optimist, whose optimism is tempered with reason, is most often the winner in the commercial race, and even if we cannot control the conditions under which the race must be run, it is essential that we be more diligent in our efforts to succeed in our business under any handicap which we cannot evade.

Slowly and quietly but surely, the plan of co-operative selling of farm products by the producers is increasing in this state. Reports have recently been received of the organization of co-operative elevator companies and the enlargement of plants already established for the purpose of handling farm products at several points in the state. In the latest case of this kind to come to our attention the capital stock of a Farmers' Produce Co., already well established, was increased by more than \$5,000 for the purpose of enlarging the plant, this additional stock all being subscribed at the annual meeting of the company. The principal products sold through this company are beans and wool, of which 122 car loads were shipped out. Merchandise required by the farmers was shipped in totalling 69 cars. These requirements included coal, feed, salt, tile, brick and cement. The members' satisfaction with the plan was evidenced by the action above noted and by the re-election of the old officers and directors at the annual meeting.

What the farmers of this community

are doing for themselves those of thousands of other communities in the state could profitably do. This company was apparently organized along the line of community production, which, as has often been explained in these columns, is the most practical basis for a co-operative enterprise. The principal cash crop in this locality happened to be beans, so this was the first product to the selling of which the efforts of the organization were directed. Then it was found that the wool grown by the members could be profitably marketed in a co-operative way and many of their requirements supplied in a like manner. Next year hay will be handled in quantities by this company, and its functions will doubtless increase until its operations cover the entire range of production of the surrounding community. Object lessons of this kind should stimulate the growth of co-operative enterprises of this kind throughout the state, and it is a matter for congratulation that such object lessons are becoming more numerous each year.

Last week the U. S. senate passed the most drastic campaign publicity legislation.

measure yet passed by either house of the national legislative body. The main features of the bill are as follows: All general election expenses must be made public before the election occurs. The expenditure of candidates for the United States senate is limited to a total of not more than \$10,000, and that of candidates for the lower house of congress to not more than \$5,000, provided that no candidate for congress may spend more than 10 cents for each voter in his district or state. That this bill will be concurred in by the house is indicated by the fact that a house bill was made the basis for the bill which was passed by the senate, and also by the fact that the bill passed the senate without a dissenting vote.

Other features of the bill require that all promises of political jobs be made public and make it illegal to promise political jobs to secure political support. Of course, the letter of a law of this nature will be difficult of enforcement, but its passage is in line with public sentiment and may be considered a progressive step. What the people of the country want, however, whether they are right in their demands, or wrong, as the majority of the senators apparently believe, is an opportunity to select their representatives in the United States senate by direct vote. But publicity of campaign expenses will still be a good thing if the people ever get the chance to vote directly for their senators.

FARM VALUATIONS FOR TAXATION PURPOSES.

There was a gathering of business and professional men in one of the club rooms in a Michigan city, when the subject of farming had its turn. The almost unanimous opinion was that farming was entirely a matter of rotation, and that the low yields and decrease of total production was caused by failure to properly rotate crops. As one man expressed it, the American farmer don't understand the cards to be played in the game of rotation. A leading public official, in speaking of the future of the Canadian Northwest, said no permanent agriculture could exist there because of their inability to practice crop rotation and keep up the fertility of the soil. The increased production of European farms is pointed out to illustrate the superiority of continental agriculture and, by inference, the inferiority of American farm methods, notwithstanding the fact that Europe has cheap labor and buys enormous quantities of fertilizing elements.

This view of agriculture, commonly held by business and professional men, would be interesting if it were only academic, but upon the misapprehension is founded theories of land values for purposes of taxation that burden agriculture. Prof. Sumner, of Yale College, begins his work on political economy with the statement that man's sphere industrially is simply to move things, i. e., to bring materials into changed relations. The farmer prepares the soil and plants the seed, then heat, moisture and the elements of plant growth produce the crop. He is the great master manufacturing chemist who uses nitrogen phosphoric acid and potassium, et al, in the proper environment, and the results of his labor and skill feed and clothe all mankind. If he sells a ton of clover hay, he has taken from the soil 36 lbs. of potassium, 35 lbs. of lime and about 6 lbs. of phosphorus.

If it is an average of two tons to the acre, 80 lbs. of nitrogen, 10 lbs. of phosphorus and 60 lbs. of potassium are abstracted. If a 50-bushel crop of corn and the corresponding yield of stalks are removed, 74 lbs. of nitrogen, 11½ lbs. of phosphorus and 35 lbs. of potassium are abstracted. If a moderate crop of 50 bushels of oats is removed, there has been taken 48 lbs. of nitrogen, 8 lbs. of phosphorus and 24 lbs. of potassium. Then a crop of 50 bushels of wheat removes 96 lbs. of nitrogen, 16 lbs. of phosphorus and 48 lbs. of potassium. These are the absolute chemical facts and no turn of the rotation can take less and produce the crops. Nitrogen in part can be conserved with the legumes and the return of the coarser portions is a credit item to be allowed. However, the increase of city population demands more and more of complete removal, and this, coupled with the law of diminishing returns, exhausts the fertility faster than it can be made available for crop uses.

From a geological standpoint plant growths and decay for ages rendered the slowly unavailable plant food of the rocks available. Modern farming, in a comparatively short time, uses up the available elements and the farmer must supply or return them at an added cost. The fact that unavailable or insoluble compounds of phosphorus and potassium exist has no bearing, because too slowly available for profitable production under existing conditions. The potash of the soil is a double silicate of potassium and about as available as the sodium silicate would be in a pane of window glass. Modern civilization carries the available elements from the soil to the city by the train load, and must return fertilizer of some kind to preserve soil conditions to produce more. The removal of coal from the vein, or ore from the lead or fissure, and their renewal to produce a condition of inexhaustibility would be a similar argument, because among minerals there is a slowly working law of mass concentration.

In the old nursery rhyme, Sam Sprat and his wife, by rotating on the different kinds of meat cleaned up the platter, although the school of rotationists would claim otherwise. The law of diminishing returns, as summed up by John Stuart Mill, is that all natural agents which are limited in quantity are not only limited in their ultimate productive power, but long before that power is stretched to the utmost they yield to any additional demands on constantly harder terms. This law is true in mining as well as in agriculture. The opening up of the virgin Canadian soils to the student of agricultural economics is somewhat foreboding, when the cheapened and abandoned farms of the Atlantic coast are remembered. To prove the "harder terms" that agriculture is demanding in Michigan, nearly one million dollars worth of commercial fertilizers were purchased last year to repair the losses, and this was but a fractional repair.

Farmed lands decrease in value under the law of diminishing returns and crop removal, while at the same time city and village real estate increases in value by the accelerated increment of increasing urban population. At the same ratio as centralized population increases, so does transportation and exchange. Thus, on the teeter board between farm and city, the former, to supply the latter, produces at an increased cost, as noted under the law of diminishing returns or on "harder terms." Then comes the outcry from the untrained in economics against the increased cost of living.

Several years before his death E. H. Harriman, in addressing the American Mining Congress, said "that manufacturers in 1900 received 19.4 per cent on the capital invested; national banks, from their incorporation, had paid dividends averaging 8½ per cent, and in the last three years had averaged 10 per cent, while the farmer, including his own and his family's labor, had received but 9 per cent on the value of his farm." This, it is to be noted, makes no allowance for depreciation of fertility. The manufacturer can include depreciation of plant while the farmer, so long as virgin soils are being brought into cultivation, other things being equal, can not fix the price to include abstracted soil elements.

Under the "harder conditions," as termed by John Stuart Mill, in Michigan farmed lands should have an amortization or restoration fund. To illustrate the difference between manufacturing and farming, last year approximately one million tons of beets were manufactured into sugar in Michigan. The price of sugar was made to include factory de-

preciation. From the farms were taken approximately 7,000 tons of fertilizing elements which was not included in the price paid for the beets. This is an assumed inalienable source of plant food supply which, according to the theory of rotation above noted, succeeding crops in the rotation will restore.

One of the interesting things in connection with soil depletion is that in old settled countries, since it takes several pounds of grain to produce a pound of meat, it is more economical for the laboring class to consume the grain and forego the meat, until the latter is rarely furnished them, with a resulting depreciation of strength and physical welfare. The laborer who, at the behest of manufacturing corporations, fails to recognize this law of diminishing returns and asks for increased taxation on farms in addition to this law by the operation of which city real estate increases in value through the unearned increment, is preparing the way to a vegetarian diet, as is the rule in Europe.

Wages of superintendence, salaries, fees, etc., are on the farm included in the product. In most other industries these represent the personal earnings and are not subjects of taxation. A physician purchases another's practice; the attorney builds up a clientele; the teacher makes for himself a reputation, and in common with the factors of good will and established trade in a business, these are all assets, and in other lines are not taxed, while the skill and ability of the farmer is included in the acres he farms. Each of the above are fields of labor and none are taxed but that of the farmer. With the increase of city population the compensation accruing to skill is greater in the city, while upon the farm the skill of the farmer competes in the main necessities with the world's supply.

That the personal earnings of the farmer are so interwoven with the product and constitute a factor of farm valuation is seen to be indisputable in several tests. Loans are seldom made on farm property to an amount in excess of 50 per cent of its value. The farmer's life and skill is the other factor which makes up the cash value, while his death or disability is a possibility which the mortgagee does not take any chances on. An assessor who was loaning money for an insurance company frankly said that for purposes of taxation farm land is worth twice as much as it is as security for a loan. When a farmer dies and leaves no son to operate his farm or step into the shoes of personal taxation, the neighbors wonder how the farm will be managed, for few farms will pay the salary of a manager.

During the period of trust formation no one ever thought it possible to have a large landed estate or a "trust farm." The absurdity of such a creation is apparent under existing conditions of personal taxation and the general failure to recognize the law of diminishing returns. If the state tax commission were to determine an equitable maintenance or restoration fund for farmed lands and divorce the farmer from inclusion in farm values in assessments, it would mark an era in equitable taxation.

Shiawassee Co. JAS. N. McBRIDE.

HAPPENINGS OF THE WEEK.

National.

By a majority of 1,483 votes Jersey City, N. J., last week rejected the commission form of government, which the New Jersey legislature prescribed and Governor Wilson defended. There were 13,068 votes against the plan and 11,585 in its favor.

Four indictments have been returned by a federal grand jury at Cleveland, which has been investigating an alleged wall paper trust. The indictments charge a conspiracy in restraint of trade under the provisions of the Sherman anti-trust law. The indicted parties are all officials of wall paper jobbing houses.

Judge Archbold, of the United States Circuit Court, imposed a fine of \$25,000 on Hugo Rosenberg, a New York dry goods importer, when he pleaded to guilty to four indictments charging him with defrauding the government out of customs duties.

The senate committee on privileges and elections last week ordered an investigation of the election of Senator Isaac Stephenson, of Wisconsin, and the expenditure of money that accompanied it. This action was taken as a result of a memorial presented by the Wisconsin legislature.

The fiftieth anniversary of the date of the first battle of Bull Run was observed by a great congregation of veterans of both northern and southern armies at Manassas, Va., on Friday, July 21. Addresses were delivered by President Taft, Gov. Mann, and other notables.

In what are known as the Spokane-Reno-Pacific coast cases the interstate commerce commission on Monday of this week ordered material reductions in freight rates from the east to points be-

tween Denver and the western terminals of the great transcontinental railroads. For many years the railroads have exacted from shippers to intermediate points, such as Spokane and Reno, higher rates on eastern freights than were charged for the much longer hauls to Seattle, San Francisco and other Pacific coast points. The theory has been that the railroads must meet water competition to the Pacific coast. The higher rates to intermediate points, arbitrarily fixed, have been defended by a comparison with the coast rates, plus a theoretical backhaul from the coast to the inland stations along the line. The commission recognizes the right of a railroad to meet water competition, but practically wipes out the backhaul rates to inter-Rocky Mountain territory. It lays down what it considers would be fair and just rates to various freight zones in the west and gives the railroads until October 15 to adjust their tariffs accordingly.

A Chicago capitalist has announced plans for the immediate construction of an interurban railway from Bristol, Ind., to Kalamazoo, Mich., passing through the Michigan towns of Vicksburg, Constantine, Three Rivers and Schoolcraft.

The total increase in exports from the United States during the fiscal year ending June 30, according to statistics issued last week, is over \$300,000,000. Of this increase \$140,000,000 was in manufactures and the remainder in agricultural products. Of these products cotton supplied about \$135,000,000; meat and dairy products about \$19,000,000; corn approximately \$10,000,000; food animals, \$1,500,000; flour about \$2,500,000, while wheat showed a marked decline.

During the work on the sunken battleship Maine in the Havana harbor, bones from a number of bodies have been removed, identification of the victims being impossible. The cofferdam has now been pumped out dry and the mud is being washed from the wreckage. It is thought that the after part of the ship for perhaps one-third its length can be floated and removed from the harbor. It is said that the balance of the wreck, including the forward part of the ship, is so badly broken up from the effects of the explosion which wrecked the vessel that it resembles a dumping place for scrap iron, rather than a once powerful battleship.

More than 60 shots were exchanged between strikers and guards in a garment workers riot which occurred in Cleveland on Monday. Two strikers were wounded and the police made many arrests.

The question of state wide prohibition of the liquor traffic was submitted to the people of Texas in the form of a constitutional amendment last Saturday. The result was at first reported to be a victory for the "dry" element, but later returns indicate that the amendment will be defeated by a majority of about 6,000. Although the returns are not all in at this writing, the pro-liquor vote is said to have so great a lead as to preclude any possibility of the adoption of the amendment.

Ten thousand soldiers, comprising detachments of United States infantry and cavalry from Fort Sheridan, regiments of the national guard and naval reserves of Illinois and four other states, took part in the national military tournament held in Grant park this week.

Foreign.

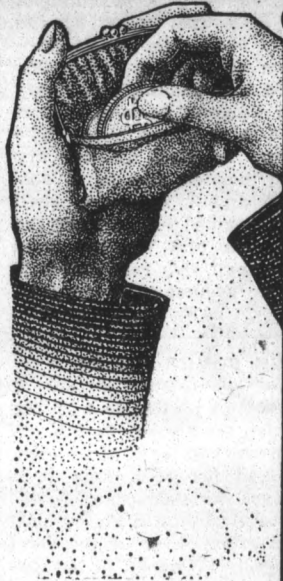
The United States senate has ratified the American-British-Russian-Japanese fur-seal treaty which was transmitted to them by the President last week. Under the terms of the compact the killing of seals in the open seas, known as pelagic sealing, is absolutely prohibited north of the thirtieth degree of north latitude for 15 years and the various governments are given power to regulate and even discontinue seal killing on the seal islands within their jurisdiction. To compensate the sealers of Japan and Great Britain (really those of Canada), the United States agrees to transfer each year 30 per cent of the skins taken annually, one-half of which are to go to Japan and the other half to Great Britain, the number in no case to fall below 1,000 to each country except in case of total prohibition. A money compensation of \$200,000 each is allowed by the United States to Great Britain and Japan for immediate losses but its refund is provided for. Japan and Russia are also required to turn over to other countries a portion of the skins taken on their islands. The treaty does not go into effect until ratified by all the signatory powers, but as that act devolves exclusively on the sovereigns of all of the other countries, neither delay nor failure is anticipated.

Mohammed Ali Mirza, the ex-shah, who is now in Persia in an attempt to win back his throne, will be proclaimed an outlaw, with a price of \$100,000 on his head.

CATALOG NOTICE.

J. M. Peel & Bro., Marysville, Ohio, manufacturers of the P. & B. fence anchor, will send, upon request, to readers of the Michigan Farmer, an illustrated folder telling all about this device for holding wire fences to the ground, thus preventing stock from passing under them and protecting the posts from pulling out. By its use posts can be set from 35 to 40 feet apart and still make a firmer fence than double the posts without the anchors. They also afford perfect protection from lightning by "grounding" the fence at frequent intervals. Write for literature to the manufacturers or to H. C. Whitney & Co., Michigan State Agents, 31 Home Bank Building, Detroit, Mich., mentioning the Michigan Farmer. Mr. Whitney is himself a farmer and can advise from personal knowledge regarding the practicability of this device.

A DOLLAR SAVED ON EVERY ACRE PLOWED



This small engine and two boys plow 14 acres a day

For the work of plowing, discing, harrowing, seeding, harvesting, hauling grain to market, animal power is exceedingly expensive. The price of farm horses is now about 150 per cent higher than ten years ago, their feed bills nearly double. The excessive price of building material increases the number of dollars a farmer must invest in sheltering his horses, and their care is a constant worry and a daily expense.

THE OIL PULL WAY

is much cheaper. Cheaper in first cost of outfit, cheaper in operation, less expensive in maintenance and requires no care nor attention when not working.

The *Oil Pull* when compared with animal power, for the work of plowing alone, easily effects a saving of \$1.00 for every acre plowed.

A fair average cost per acre for good, deep plowing with horses, is 60 cents for feed, 75 cents for labor, 40 cents for interest, depreciation and maintenance, making a total of \$1.75 per acre plowed. With the *Oil Pull* the cost per acre is, fuel 21 cents, labor 39 cents, depreciation, interest and maintenance 25 cents, making a total of 75 cents. That's a saving of a dollar an acre. The same proportionate saving can be effected in all other farming operations.

THE SMALL TRACTOR FOR THE SMALL FARM

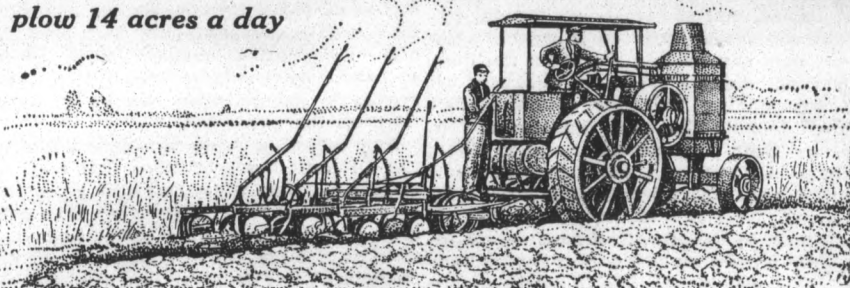
Type "F," 15 Tractive, 30 Brake Horse Power is especially adapted to small farms. The farmer with 160 acres under cultivation can profitably sell three out of every four of his horses, buy this size tractor and do plowing, discing, harrowing, seeding, threshing and hauling.

Oil Pull saves time, worry and labor, and at the end of the season shows a nice profit on the investment. Have you seen our catalog? Write for it today.

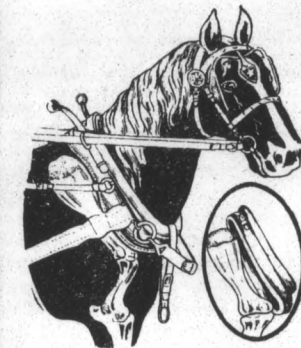
M. RUMELY CO.

6275 Main Street

LA PORTE, IND.



The Collar Really Decides the Working Capacity of Any Horse



The right kind of collar brings the pulling strain where it should be—and without galling or chafing the neck.

Our "Sunbeam" Percheron Collar

is but one of the many styles we make for different purposes. Each is properly shaped, made of the best obtainable materials, and will outlast two ordinary collars because the padding holds in place.

There's a dealer near you who sells "SUNBEAM" collars and harnesses. If you don't know him write us and we will tell you where you can inspect "SUNBEAM" goods—Made to wear.

BROWN & SEHLER CO., Grand Rapids, Mich.

For Sale—Rebuilt Machinery

22 h. Huber Contractors traction engine; 20 h. Russell, single cylinder; 20 h. Pitts single cylinder; 18 h. Huber; 18 h. Russell; 18 h. Gaar-Scott; 18 h. Pitts; double cylinder; 18 h. Ft. Huron; 18 h. Pt. Huron; 14 h. Pitts; 12 h. Pt. Huron; 17x22 Eli belt power hay press; 14x18 Square Deal; 17x22 Ann Arbor; 17x22 Southwick full circle horse press; 14x18 Geo. Ertel horse press; Gaar-Scott, Birdsell, Peerless and Matchless clover hullers, and many other machines. Write us for description and price.

THE BANTING MACHINE COMPANY, Toledo, Ohio.

114-118 Superior St., Detroit, Mich.

FOR SALE—4 Passenger AUTOMOBILE—Stevens-Duryea, with top and shield, \$600, cost \$2,300; Address box X, Michigan Farmer, Detroit, Mich.

FOR SALE—Port Huron Engine; Nichols-Shepard Separator; McCormick Husker & Shredder. Write Henry Knight, Grosse Ile, Mich., acting for B. Douglas.

Farm Wanted in Exchange for Stock of Merchandise Address Box 5, Michigan Farmer, Detroit.

FARMS AND FARM LANDS FOR SALE OR EXCHANGE

NEW YORK GREAT FARM BARGAINS near Ithaca and Cornell university. Large list. Send for free catalog. KEEFER & BARBER, Ithaca, N. Y.

I SELL FARMS in Oceana, best County in United States. Fruit, Grain, Stocks, Poultry. Write for list. J. S. HANSON, Hart, Mich.

WHY NOT INVEST Your Money in York State Land? 270 acres fertile land, half cash, balance time. Write for other farm bargains. VALLEY FARM AGENCY, Owego, New York.

LAND WANTED—500 to 600 acres, within about 75 miles of Detroit. Must combine good soil for crops, water advantages, meadow and woods. Cash proposition. Address Box L, care Michigan Farmer, Detroit, Mich.

WE SELL FARMS in BARRY, EATON and Ingham Counties, Michigan. The most productive and best improved farms in SOUTHERN MICHIGAN. Write for booklet and our new farm list No. 7. BUCKLES & MATTHEWS, Eaton Rapids, Mich.

FOR SALE—FERTILE FARMS in Eaton Co., Michigan, well improved and well located. Write for list of best bargains in the country. The HARTZ CO., Bellevue, Mich.

WHY PAY RENT when you can buy the Best Land in Michigan at from \$6 to \$10 an acre near Saginaw and Bay City. Write for map and particulars. Clear title and easy terms. Stafford Bros., (owners) 15 Merrill Bldg., Saginaw, W. S. Michigan.

FREE Literature will be sent to any one interested in the wonderful Sacramento Valley, the richest valley in the world. Unlimited opportunities. Thousands of acres available at right prices. The place for the man wanting a home in the finest climate on earth. No lands for sale; organized to give reliable information. Sacramento Valley Development Association, SACRAMENTO, California

MAKE MONEY in a CANADIAN FRUIT FARM

on the shores of Lake Huron in the county of Lambton, where the profits are large, sure and increasing every year. Improved land offers profits from the start to fruit-growers, dairymen and farmers. Big local and export markets, and cash prices. Land prices are low and small acreage yields heavy returns. Soil and climatic conditions unexcelled.

Send for FREE Booklet issued by County of Lambton Supervisors. Address A. B. INGRAM, County Treasurer, SARNIA, ONTARIO, CANADA.

Silver Plated Milking Tubes.

For hard-milking cows or sore teats, self-retaining. Prices, 2 1/2-inch, 25c; 3-inch, 30c, 3 1/2-inch, 35c. Send orders to The Michigan Farmer, Detroit, Mich.

HORTICULTURE

FRUIT NOTES.

Thinning Apples.

Thinning apples is our main order of business this week. Four of us have been at this work for a week, and I think we shall put in another week at it. There is not a full crop on all trees but some of them are loaded and parts of others are too full. On the whole, there is promise of perhaps two-thirds of a crop. Where there is a crop this year it is generally too heavy, especially on the early varieties. This is probably due to the favorable spring which allowed more of the blossoms to set than usual. Even on most trees which have a light crop much of it is in clusters of from three to six apples in a cluster and even these need thinning though they would not if more scattered. Such clusters of a half dozen in a clump seldom amount to much if all are left, even if they are on a tree with a light crop. Such trees will, however, mature two or sometimes three in a cluster into good-sized fruits, but if such clusters are found on trees where there is a full crop throughout they are thinned to one, and the single specimens left about six inches apart on a branch. No exact rule can be laid down, as the distance will depend upon the thickness of the surrounding fruit, the ability of the branch to hold the load, the size of the mature fruit, its perfection, and other things. All wormy, scabby, hail bruised, knurly, and otherwise defective fruit is removed, especially if there is plenty of good fruit to be left. The fruit seems to be quite perfect and free from worms and scab this season, so there is not so much of this fruit, but it will be of considerable help in the grading to have what there is removed, and have the apples thinned so each will have a chance to reach at least a medium size. Apples, as well as farm crops, seem to be more advanced at this time of the year than is usual, and will be likely to mature early. On this account it will be desirable to have an early fall, or, if we get a late warm autumn, to have the fruit where it can be gotten into cold storage as soon as possible.

It is interesting to note the different manner in which different varieties are arranged upon the tree. Some are quite well distributed, like Greenings and Starks; others, like Baldwins and Ben Davis, are generally clustered and are more in need of thinning. Some, like Winter Rambo, are set close to the branch, and so thick they nearly touch all along it. Most summer and fall apples set entirely too thick. Transparent, Duchess, Astrakhan, and Wealthy have required the removal of from one-half to three-fourths of the fruit.

We find that it is costing from 25 to 75 cents this season to thin an ordinary tree. Probably 50 cents will be a good average. In a season when apples are as plentiful as they promise to be this season only the best ones will bring good prices and there is little use of bothering with culls, so I believe now is the best time to get rid of them. Pull them off and, if possible, let the hogs eat them up.

We have finished going over our young trees twice, cutting out blight and stripping off worms' nests. I have never seen the blight as bad on young trees as it is this season. Our Wageners seem especially susceptible to it, especially those on cultivated soil. The tent caterpillar is also starting early and bids fair to be plentiful. We usually strip these off and put into a basket carried for the purpose. This saves the branches and buds for the next season. The blight we try to cut at least six inches below the infection and disinfect the pruning shears in a solution of carbolic acid after each tree or after each branch where it is necessary to cut close to the infection. I have already noticed a few of the red-humped apple worms which are usually quite prevalent during August and September. These work in clusters on the leaves and soon spread over a small tree. We strip the leaves they are working on and burn them.

Strawberries and Raspberries.

The strawberries have all been worked over and are waiting for a rain before hoeing them out. It is a bad time for patches that were burned, as there has been no rain since they were worked over, but the old plants which were mowed and the mulch raked off are starting nicely but making a slower growth than

they would had there been showers after renewing. The spring set plants are not making runners very fast as yet. We are now cutting marsh grass for mulch, which we will haul and stack by the patches, ready to spread in December.

The raspberries are getting rather dry but the reds are still holding out pretty well. They are in good demand, but it is difficult to get them picked clean. The blacks are being touched by the dry weather. These berries are in a six-year-old orchard and I think we shall remove them and give the orchard the room. The Wagener and Wealthy trees are bearing some fruit this year and it is time they had the ground to themselves.

Calhoun Co.

S. B. HARTMAN.

SEED FOR COVER CROPS.

While one is not so particular with the cleanliness of the seed sown in the orchard for the production of a cover crop, as he is with seed for field crops, it is usually wise to get the cleanest seeds obtainable, since weed plants in the orchard are apt to seed other parts of the farm where the presence of weeds is not desired. However neglectful one may be about the weeds being present it is important that the quality of the seeds sown be high as one desires a rapid growth of the crop from the beginning, a result that can be obtained only with seed of high germinating quality. Such seeds as cannot be readily secured in local seed stores or on the farm can be obtained from reliable seedsmen.

The following table not only suggests the different kinds of crops that may be used for cover crops but also gives the amount of seed needed per acre, thus aiding the beginner in calculating the amount necessary for his purpose: Of alfalfa use from 30 to 40 lbs. per acre; of hairy vetch use 40 to 50 lbs; of cowpeas use about 90 lbs; and the same amount of soy beans; of red clover, mammoth clover and crimson clover use from 15 to 20 lbs; of sweet clover from 12 to 15 lbs; of corn use one-half bushel; of buckwheat use from one-half to three-fourths bushels; of barley from 1½ to 2 bushels; of oats from 1¾ to 2½ bushels; of rye from ¾ to 1¼ bushels; of rape from 8 to 10 lbs; of turnips about 2 lbs. All the seeds enumerated in order down to sweet clover, inclusive, are leguminous seeds and the plants produced therefrom have the ability to take from the air free nitrogen, which fact enables these crops to bring to the soil additional nitrogen and thus save fertilizing expense where this element is needed. The remaining crops add to the soil humus and benefit its physical condition without adding to it new material. In a bearing orchard too much nitrogen is not conducive to large and continuous bearing and so it often happens that leguminous plants are not best to sow in spite of the nitrogen-gathering habit.

REGARDING THE APPLICATION OF SPRAYS.

There is much speculation among practical men as to the proper manner to apply spraying solutions to trees. It is true, no doubt, that the limited experience of many has caused them to reach conclusions which a broader practice would show to be erroneous. Messrs. Dickens and Headler, of the Kansas station, have the following to say regarding the subject:

"The method of application of spray materials should be made to vary with the object to be gained. All sprays except the one given at the dropping of the petals are intended to coat as completely as possible the trunk, limbs, foliage and fruit with the mixtures. They are therefore delivered as a fine mist from both ground and tower in such a manner as best to effect this object. The spray at the dropping of the petals is intended to fill the open calyx end of the apple with poison, because eighty per cent of the first brood and a large percentage of the second brood of apple worms enter the fruit through this door, and because soon the calyx lobes will roll together, enclosing the poison and holding it there for all comers. When this spray is delivered the young apple stands with the calyx opening upward and so the filling can best be accomplished by shooting the spray into it from above downward under great pressure. There is a difference of opinion among experimenters as to whether the second spray delivered as a dash is more effective than if delivered as a mist.

With the ordinary spraying machinery

efficient spraying cannot be done with pressure of less than 80 pounds, and the work can be much more satisfactorily and rapidly done with a pressure of 200. Good types of barrel pumps will give pressures ranging from 60 to 120 pounds, with an average of about 80. Gasoline and compressed air sprayers will give pressure from 120 to 225 pounds.

PINE TREES TROUBLED WITH INSECTS.

I am asking through the columns of your paper for information which will be beneficial to other readers as well as myself. There is a small worm that is eating the leaves or needles off from our white pine tree; the worm is about ¾ of an inch long, very light green, four rows of black spots running lengthwise. The worm is almost transparent. It eats needles clean as it goes. It gets in clusters in a bunch of pines and strips it clean. I should like to find something to exterminate them. I have tried paris green, kerosene and carbolic acid.

Ionia Co.

J. L. R.

The description of the insect at work on white pine seems to point to the saw-fly, as near as one can judge without specimens. If it has a large number of legs it must be one. On the other hand, if it is a measuring worm it might be a geometrid moth. The chances are it is a saw-fly. Now, the pine saw-fly spins its cocoon in the fallen needles or under them in the soil, and a clean-up of such material, or the burning of the stuff under the tree will kill many. However, it is a native insect and seldom works badly for more than one or two seasons, since the parasites get control. In case the damage seems to promise to become excessive, a spray of arsenate of lead at the rate of about three pounds to a barrel of water should put a stop to it, since the larvae are chewing insects.

Agril. College.

R. H. PETTIT.

SOIL MOISTURE.

There is no more important practice of the gardener than the controlling of soil moisture. Throughout the season, from the breaking of the land with the spade or plow till the last cultivation and later, he finds his labor giving best results when he works to conserve the right amount of water for the plants.

The reason is simple. From 80 to 90 per cent and more, of the plant, is water. Plant food is carried from the ground upward to the leaves and, after manufactured into starch, sugars and other combinations, is taken to every cell of the plant by means of the water coursing through the vessels. Besides the water dissolves the mineral elements of the soil and makes it possible for them to gain entrance into the cellular tissue of the minute rootlets where the circulatory system of the plant takes them up for the ride to the leaves.

Thus we see the importance of having a constant water supply ready for the plant and the danger that must accrue should the plant at any time fail to secure what is needed to properly carry on its functions. Our rainfall is usually sufficient to mature a good crop. When a crop fails for want of moisture or for excess it is because the amount has not been properly distributed over the growing season, or because some portion of the amount coming on the soil in the form of rain during times when crops are not growing is not trapped and held till the plants can make use of it. Whatever we can do to distribute the moisture so it will become available to the crops when needed will aid in mastering the art of plant production.

The mechanical condition of the soil is a factor that influences the amount of soil moisture the land will retain and also the length of time it will hold it. Soil with a loose surface will allow less water to escape by evaporation than will one with a compact upper layer of earth, the latter being fitted for giving up moisture since communication with the earth below is unhampered and the capillary movement of moisture from the lower strata upward is rapid, unbroken and damaging to the future safety of plants should dry weather overtake them before maturity. The loose surface, on the other hand, puts between the moist soil and the moving atmosphere above, an obstruction which, though it does not absolutely prevent, yet greatly hinders the upward movement of the moisture. This accounts for the beneficial effect of cultivation, as stirring the surface produces a mulch or loose surface that affects the results mentioned.

The incorporation in the soil of vege-

table matter is another means of securing a greater moisture holding capacity. Inspect the yards where the stock have been fed, or the corner of the orchard where a stack bottom decayed and you will find more water in the soil than in the open fields. Well-manured soils are therefore benefited by the manuring. The growing of deep-rooted plants also aid in that they carry down into the subsoil quantities of vegetable matter that remains and decays after the plants are harvested. Clovers, turnips, and alfalfa belong to this class of plants. The applying of mulch material to the surface affects practically the same end as does cultivation.

The breaking up of the subsoil is also a practice that helps to control soil moisture. This may be done by subsoiling, which has been a profitable procedure in soils where hard pan is near the surface; but the same end is obtained to a large degree by the use of deep rooted plants mentioned in the preceding paragraph. In connection with deep tillage should be added the effect of under-drainage which aids in making a deeper feeding surface for the plants by allowing the roots to go deeper. Under-drained soil, peculiar as it may seem, has in it a larger amount of moisture available to the plants than soils that lack this means for the surplus water to escape, other things being the same. A little observation and simple experimentation will convince the reader of this seeming paradox.

What we have said has its bearing upon the activities in the orchard and garden. The planting of cover crops, the continuation of tillage, the saving of compost, the mulching of the strawberries, currants, berry bushes, etc., are all related one way and another to the conserving of soil moisture.

SPRAYING EXPERIMENTS FOR PEACH SCAB.

The New Jersey Experiment Station has recently compiled a report on some spraying tests on peaches conducted last year. In its observations it was found that scab is noticeably more severe upon trees with dense tops and upon trees with rank, vigorous foliage. Such conditions are likely to prevail in orchards of young trees, and, where only a few fruits have set, the proportionate loss from insect troubles and fruit diseases is very large.

In the station plot was an orchard composed of trees making their third summer's growth. The trees were well pruned but the foliage was very vigorous. Nearly all of the trees set a few fruits and some bore a considerable quantity, but the setting of fruit was, of course, much lighter in general than on the trees making their fourth summer's growth. The former trees were sprayed with self-boiled lime and sulphur and arsenate of lead May 6, and received a second application consisting of home-made concentrated lime-sulphur 1:100 on May 26. No further applications of any sort were made. The crop from the sprayed trees was noticeably much greater than from the unsprayed trees, but this was probably due principally to the controlling effect of the arsenate of lead upon the plum curculio, which often materially reduces the crop on young trees with a comparatively light setting of fruit.

The effect of the two sprayings upon the peach scab was very marked, however. The fruit from the unsprayed trees did not show a single specimen free from scab, and the greater proportion was very badly scabbed, with much fruit actually cracked open. As picked from the trees the fruit was of but little value. The fruit from the unsprayed trees, however, showed a considerable proportion of fruit free from scab and a very large proportion which was only slightly scabbed and which brought a fair price in the market. The small proportion of badly scabbed fruit from the sprayed trees was less seriously cracked and affected than the badly scabbed grade from the unsprayed trees, due to early spraying with the self-boiled lime and sulphur as it was shown in other tests that diluted home-made concentrated lime-sulphur had but little effect on the scab.

It is believed by the station officials that three sprayings of the self-boiled mixture will produce much better results in the control of scab than two sprayings, but the experiment shows the marked influence of even one spraying of the self-boiled mixture.

Washington, D. C.

G. E. M.

GRANGE

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

THE AUGUST PROGRAMS.

State Lecturer's Suggestions for First Meeting.

"Our object should be to help develop in the country community the great ideals of community life as well as of personal character."—Roosevelt.

Roll call, responded to by each telling of the greatest ride he or she ever took.

Music.

Summer rations for cows.

Recitation.

My method of canning corn, fruit and vegetables.

Song.

Some noted people of today—1. Men.

2. Women.

Suggestions for Second Meeting.

"Work without rest is like bread without yeast—it is hard and heavy."

Roll call, responded to by each naming an evidence that the world is growing wiser, brighter or better.

Co-operative ownership of farm machinery—is it feasible in this locality? If so, what machines?

Conundrum contest.

Vacation experiences.

Select reading.

Value of a power engine in the work of the farm and home.

Prime lemonade, by men named A to J; served with choice cakes, by women named K. to Z.

Intersperse this program with songs from "Song Knapsack."

GRANGE INTEREST IN THE SMALL RURAL SCHOOL.

The annual school meeting has been held and the fortunes of the rural school for the coming year depend largely upon the work of that meeting. The desirability of the Grange aiding and co-operating with district school officers and teachers has frequently been urged through this department, and the State Lecturer, in the program outlined for the early July meetings of Granges, sought to promote the discussion of rural school problems as a means of preparing Patrons for the annual school meeting.

In Michigan, as in most states, the school district, covering a few square miles, is the educational unit, and school patrons are generally unwilling to give up this particular institution even though decreasing population has greatly diminished the attendance. The consolidation of such districts has been quite generally advocated as a means of strengthening the schools and affording better opportunities for supervision and instruction. Without discussing the practicability and value of consolidation as a remedy, it may be said that there are, and probably always will be, very many country districts from which it will be impossible to transport the children, and the maintenance of a school for the benefit of the children living in the district therefore remains a necessity. That the standard of such schools should be as high as the combined wisdom of patrons and teachers can make it will not be denied, but an increasing interest must center about the affairs of the school and the future welfare of both the pupils and community if this desirable end is to be attained.

Rural progress in any community is largely dependent upon the educational facilities enjoyed by its young people. As the champion of rural progress, therefore, the Grange must strive to strengthen and uphold the hands of local school officers and teachers. The Grange's interest in the rural school is well set forth by a New York educational writer in the following:

The life of the Grange does not depend altogether upon its present members. The boys and girls living in a community should be trained to become not only future farmers, but they are the ones to be concerned in rural progress. If the Grange has an interest in keeping up a prosperous, up-to-date school its young people are much better prepared to figure in rural progress.

No teacher and no equipment is too good for a rural school. It is there that larger responsibility falls upon the teacher, and even though there are but a few children in the school they are as worthy of good instruction as though they attended a school where there are fifty or a hundred. Every Grange should demand that there be a teacher employed who is in sympathy with farm interests, who has some knowledge of the work which the children are supposed to do later in life and who will co-operate with the Grange in the interests of the commu-

nity. The school cannot do this work alone; neither can the Grange. Co-operation is essential.

A course of study which does not include a knowledge of agriculture and the work of the farm home is not an up-to-date one. Many teachers have not had the training which will enable them to teach the essentials of agriculture. The Grange can assist in this by securing practical talks for the school and literature and equipment for the teaching of agriculture; otherwise it must be expected that the boys and girls trained in the rural schools will not have the interests of the farm at heart.

Many of the schoolhouses of the state are not fit places for housing the children six hours of the day. The Grange should have a standard for hygienic conditions and artistic surroundings which will help to make the schoolhouse a pride in a district rather than fit to be placed upon a back road. The Grange can arouse public opinion in favor of a truly attractive public building.

In like strain are the words of President Butterfield, of Massachusetts Agricultural College and formerly a forceful Grange worker in this state, in an address on the Grange of the future: The Grange of the future must work less for the benefit of the individual and more for the benefit of the whole community. The Grange must become a national rather than a sectional organization. The Grange must stand for the farmer and fight the farmer's battle. It must be a studying organization. It should be careful to know what it is doing and what the effect of what it does will be. The time is coming when the true test of the Grange will be what it does or has done for the community. The Grange of tomorrow must be aggressive and work outside of the Grange for the reforms advocated in the Grange.

THE GRANGE IN OTHER STATES.

Bay State Patrons Successfully Defend their Milk Transportation Law.

The Grange in Massachusetts has just emerged from a sharp contest with the contractors who supply milk to the large cities of that state, and the organization is being congratulated on the successful outcome of the fight. The issue involved was the repeal of the so-called Saunders milk transportation law, which Grange efforts put on the statute books one year ago. This law abolished the contractors' leased milk car on the railroads and provided the "open car," with equal shipping privileges for all milk producers and handlers.

The great milk contractors, three of whom had controlled the milk market of Boston because of their leased car power, at once inaugurated a spirited campaign to secure the repeal of the law. An effort was made to get an extra session of the legislature to repeal it, its constitutionality was assailed, and when all these plans failed the contractors and their allies set about working up a sentiment throughout the state to block the operation of the law and to accomplish its repeal by the 1911 legislature.

The contractors and railroads joined hands to defeat the farmers, and several all-day hearings were held by the legislature. Emissaries had been sent all over the state to work up sentiment against the continuance of the law and a great agitation was stirred up. The prospect looked anything but bright for retaining the law and milk producers shuddered at the prospect of going back to the grip of the contractors and their old leased car system.

Then the Grange took hold of the fight and gave the farmers' cause a leadership that immediately changed the situation. The annual State Grange had voted unanimously in favor of retaining the Saunders law, and the whole weight of Grange influence was thrown in its favor. The result was that the power of the contractors and their allied interests was overthrown by a vote of 24 to 14 in the senate and of more than two to one in the house. The Saunders law is therefore retained as a state law and the open car in Massachusetts milk transportation is saved for probably all time to come.

Liquor License Funds for Support of State Institutions.

At the meeting of Oregon State Grange held last May a proposition to turn over to the state penitentiary, asylums and charitable institutions of the state all fees derived from the granting of liquor licenses was submitted. It resulted in a long and spirited discussion in which strong opinions were expressed on both sides, particularly by those favoring the proposition. The plan was held to be logical and practical in that the saloon money should properly be applied to supporting those conditions for whose existence the saloon is largely responsible. When put to a vote the Grange decided to recommend to the legislature the enactment of a law that would so apply all liquor license fees.

COMING EVENTS.

Pomona Meetings.

Berrien County Granges' Annual Picnic, at Hegman Park, Benton Harbor, Saturday, July 29. D. E. McClure, state speaker.

Lenawee Co., with Gorman Grange Thursday, Aug. 3. Annual Grange rally.

FARMERS' CLUBS

OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—B. A. Holden, Wixom.
Vice-Pres., J. D. Leland, Corunna.
Secretary—Mrs. C. P. Johnson, Metamora.

Treasurer—Mrs. Lewis Sackett, Eckford.
Directors—A. R. Palmer, Jackson; Wm. H. Marks, Fair Haven; C. L. Wright, Caro; E. W. Woodruff, Blanchard; C. P. Johnson, Metamora; Patrick Hankerd, Munith.

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

Associational Motto.—

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

Associational Sentiment.—

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

THE SUMMER PICNICS.

Reports of the summer picnics held by the local Farmers' Clubs are coming in slowly, but in each case where a report has been received these picnic meetings have proven a great success. While a few of the picnic meetings are held in July, by far the larger proportion of them occur in August. There is still time for the officers or executive committee of any Club to get together with other local organizations and plan a general farmers' picnic for the community where no special Farmers' Club picnic has been voted by the Club itself. These meetings are especially profitable in bringing friends together and in fostering and developing a general social interest in the neighborhood. It is a mistake to let the summer go by without such a gathering in any community, and no one can take the initiative in planning such a general social gathering better than the officers of the local Farmers' Club.

REVERIES OF THE NORTHERN SPY.

Original poem read by Frank C. Hacker, before the Howell Farmers' Club, of Livingston county.

A clearing in the forest;
A settler's humble home,
Where ague and mosquitoes
Rose from the leafy loam.
The crooked, stumpy roadway
Had a traveler one day;
And, eating on an apple,
The core he threw away.

That evening in the moonlight,
'Twas by a rabbit found;
One little seed escaped him
And rattled to the ground.
Through the dying autumn,
And 'neath the winter's snow,
I waited for the springtime
To swell and sprout and grow.

Although the winter lingered
Long on the lap of spring;
The buds were slow in starting,
The birds were slow to sing;
I felt the rays of sunshine
My tender rootlets spread,
The rain came down upon me;
I lifted up my head.

And there, I grew neglected,
Beside a new rail fence,
While changes in the landscape
Were the farmer's recompense.
But when, at length he noticed
I was an apple tree,
His face lit up with pleasure
And he remarked to me:

"How lucky that I found you,
For some infernal mouse
Has killed a tree I planted
In the orchard near the house."
And there I was transplanted—
A seedling apple tree,
With grafted fruit around me,
Or was supposed to be.

There I out-grew my neighbors;
I was the farmer's pride,
My branches reached to 'ard Heaven;
Theirs hung down by their side.
But they were early bearers;
They blossomed when quite small;
The ripened fruit hung on them
In summer and in fall.

The Wagener, and the Spitzenberg,
The Greening and the Swarr,
Grime's Golden and the Pippin,
The Sheepnose, black as tar,
The Early Harvest Red Streak,
With branches hanging low;
While I, the largest, tallest,
Did nothing else but grow.

At last the farmer weakened,
And gravely told his wife
That I was big, and worthless,
And he would take my life.
The farmer's wife then told him:
"Now, William, spare that tree,
And don't be quite so hasty,
Or soon the time you'll see

When you'll regret your action
And wish you'd heeded me."
And she, as usual, conquered
And changed my destiny.

For, in the spring that followed,
When all the rest were done,
My branches filled with blossoms,
When all the rest had none.

The shining, big red apples,
That hung on every stem,
Appeared, like Nature's jewels,
Hung on her diadem.
The vanquished farmer saw it;
He said unto his wife,
"Now, Mary, you shall name it,
For once you saved its life.

It came to us a stranger
It once was doomed to die."
She pondered for a moment,
"We'll call it, Northern Spy."
Then, I was propagated
By every modern craft,
I furnished b... in August,
In spring, I furnished graft.

The catalogues proclaimed me
The hardest and best;
A winter fruit in Michigan,
An autumn in the West.
The children played around me,
And some mechanic made
A rustic seat beside me,
Out in the cooling shade.

The Harvest Red Streak fruited
On each alternate year.
When it failed, the town boy
Would on my limbs appear.
He strictly was forbidden
Such apples hard and green,
But, Adam-like, he ate them
With consequence foreseen.

Before the hour of midnight,
I heard the town boy cry
In tones of mortal agony:
"Oh! mamma, will I die?"
But on the morn he loitered
And lounged upon that seat,
And gazed on fruit forbidden,
And then, some more did eat.

The farmer's pretty daughter
Would sit there Sunday night;
A young man's arm around her,
Unnecessarily tight.
He told her how he loved her,
And how his strong right arm
Would always be around her,
And shield her from all harm.

I heard a growl of anger;
I heard that young man's flight
Through standing corn and pumpkins—
The dog got loose that night.
A sound of muffled laughter
Came from the woodshed door.
The maiden was heartbroken,
For he came back no more.

One day in late September,
An equinoctial storm
Came raging, like a pestilence,
Of most malignant form.
It seized me like a demon,
And twisted me around
'Till two o'erloaded branches
Went crashing to the ground.

With ax and saw the farmer
Soon cleared the wreck away,
It left a wound so ugly
It started to decay.
Not many short years later,
A hollow in my chest
Two little wrens discovered,
And therein built their nest.

In after years, two robins
Drove both the wrens away,
And built their nest of gleanings
All plastered o'er with clay.
The farmer raised his grandson,
To see the eggs so blue,
While loudly chirped the mother,
As round and round she flew.

Then as the hollow deepened,
There came a Leghorn hen;
Who laid her eggs and hatched them,
Where did the little wren.
I see a splendid mansion
Where once the cabin stood;
I see rich grain fields waving,
Where once I saw but wood.

Where, on that road so stumpy,
The apple core was shied,
The trolley car is speeding
And automobiles glide.
The grave now holds the farmer;
My savior by his side.
My blossoms decked her coffin;
She asked it, ere' she died.

CLUB DISCUSSIONS.

The Washington Center Farmers' Club met at Rose Cottage, with Mr. and Mrs. J. T. Hull on July 13 at 1:30 p. m. Mrs. Ida Cammet was chosen to take the president's chair. The meeting was called to order with music by the graphophone, "The Battle Cry of Freedom." Mrs. Ida Cammet read some poetry on the present and past Presidents of the United States. She said that 19 of the 26 Presidents were lawyers when elected, two were farmers and two were soldiers, two were statesmen and two were in public office, nine have borne the same given names as their fathers. Roll call, "Name a President of the United States," was well responded to. Music was again given by the graphophone, which was fine. A select reading, "History of the Confederate Flag," by Mrs. Frank Cammet, was very good and many interesting thoughts were brought out on the war and the flags. Mrs. Frank Brown read, "The Story of the Star Spangled Banner." This was an excellent reading. Master Wendell Blair recited a very good recitation and Floanna Brown spoke "The Plagued Telephone." Mrs. Frank Brown recited "The Rent in the Clouds." There were 22 present and all enjoyed themselves very much. The party was treated to some very delicious ice cream and cake. The Club will meet with Mrs. and Mrs. Frank Brattin, near Shepherd, on Thursday, August 10, 1911, at 9:00 a. m. —Mrs. Cora Keiser, Cor. Sec.

MARKETS

DETROIT WHOLESALE MARKET.

July 26, 1911.

Grains and Seeds.

Wheat.—While movements of wheat have been heavy during the past week, the market remains in a fairly healthy condition owing to several influencing factors. In the first place, prices are now on an export basis, 200,000 bushels having been worked into export channels on Monday alone in Chicago. Then there is considerable news of crop damage coming in, which has a tendency to steady the market even under heavy receipts of winter wheat. Large areas in all the spring wheat states are reported to be affected with black rust, and with several weeks intervening before the crop will be harvested, it is figured that there is likely to be a further shrinkage in an already reduced crop promise since the issuing of the July reports. In addition to this the lateness of the Canadian crop and the cold weather generally prevailing are bullish factors in the market. Foreign markets remain firm under a reported loss in the Russian crop of approximately 120,000,000 bushels, and with prices here on an export basis and every prospect that Europe may be in need of large quantities of American wheat there is promise of a steady market, even with a rapidly increasing visible supply of the grain. Receipts at southwestern points have dropped off and are now smaller than at the same time last year. One year ago No. 2 red wheat closed in this market at \$1.06. Quotations for the week are:

	Red.	White.	Sept.	Dec.
	No. 2	No. 1		
Thursday	85½	83	87½	91½
Friday	85½	82¾	87½	91½
Saturday	85½	83¼	87½	92
Monday	85½	82¾	87½	91½
Tuesday	84¾	82¼	87½	91
Wednesday	85¾	82¾	87½	91½

Corn.—General crop advices appear more favorable, and this market has suffered a slight decline during the week. Country shipments have also increased considerably in volume. More or less general rains throughout the country have caused an improvement in crop conditions, although the usual local crop losses from hail storms and heavy winds have been reported. No. 2 corn sold in this market at 66c one year ago. Quotations for the week follow:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	67½	68½
Friday	67½	68½
Saturday	67½	68½
Monday	67½	68½
Tuesday	67	68
Wednesday	66½	67½

Oats.—This market declined sharply under hedging sales against the newly harvested crop, and favorable weather conditions for threshing. One year ago standard oats sold in this market at 46c. Quotations for the week are:

	Standard	No. 3
		White.
Thursday	46½	45½
Friday	46	45
Saturday	45	44
Monday	43	42½
Tuesday	40	39½
Wednesday	40	39½

Beans.—No change has been made in the quotations, which are nominal with little actual trading in the product, little of last year's product remaining in growers' hands. Quotations for the week are:

	Cash.	Oct.
Thursday	\$2.20	\$2.05
Friday	2.20	2.05
Saturday	2.20	2.05
Monday	2.20	2.05
Tuesday	2.20	2.05
Wednesday	2.20	2.05

Clover Seed.—This market remains inactive at last week's quotations. Crop prospects and the demand for mid-summer seeding may soon be expected to figure in price making. Quotations for the week are:

	Prime.	Oct.	Alsike.
Thursday	\$9.75	\$9.50	\$9.00
Friday	9.75	9.50	9.00
Saturday	9.75	9.50	9.00
Monday	9.75	9.50	9.00
Tuesday	9.75	9.50	9.00
Wednesday	10.00	9.75	9.00

Rye.—No. 1 is quoted at 77c per bu., which was last week's quotation.

Visible Supply of Grain.

	This week.	Last week
Wheat	34,394,000	29,153,000
Corn	8,517,000	10,581,000
Oats	10,901,000	12,061,000
Rye	13,000	17,000
Barley	902,000	767,000

Flour, Feed, Provisions, Etc.

Flour.—Market is slow with prices lower. Quotations are:

Clear	4.00
Straight	4.25
Patent Michigan	4.75
Ordinary Patent	4.60

Feed.—Bran, middlings and corn meal are lower. Carlot prices on track are: Bran, \$25 per ton; coarse middlings, \$26; fine middlings, \$27; cracked corn, \$29; coarse corn meal, \$28; corn and oat chop, \$28 per ton.

Hay and Straw.—Hay steady at last week's advance. All kinds of straw quoted lower. Quotations on baled hay in car lots f. o. b. Detroit are: No. 1 timothy, \$21@23; No. 2 timothy, \$19@20; clover, mixed, \$19@20; rye straw, \$7.50; wheat and oat straw, \$7 per ton.

Potatoes.—Old stock out of the market. New gradually becoming more plentiful and prices are slowly receding from the very high range which has ruled for some weeks. Now quoted at \$1.60@1.75 per bu.

Provisions.—Family pork, \$17@17.50;

mess pork, \$16.50; medium clear, \$16@17; smoked hams, 14@16c; briskets, 10½@11½c; shoulders, 10½c; picnic hams, 9½c; bacon, 14@16c; pure lard in tierces, 8½c; kettle rendered lard, 9½c per lb.

Dairy and Poultry Products.

Butter.—Creameries moved up a cent on Tuesday, thus keeping pace with Elgin and other outside markets. Market very firm. Quotations: Extra creamery, 25c; firsts, do., 24c; dairy, 18c; packing stock, 17c per lb.

Eggs.—Little change in the situation although cooler weather prevails and the quality of receipts should improve. Fresh eggs, case count, cases included, are quoted at 14½c per dozen.

Poultry.—Receipts show a good increase and prices, noticeably on chickens, are lower. Quotations are: Live—Hens, 13@13½c; old roosters, 8@10c; turkeys, 14@15c; geese, 8@9c; ducks, 12@13c; broilers, 17@18c per lb.

Cheese.—Michigan, old, 17c; Michigan, late, 13@14c; York state, new, 13½@14c; Swiss domestic block, 16@18c; cream brick, 13@14c.

Veal.—Market steady at last week's advance. Fancy, 10½@11c; choice, 8@9c per lb.

Fruits and Vegetables.

Cabbage.—Steady. Selling at \$2.50@2.75 per bbl. for home-grown.

Pineapples.—\$3.50@3.75 per case.

Currents.—In light supply and selling at \$3@3.50 per bu. for red.

Blackberries.—Lawtons quoted at \$3.50@4 per bu.

Raspberries.—Scarce and higher. Offerings light and of inferior quality, due to dry weather. Red, \$4.50@5 per bu; black, \$1.75@2 per 16-qt. case.

Huckleberries.—In light supply and higher. Quoted at \$3.75@4 per bu.

Apples.—Although the trade is strong, supplies are running in excess of the demand and this, together with rather low quality, has brought a material reduction in prices. New Michigan grown are quoted at 75c@1.25 per bu.

OTHER MARKETS.

Grand Rapids.

Early home-grown potatoes are still a luxury, prices on Tuesday morning's market ranging from \$2@2.15 per bu. Other vegetables sold as follows: Radishes, 5c; onions, 8@10c; leaf lettuce, 50c; head lettuce, 75c; cucumbers, 30@60c; celery, 10@15c; tomatoes, \$1; corn, 8@12c; string beans, \$2. Friut is selling this week as follows: Plums, \$2; huckleberries, \$1.50@1.60; apples, 25@35c. Bean shippers report a good market for this season of the year, prices to farmers being around \$2 for white pea and \$2.75@3 for red kidney. The Michigan crop of beans gives excellent promise and with an increased acreage of 20 per cent over last year, the estimated total yield for the state is seven million bushels, or a record-breaking crop. Dressed hogs are worth 8½c. No. 2 red wheat is quoted at 77c; oats, 42c. Eggs are half a cent higher than last week, fresh stock bringing 15½c.

Chicago.

Wheat.—No. 2 red, 85@86c; Sept. 87½c; Dec., 91½c per bu.

Corn.—No. 2, 63@63½c; Sept., 62½c; Dec., 60¼c per bu.

Oats.—No. 2 white, 40@41c; Sept. 37½c; Dec., 42¼c.

Barley.—Malting grades, 80c@\$1 per bu; feeding, 60@70c.

Butter.—Market a trifle easier although prices remain unchanged. Business only moderately active. Quotations: Creameries, 19@24c; dairies, 18@22c per lb.

Eggs.—Cooler weather has increased consumption and likewise brought improvement in the quality of the receipts and prices have advanced accordingly. Quotations: Prime firsts, 16c; firsts, 15c; at mark, cases included, 5@12c per doz.

Potatoes.—Larger receipts and improved prospects for the new crop in many sections are gradually forcing prices to a lower level. Good to choice new now selling at \$4@4.25 per bbl.

Beans.—Market very firm with choice hand-picked pea beans showing another good advance. Choice hand-picked pea beans are quoted at \$2.33@2.38 per bu; prime, \$2.10@2.20; red kidneys, \$3.50@3.85 per bu.

Hay and Straw.—Hay holding firm at the recently established higher range. Straw remains unchanged. Quotations: Choice timothy, \$25@26; No. 1 timothy, \$22.50@24; No. 2 do. and No. 1 mixed, \$20@21.50; No. 3 do. and No. 2 mixed, 16.50@18; rye straw, \$8@8.50; oat straw, \$6.50@7; wheat straw, \$6@6.50 per ton.

New York.

Butter.—Market remains firm at last week's advance. Creamery specials are quoted at 26½c; extras, 25@25½c; firsts, 22½@23½c; seconds, 21@22c; thirds, 19@20c.

Eggs.—Market firm at an advance of fully 2c since last week. Fresh gathered extras, 22@25c; firsts, 18@19c; seconds, 15@17c; western gathered whites, 19@22c per dozen.

Poultry.—Dressed—Irregular. Turkeys 12@15c; fowls, 11@15½c; western broilers, 17@21c.

Boston.

Wool.—Active transactions in wool both east and west follow a fortnight of almost complete stagnation. An authoritative minimum estimate places the amount of domestic wool transferred between 5,000,000 and 6,000,000 pounds. This large amount of business was quietly put through by local merchants. Leading worsted mills have been the prominent buyers. Prices as a whole show no change, although on certain grades of wool many dealers are asking higher prices and are getting them. The leading domestic quotations range as follows: Ohio and Pennsylvania fleeces—Delaine washed, 29@30c; XX, 27@28c;

fine unmerchanted, 21@22c; half-blood combing, 25@26c; ¾-blood combing, 24½@25½c; ¼-blood combing, 23½@24c; delaine unwashed, 24½@25c; fine unwashed, 20@21c. Michigan, Wisconsin and New York fleeces—Fine unwashed, 18@19c; delaine unwashed, 23½@24c; ½-blood unwashed, offered at 25c. Kentucky, Indiana and Missouri—¾-blood, offered at 24c; ¼-blood, 23@24c.

Elgin.

Butter.—Market firm at 25c per lb., which is an advance of 1c over last week's quotation. Output for the week, 936,300 lbs., as compared with 1,023,400 lbs. for the previous week and 967,700 lbs. for the corresponding week of last year.

THE LIVE STOCK MARKETS.

Buffalo.

July 24, 1911.

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

Receipts of stock here today as follows: Cattle, 120 cars; hogs, 65 double-decks; sheep and lambs, 52 double-decks; calves 1,800 head.

With 120 loads of cattle on our market here today, and 25,000 reported in Chicago, everything of good quality of all grades sold strong 15@25c higher than last week. Market was active and maintained its buoyancy until the close. Everything sold. At present there seems to be a short supply of good cattle, especially cattle weighing from 1,350 to 1,500 lbs. We would not be surprised to see this class of cattle sell much higher than present prices for the next 60 to 90 days. The stockers and feeders that are coming are of inferior quality and we anticipate better cattle and better prices from now on.

We quote: Best 1,350 to 1,500-lb. steers \$6.60@6.90; good prime 1,200 to 1,350-lb. steers, \$6.25@6.50; best 1,100 to 1,200-lb. shipping steers, \$5.65@6.25; medium butcher steers, 1,000 to 1,100 lbs., \$5.25@5.75; light butcher steers, \$4.75@5.25; best fat cows, \$4.75@5.25; fair to good do., \$3.75@4.35; common to medium do., \$3@3.50; trimmers, \$1.75@2.75; best fat heifers, \$5.75@6; good do., \$5@5.40; fair to good do., \$4.25@4.85; stock heifers, \$3.25@3.50; best feeding steers, dehorned, \$4@4.25; common do., \$3@3.25; best butcher and export bulls, \$4.50@5; bologna bulls, \$3.50@4; stock bulls, \$3@3.25; best milkers and springers, \$5@60; common to good do., \$2@30.

Good milkers and springers steady. Common kind hard to sell at satisfactory prices.

Hogs.—With fairly liberal receipts here and western points reporting heavy receipts and lower prices, our market opened slow with prices generally 10@15c lower than the close of last week.

The bulk of the selected, sorted yorkers sold from \$7@7.10, while the mixed and medium weights went mostly to local packers at \$7@7.05. Odd bunches of mediums and heavies around \$6.75@6.90. Stag hogs all the way from \$6.50@6.90, according to weight and quality. Pigs and light yorkers sold around \$6.70@7, according to weight and quality. Rough sows generally \$5.90 with a few extra quality at \$6. Stags sold from \$4.75@5.25. Supply fairly cleaned up; closing steady.

The lamb market ruled a quarter lower than a week ago. Yearlings and sheep steady. Prospects steady.

We quote: Best spring lambs, \$7@7.25; wethers, \$4.25@4.60; cull sheep, \$1.50@3; bucks, \$2.50@2.75; yearling lambs, \$5.50@5.75; handy ewes, \$3.50@3.75; common ewes, \$3@3.25; veals, choice to extra, \$8.25@8.50; fair to good do., \$7@7.25; heavy calves, \$3.50@4.50.

Chicago.

July 24, 1911.

Cattle Hogs Sheep
Received today 26,000 42,000 26,000
Same day last year 29,613 34,094 25,561
Received last week 51,606 129,112 105,572
Same week last year 66,066 87,664 113,164

General surprise was manifested this morning when a sale was made of 20 head of fancy Iowa steers that tipped the scales at 1,401 lbs. at \$7.15, beating any previous transaction of the summer by a dime. The general market was active at steady prices, with choice beefs quoted stronger to 10c higher, following an advance of 15@25c in cattle last week. Hogs opened this morning slow and a nickel lower, but firmed up later and sold actively at last Saturday's prices, the range being \$6.15@6.85. Boars sold at \$2.50@3 and stags at \$6.80@7.40, all stags selling subject to 80 lbs. dockage per head. Government throwouts brought \$2.50@5, while pigs sold for \$4@6.55, strong-weights averaging around 130 to 135 lbs. going the highest, and little grassy pigs averaging 30 to 45 lbs. the lowest. Sheep, which declined generally 10@25c last week, were off about a dime more, with a very poor demand. Range sheep declined mostly 25@40c last week, and were dull today, with a sale of 1,000 Oregon range yearlings at \$4.15. Spring lambs advanced chiefly 15@25c last week, the best landing at \$7.40 for both natives and range flocks, and another up-turn today carried fancy Washington range lambs that averaged 75 lbs. up to \$7.60, there being 1,600 head in the flock. Lambs sold all the way down to \$3, while ewes were salable at \$1.25@4; wethers at \$3.50@4.65, bucks at \$2@2.75 and yearlings at \$4@5.15. Yearling breeding ewes were salable at \$4.10@4.50; feeding lambs at \$5@5.25; feeding yearlings at \$3.65@4.10; feeding wethers at \$3.50@3.75 and feeding ewes at \$2.50@3.

Cattle are marketed too irregularly to admit of the best results to owners, country shippers persisting in crowding an extremely large share of the week's supply into the Monday receipts, while by Thursday the offerings dwindle down to extremely small proportions. Of course, this tends to make a poor market at the beginning of the week and a much better outlet for sellers later, as was the case last week, the Monday decline of 10c being followed by sharp upturns later in the week on good buying orders. The bulk of the week's transactions in beef steers took place at \$5.50@6.60, with the commoner light-weight grassy steers going at \$4.75@5.50 and the choicest corn-fed beefs at \$6.50@7. Fat little yearling steers brought \$6@6.80, and exporters purchased good numbers of good steers at \$6@6.60. Butchering stuff was active and decidedly higher, with a larger showing of fancy heifers than usual. Cows and heifers brought \$3.30@6.75, while canners sold at \$1.75@2.70, cutters at \$2.75@3.35 and bulls at \$2.75@5.25. The stocker and feeder trade has developed considerably more animation since the recent good rains in various sections, and higher prices are paid for the choicer offerings. The rains checked the wild rush of these cattle to market from southwestern sections and at the same time created a demand for them. Stockers have been selling at \$3@4.65 and feeders at \$4.10@5.50, but very few lots were good enough to sell above \$5. The greater part of the thin southwestern cattle have been marketed at Kansas City and other Missouri river markets, the principal share going to Kansas City. Calves have been selling at \$3@6.50 per 100 lbs. for common to medium and at \$6.75@8.25 for the better class, the advance being due to a larger demand for choice light-weight vealers. Milk and springers are in large demand at \$30@65 per head, prices showing an upward tendency for desirable cows.

Hogs that are well finished and of medium weights are sure to sell well these times, the market showing a firm undertone, with the long predicted \$7 hogs putting in an appearance a few days ago. There is a very good showing of choice hogs, yet the percentage of thin, grassy hogs has been increasing, as is usual at this season of the year, and this has tended to create a widening out in prices between the poorest and the best lots. The popular weights are from 190 to 240 lbs., with pigs selling at a big discount, particularly those of light weights, while stags go at a liberal premium over the prices paid for the best barrows. Little pigs have been crowding the St. Louis and Kansas City markets, and pig pork has accumulated in packers' hands. The provision trade is still active, and so is the fresh pork trade, and good hogs are all wanted. It seems a great pity that so many farmers have been compelled by dried-up pastures and lack of feed to sacrifice their young hogs prematurely, and the recent rains are tending to stop this movement.

Sheep and lambs have been selling well or otherwise according to quality and weight, with far the largest demand for choice spring lambs not too heavy. Killers pay willingly a liberal premium for choice spring lambs, either natives or rangers, over the price paid for yearlings of the same grade, and the prices paid for wethers and ewes are extremely low compared with those for the best lambs. The truth is, the public clamors for lamb meat and is willing to pay well to get it. Heavy lambs, yearlings and sheep continue to be discriminated against and go at low figures, and the large offerings of thin stock that crowd the market have to sell at absurdly low figures, making net losses to their feeders in most cases. The ranges are now shipping yearlings and range lambs in fast increasing volume, and these include a great many feeders, which are bought up at low prices, while breeding yearling ewes are in good demand.

Horses were marketed last week in larger numbers than during the preceding week, while there was the usual large increase in offerings over those of a year ago. The numerous inferior animals that showed up sold as badly as ever, and sales at \$75@125 per head were rather frequent. Drivers sold at \$150@225, with a fair sale part of the time, but the principal demand was for workers weighing 1,500 to 1,600 lbs., and these sold \$15@25 per head higher than three weeks ago. Fair to good work horses go at \$150@200 and good drafters at \$210@250, a fancy kind being scarce and saleable at \$275@320. Farmers are making a mistake when they sell off their thin horses, and it would pay well to finish them off properly.

LIVE STOCK NOTES.

Cattle feeders have been marketing their matured cattle, taking the ground that they can hardly make sufficient weight to pay for their feed from now on, with fly time approaching, when cattle are likely to lose instead of putting on flesh.

Prime Holstein cows are selling at the Chicago stock yards for \$60 per head or even higher, and good ones are going at \$50 and over, with not many prime cows offered. Inferior cows are selling as low as \$30.

There has been a rally in prices for horses due to the unusual numbers that died during the recent torrid spell of weather, necessitating large purchases to take their places. Farmers have been holding back a great many horses during the small grain harvest.

South Dakota farmers who are suffering from the drouth are in numerous instances compelled to part with their cattle prematurely, and one farmer is offering for sale about 400 head of good feeding cattle that are from two and a half years old to five years old, mostly of Shorthorn and Hereford breeding, with some black cattle. Farmers in that state have to a great extent taken up cattle breeding and fattening, and great disappointment is expressed because of the backset this year.

THIS IS THE LAST 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.
July 27, 1911.

Cattle.

Receipts, 1,227. Market active at last week's prices on all grades.

We quote: Best dry-fed steers and heifers, \$5.50@6.25; steers and heifers, 1,000 to 1,200, \$5@5.25; steers and heifers 800 to 1,000, \$4.25@5; grass steers and heifers that are fat, 800 to 1,000, \$4.25@5; grass steers and heifers that are fat, 500 to 700, \$3.25@4.25; choice fat cows, \$4@4.25; good fat cows, \$3.50@3.75; common cows, \$3@3.25; canners, \$1@2.50; choice heavy bulls, \$3.75@4; fair to good bolognas, bulls, \$3.25@3.50; stock bulls, \$3@3.25; choice feeding steers, 800 to 1,000, \$4.50@4.75; fair do, 800 to 1,000, \$3.75@4.25; choice stockers, 500 to 700, \$4@4.50; fair stockers, 500 to 700, \$3.50@3.75; stock heifers, \$3@3.50; milkers, large, young, medium age, \$4@5; common milkers, \$2.50@3.5.

Spicer & R. sold Breitenbeck 32 butchers av 690 at \$4.65; to Parker, W. & Co. 30 do av 763 at \$4.50; to Heinrich 29 do av 892 at \$5.25; to Mich. B. Co. 32 do av 800 at \$4.75, 1 bull weighing 1,200 at \$4, 4 do av 732 at \$3.75, 1 cow weighing 1,030 at \$3.50, 18 butchers av 790 at \$4.40, 21 do av 617 at \$4, 12 do av 600 at \$4, 4 do av 650 at \$4.15, 5 bulls av 586 at \$4.40; to Rattkowsky 1 cow weighing 1,100 at \$4.35, 3 heifers av 607 at \$3.35.

Roe Com. Co. sold Sullivan P. Co. 9 butchers av 533 at \$3.25; to Mich. B. Co. 2 bulls av 575 at \$3.50; to Applebaum 4 butchers av 800 at \$4, 1 cow weighing 1,150 at \$3.50.

Haley & M. sold Jettka & Son 4 steers av 905 at \$4.90; to Lachalt 10 butchers av 788 at \$4.70, 1 cow weighing 1,020 at \$4.35; to Rattkowsky 2 steers av 825 at \$4, 2 heifers av 760 at \$3.75, 1 cow weighing 1,060 at \$3.75, 1 heifer weighing 720 at \$4.75, 4 steers av 1,350 at \$6, 1 do weighing 1,500 at \$6.25; to Mich. B. Co. 1 cow weighing 950 at \$3, 3 heifers av 773 at \$4.25, 1 bull weighing 1,040 at \$4; to Applebaum 3 butchers av 600 at \$3.85, 1 bull weighing 440 at \$3; to Regan 17 butchers av 540 at \$3.85.

Bishop, B. & H. sold Mich. B. Co. 5 cows av 940 at \$4, 2 steers av 865 at \$5, 25 do av 1,006 at \$5.50, 14 do av 907 at \$5.10; to Goose 2 cows av 905 at \$3.25, 5 heifers av 792 at \$3.65, 2 oxen av 1,535 at \$3.50, 1 bull weighing 800 at \$3.30, 1 cow weighing 820 at \$2.50; to Regan 6 butchers av 716 at \$3.90; to Parker, W. & Co. 2 cows av 865 at \$2.50, 9 do av 961 at \$3.25, 1 bull weighing 1,040 at \$3.75, 5 canners av 910 at \$2.50; to Kamman B. Co. 10 butchers av 790 at \$4.25; to Regan 4 do av 580 at \$3.65, 8 do av 752 at \$3.90; to Schuer 3 cows av 813 at \$2.50, 2 do av 885 at \$3; to Sullivan P. Co. 2 bulls av 1,225 at \$4, 1 do weighing 1,070 at \$3.75; to Cooke 9 steers av 980 at \$5.70; to Coggins 18 feeders av 730 at \$4.35; to Kamman B. Co. 7 steers av 1,000 at \$5.50, 4 cows av 825 at \$3.75, 5 steers av 816 at \$5; to Goose 3 cows av 950 at \$3.75; to Parker, W. & Co. 6 steers av 1,013 at \$5.50, 10 butchers av 812 at \$4, 2 cows av 1,025 at \$3.50, 1 bull weighing 1,100 at \$3.50; to Sullivan P. Co. 3 heifers av 850 at \$5.25, 1 bull weighing 680 at \$3, 2 cows av 890 at \$3, 5 butchers av 752 at \$3.85, 1 bull weighing 1,180 at \$4, 1 cow weighing 1,380 at \$5; to Rattkowsky 3 cows av 1,137 at \$3.50; to Sullivan P. Co. 2 do av 865 at \$3.50, 5 heifers av 780 at \$4.50, 7 butchers av 601 at \$3.50; to Schuer 4 cows av 955 at \$3, 1 do weighing 850 at \$1; to Parker, W. & Co. 2 bulls av 1,225 at \$3.75.

Georgia & S. sold Sullivan P. Co. 3 cows av 1,220 at \$4.50, 2 do av 910 at \$2.50, 5 do av 1,056 at \$3.25, 7 steers av 871 at \$4.85, 8 do av 746 at \$4.

McLaughlin sold Kamman 2 cows av 950 at \$3.75, 2 do av 1,075 at \$3.50.

Same sold Erban Bros. 2 bulls av 550 at \$3.50, 1 do weighing 880 at \$4.

Veal Calves.

Receipts, 862. Market dull and 50c lower than the close last week. Best, \$7.50@7.75; others, \$3.50@7; milch cows and springers steady.

Spicer & R. sold Newton B. Co. 14 av 150 at \$7.50, 6 av 225 at \$4, 5 av 200 at \$4; to Applebaum 4 av 125 at \$5, 8 av 150 at \$7.25; to Goose 2 av 230 at \$4, 8 av 140 at \$6.10; to Mich. B. Co. 2 av 155 at \$7.50; to Thompson Bros. 1 weighing 250 at \$3.50, 7 av 155 at \$7.50, 9 av 145 at \$6.25; to Rattkowsky 6 av 155 at \$6.25, 3 av 150 at \$7.50.

Haley & M. sold Newton B. Co. 1 weighing 160 at \$5, 6 av 160 at \$7.50; to Jettka & Son 5 av 130 at \$7; to Rattkowsky 13 av 125 at \$4.

Roe Com. Co. sold Sullivan P. Co. 2 av 140 at \$3; to Mich. B. Co. 1 weighing 290 at \$6, 10 av 158 at \$7.50; to Rattkowsky 7 av 180 at \$4; to Goose 7 av 145 at \$7.25; to McGuire 1 weighing 110 at \$5, 19 av 155 at \$7.50, 9 av 150 at \$7.50; to Sullivan P. Co. 2 av 100 at \$5, 5 av 165 at \$7, 22 av 160 at \$6.50, 14 av 155 at \$7.50.

Stephens sold Newton B. Co. 2 av 100 at \$5, 8 av 125 at \$7.

McLaughlin sold Bray 4 av 240 at \$4, 6 av 155 at \$7.

Bishop, B. & H. sold Newton B. Co. 2 av 140 at \$8; to Goose 5 av 155 at \$4.16; to Mich. B. Co. 5 av 160 at \$7.50; to Hammond, S. Co. 2 av 170 at \$6, 14 av 160 at \$8, 6 av 155 at \$7.50, 4 av 150 at \$6, 12 av 150 at \$7.50; to Parker, W. & Co. 27

av 160 at \$7.60, 5 av 135 at \$7.75, 11 av 150 at \$7.75, 7 av 150 at \$7.50, 1 weighing 120 at \$7.50, 4 av 150 at \$7.75; to Goose 10 av 160 at \$4.50, 5 av 200 at \$4.50.

Kendall sold Mich. B. Co. 4 av 150 at \$7.60.

Duelle sold same 13 av 155 at \$7.50.

Sheep and Lambs.

Receipts, 2,427. Market dull and 50c lower than last week's close. Sheep 25c lower; common grades very dull.

Best lambs, \$6@6.25; fair to good do., \$5.25@5.75; light to common do., \$3.50@4.50; yearlings, \$4@4.50; fair to good sheep, \$3.25@3.75; culls and common, \$2@2.50; few extra good lambs at \$6.50.

Bishop, B. & H. sold Newton B. Co. 15 lambs av 72 at \$6.50; to Mich. B. Co. 37 sheep av 110 at \$3.75, 13 do av 90 at \$3.35; to Bray 44 lambs av 72 at \$6, 91 do av 73 at \$6.15, 76 do av 63 at \$6.15; to Sullivan P. Co. 8 yearlings av 91 at \$4, 14 sheep av 95 at \$3, 17 do av 85 at \$3.25, 25 lambs av 70 at \$6.25; to Thompson Bros. 40 do av 53 at \$4.25; to Fitzpatrick Bros. 25 sheep av 90 at \$3.50, 6 do av 68 at \$2, 12 do av 85 at \$3.50, 11 lambs av 70 at \$4, 75 do av 56 at \$4.50, 24 do av 75 at \$6.50; to Harland 27 do av 70 at \$6; to Fitzpatrick Bros. 23 sheep av 120 at \$3.50, 8 do av 100 at \$3.50, 36 yearlings av 90 at \$4.25; to Parker, W. & Co. 33 lambs av 70 at \$6.25, 40 do av 70 at \$6.25, 22 do av 67 at \$6.

Spicer & R. sold Newton B. Co. 19 lambs av 68 at \$6.25; to Mich. B. Co. 21 do av 73 at \$6.25, 33 do av 74 at \$6.15; to Barlage 9 do av 72 at \$6; to Thompson Bros. 20 sheep av 100 at \$3.65, 4 do av 93 at \$2.50; to Harland 19 lambs av 57 at \$5.50; to Kamman, B. Co. 20 do av 52 at \$5.50, 19 mixed av 60 at \$3.75.

Stephens sold Newton B. Co. 17 sheep av 90 at \$3, 60 lambs av 68 at \$6.35.

McLaughlin sold Bray 10 sheep av 126 at \$3, 9 lambs av 75 at \$6.

Haley & M. sold Newton B. Co. 4 sheep av 135 at \$3, 10 lambs av 59 at \$5, 72 do av 75 at \$6.50, 10 do av 66 at \$5; to Breitenbeck 88 do av 65 at \$6.10; to Fitzpatrick Bros. 31 do av 68 at \$6.25, 10 do av 74 at \$6.25.

Roe Com. Co. sold Mich. B. Co. 4 sheep av 105 at \$3.50; to Sullivan P. Co. 14 do av 120 at \$2.75; to Newton B. Co. 42 lambs av 68 at \$5.40, 64 do av 65 at \$5.40; to Sullivan P. Co. 12 do av 75 at \$5.40, 3 sheep av 150 at \$3.25; to Mich. B. Co. 49 lambs av 70 at \$6.

Taggart sold Hammond, S. & Co. 10 sheep av 110 at \$3.50, 50 lambs av 67 at \$6.50.

Weeks sold Barlage 12 lambs av 65 at \$5.50, 11 do av 77 at \$4.50.

Hogs.

Receipts, 2,103. Market 15@20c higher than last Thursday; steady to 10c higher than Wednesday.

Range of prices: Light to good butchers, \$7@7.10; pigs, \$6.75@6.80; light yorkers, \$7@7.10; heavy, \$7@7.10.

Spicer & R. sold Hammond, S. & Co. 153 av 190 at \$7.10.

Haley & M. sold same 140 av 180 at \$7.10, 50 av 160 at \$7.05, 65 av 150 at \$7.

Bishop, B. & H. sold Parker, W. & Co. 1,025 av 180 at \$7.10, 213 av 160 at \$7.05.

Roe Com. Co. sold Sullivan P. Co. 225 av 190 at \$7.10, 120 av 170 at \$7.

Bishop, B. & H. sold Port Huron Creamery Co. 56 av 118 at \$6.90.

Friday's Market.

July 21, 1911.

Cattle.

Receipts this week, 944; last week, 891. Market steady at Thursday's prices. We quote: Best steers and heifers, \$5.35@5.75; steers and heifers, 1,000 to 1,200, \$4.75@5.25; steers and heifers, 800 to 1,000, \$4.25@5; grass steers and heifers that are fat, 800 to 1,000, \$4.25@5; grass steers and heifers that are fat, 500 to 700, \$4@4.50; choice fat cows, \$4@4.25; good fat cows, \$3.50@3.75; common cows, \$3@3.25; canners, \$1.75@2.75; choice heavy bulls, \$3.75; fair to good bologna bulls, \$3.25@3.65; stock bulls, \$3@3.25; choice feeding steers, 800 to 1,000, \$4.50@4.75; fair feeding steers, 800 to 1,000, \$3.75@4.25; choice stockers, 500 to 700, \$4@4.25; fair stockers, 500 to 700, \$3.50@3.75; stock heifers, \$3@3.50; milkers, large, young, medium age, \$4@5; common milkers, \$2.50@3.5.

Veal Calves.

Receipts this week, 1,339; last week, 902. Market dull and bulk of sales 50c lower than Thursday's close; few choice, \$8; bulk of sales, \$7.50 for good grades. Milch cows and springers steady.

Sheep and Lambs.

Receipts this week, 2,963; last week, 1,091. Market dull at Thursday's close; run light. Best lambs, \$6.50; fair to good lambs, \$6@6.25; light to common lambs, \$4@4.50; yearlings, \$4.50@5; fair to good sheep, \$3.50@3.75; culls and common, \$2@3.

Hogs.

Receipts this week, 2,818; last week, 2,587; market 5c lower than on Thursday. Range of prices: Light to good butchers, \$6.75@6.80; pigs, \$6.50; light yorkers, \$6.75@6.80; heavy, \$6.75.

LIVE STOCK NOTES.

Farmers who carry on extensive farming operations are counted upon as among the buyers of high-class horses with plenty of strength. It requires three strong horses to move along with the binder day after day in succession in front of a modern self-binder, cutting and binding big crops of wheat, rye and other grains. The team power is a highly important factor when crops are to be cut.

The appearance of thin, grassy hogs in the markets of the middle west in growing numbers tends to create a widening tendency in prices between these and choice corn-fed swine. Killers are quick to draw the line against hogs that make a poor showing on the hooks, and grassy lots must be sold on their merits.

The big discount paid for such hogs should deter owners who have sufficient grass and corn from sending them to market prematurely, but, unfortunately, there are many farmers whose pastures are destroyed by the drought and the hot weather and who have no recourse except to sacrifice their hogs for whatever they will bring. Recent weeks have seen a widening out of somewhat over 50c per 100 lbs. between the commonest and the best hogs, and as the grass-fed offerings are sure to come forward in still larger volume as the summer advances, the spread in prices is likely to be twice as great before very long.

The production of early spring lambs is growing in Kentucky, it having been an important source of profit for years, and there is a strong demand in the Chicago stock yards for choice breeding ewes to ship to that state. This demand from Kentucky, as well as from other states, is stimulated considerably by the prevailing belief that the present comparatively low prices will not remain very much longer and that it is best not to wait too long. Kentucky and Tennessee sheepmen have found the industry of producing early spring lambs pays well, taking one year with another, these being the first lambs to be marketed.

On a recent day a single car of hogs that arrived at the Chicago stock yards contained 46 dead ones. This is, fortunately, an exceptional case, although the same day the platform was strewn with dead hogs, the heat being simply terrific. At such times shipping hogs is a dangerous thing to do and should be avoided. At all times during the summer season light loading and chunks of ice in the cars are great helps.

The ruined pasturage in various parts of the country has resulted in forcing great numbers of thin sheep and lambs on the market prematurely, and, strange to say, many shipments of thin flocks have been made by sheepmen living in sections where grass and feed are abundant, thereby cheating themselves of the profits.

The ranges of Wyoming, Idaho and Utah are reported in fine condition, rains having been sufficient to produce a good growth of grass, and flocks of sheep are fattening rapidly. Average weights of the sheep are reported as much heavier than usual at this season of the year, and recently it was said that the holdings of flockmasters would average about ten pounds per head heavier than usual, but such gains are offset by the great falling off in numbers. It is stated on good authority that the "crop" now maturing will show a loss of around 35 per cent as compared with a year ago. Cattle in the above named states look well, but herds that formerly ran up in the thousands have been cut down to hundreds, and there is bound to be a greatly lowered supply for dry-lot feeders in the corn belt.

CROP AND MARKET NOTES.

Calhoun Co., July 18.—Threshing is in progress and wheat is not turning out well, but is of good quality as a rule. The price varies around 80c, being 78c at present. Threshers have advanced prices a cent per bushel this season. Oats, where not pounded by the hail, promise a bumper crop. Sunday a heavy wind and rain caused many of them to lodge, and in streaks a heavy hail storm pounded the bulk of the crop from the straw. Old oats are being sold around 45 cents. Corn had not looked better in years up to Sunday's storm. Some fields are still standing, but many are badly blown over and riddled by the hail. We have three pieces the farthest less than a half mile apart. One was literally shredded by the hail while the opposite one was not touched, but badly blown over. The center field was also injured by the hail, but not so badly. There are many opinions as to how this hail injured corn will turn out. Of course, it must be badly injured, but I have considerable faith in its making quite a crop. About half of our orchards were struck by the hail, which will cause considerable injury to exposed apples on the windward side. The only object I have discovered in having orchards scattered over a diameter of ten miles as ours are is that some of them usually escape bad storms. Fruit has been quite plentiful, but is in good demand as the supply of canned fruit was getting pretty well exhausted. Raspberries have been selling for a shilling, blackberries and huckleberries at ten cents per quart. New seedling is small, but I do not think much of it succumbed to the drought entirely. There will be little clover seed and the price is soaring. Potatoes as a rule do not look well. Early ones blighted considerably and late ones have been caught by the dry weather but may recuperate after the rain. Farmers in the hail region are rather discouraged. Wheat and hay was light and the oats and corn is badly injured.

Livingston Co., July 17.—The long drought has at last been relieved by showers which have been general over the county, but not until new seeding had been practically ruined, pastures dried up and all growing crops had suffered materially. Corn is the only thing that seems to have held its own, being the largest to the recollection of the writer, for this time of the year. The hot, dry weather was very seasonable for the securing of the hay crop, which was secured in excellent condition though it was the lightest crop in years. Wheat and rye were also secured in fine condition and wheat promises to be a heavy crop. Beans and late potatoes are looking fair, considering the extremely dry weather. Fruit promises well, though dropping quite badly. Haying and harvest help very scarce, with prices to suit the laborer.

Lapeer Co., July 17.—The drought, which

was becoming serious, was broken by fine local showers Saturday night and Sunday. Some hay and considerable wheat were caught out, but as the weather is fair and cooler today, with a brisk breeze not much damage will be done. Wheat threshing has begun and yield reported good. Barley is ready to cut and oats are turning. Corn and beans are looking fine. Most potato fields are good but some late planted ones are coming up unevenly on account of dry weather. Pastures had become quite dry and milk yield had fallen off.

ITINERARY OF THE "SOIL AND WHEAT SPECIAL."

As noted in the last issue, the Michigan Agricultural College, in co-operation with the State Millers' Association, will run a special institute train over several lines of railroad in southern Michigan during the first two weeks in August. The character of the lectures and demonstrations was described in the notice above referred to. Briefly reiterated, the subject of wheat culture in all its phases will be taken up, while demonstrations of bread made from different grades of wheat will interest the ladies, who are invited to attend the meetings which will be held in the coaches of the train. The itinerary of the train will be as follows:

Tuesday, August 1.

Dimondale, 8:00 a. m.; Eaton Rapids, 9:40 a. m.; Springport, 11:00 a. m.; Homer, 1:20 p. m.; Litchfield, 2:40 p. m.; Jonesville, 4:00 p. m.

Wednesday, August 2.

North Adams, 8:00 a. m.; Somerset Center, 9:30 a. m.; Brooklyn, 11:00 a. m.; Manchester, 1:15 p. m.; Clinton, 2:30 p. m.; Tecumseh, 4:00 p. m.

Thursday, August 3.

Adrian, 8:00 a. m.; Hudson, 9:30 a. m.; Pittsford, 11:00 a. m.; Hillsdale, 1:00 p. m.; Quincy, 2:40 p. m.; Coldwater, 4:00 p. m.

Friday, August 4.

Bronson, 8:00 a. m.; Burr Oak, 9:30 a. m.; Sturgis, 11:00 a. m.; White Pigeon, 1:00 p. m.; Constantine, 2:05 p. m.; Moorepark, 3:30 p. m.; Schoolcraft, 4:45 p. m.

Saturday, August 5.

Plainwell, 8:00 a. m.; Otsego, 9:30 a. m.; Allegan, 11:00 a. m.; Hopkins, 1:00 p. m.; Dor, 2:30 p. m.; Byron Center, 4:00 p. m.

Monday, August 7.

Caledonia, 8:00 a. m.; Middleville, 9:30 a. m.; Hastings, 11:00 a. m.; Nashville, 1:00 p. m.; Vermontville, 2:10 p. m.; Charlotte, 3:30 p. m.; Onondaga, 5:00 p. m.

Tuesday, August 8.

Concord, 8:00 a. m.; Tekonsha, 9:30 a. m.; Union City, 11:00 a. m.; Colon, 1:00 p. m.; Centreville, 2:45 p. m.; Three Rivers, 4:15 p. m.

Wednesday, August 9.

Jones, 8:00 a. m.; Vandalia, 9:30 a. m.; Cassopolis, 11:00 a. m.; Niles, 1:00 p. m.; Buchanan, 2:30 p. m.; Galien, 4:00 p. m.

Thursday, August 10.

Pokagon, 8:00 a. m.; Dowagiac, 9:30 a. m.; Decatur, 11:00 a. m.; Lawton, 1:00 p. m.; Mattawan, 2:30 p. m.; Kalamazoo, 4:00 p. m.

Friday, August 11.

Galesburg, 8:00 a. m.; Augusta, 9:30 a. m.; Battle Creek, 11:00 a. m.; Marshall, 1:10 p. m.; Albion, 2:30 p. m.; Parma, 4:00 p. m.

Saturday, August 12.

Addison Junction, 8:00 a. m.; Clark's Lake, 9:30 a. m.; Jackson, 11:00 a. m.; Rives, 1:00 p. m.; Leslie, 1:30 p. m.; Mason, 4:00 p. m.

A GREAT LAND AND APPLE SHOW FOR MICHIGAN.

Preliminary arrangements have been completed for the holding of a great land and apple show in the Coliseum at Grand Rapids during the second week in November. The officers in charge of the show will be: President, Edmund W. Booth, Grand Rapids; vice-presidents, D. H. Day, Glen Haven, R. F. Church, Chicago, and C. L. Lockwood, Grand Rapids; general manager, Jos. R. Taylor, Grand Rapids; secretary, John I. Gibson, Traverse City; treasurer, Elmer Slemmons, Grand Rapids; auditor, Hugh G. Gray, Grand Rapids; publicity manager, Arthur W. Stace, Grand Rapids. It is proposed by the promoters to make this the finest exhibition of Michigan apples ever gathered together, and to this end the Western Michigan Development Bureau has decided not to exhibit at the Chicago land show this year but to combine its energies with the promoters of the Grand Rapids show and make this first Michigan Land and Apple Show a fruit exposition to eclipse in extent and importance all previous achievements in this direction. When it is considered that the Michigan display was without question the most striking feature of the Chicago show last year, it may be expected that the exhibit which will be put up at Grand Rapids will advertise the state of Michigan far and wide as producing the finest fruit grown on the American continent. Besides the display of apples and other fruits there will be picking demonstrations, lectures on scientific methods of fruit growing and exhibits by manufacturers and others, which will add not a little to the educational value of the show. It is expected that the other Michigan development bureaus and fruit growers' organizations will co-operate in making the show representative of the fruit interests of the entire state. Among these organizations the Northeastern Michigan Development Bureau, the Upper Peninsula Development Bureau and the Original Fruit Belt Association of Southwestern Michigan are expected to make collective exhibits from these several sections of the state, which will insure a show fully representative of Michigan's possibilities in fruit production, with which those of no other state or section of the country are comparable.



Woman and Her Needs

At Home and Elsewhere



THE SORT OF KNOWLEDGE THAT COUNTS.

"Yes, I'm real glad I spent that two weeks in the city with Cousin Maud," said Mrs. Martin as she deftly patted and kneaded her bread. "And I don't mind telling you why, Miss Devereaux, for I know you will understand and you won't tell." Miss Devereaux, the teacher who had coaxed Mrs. Martin to take her in for the spring term, smiled sympathetically. Mrs. Martin was always entertaining.

"You see, I went there feeling decidedly awkward and not a bit sure of myself. I never spent two days in town before and am not much of a dresser and don't know the French names for plain eatables. Then, Maud is a great club-woman, and I always felt that club women must be a highly educated class. I've read some of the notices about their doings in the daily papers, and I believed that women who could talk about 'The Effect of the Renaissance on Italian Art,' Maeterlinck's 'Blue Bird,' 'Cosmic Consciousness' and Bacon's 'Key,' would be so far above me mentally that I would not dare to speak for fear of disgracing Maud. But, lands, it was just like it always is when you worry beforehand. If you don't worry then you don't worry at all, for you find when you get there, there wasn't anything to worry over."

"Maud was going to entertain her club the day after I got there and I was just sick. Seemed to me she might have given me a chance to get my sea legs, as it were, but there was no escape. 'What are you fussing about?' Maud said, when I hinted just a little as to my inward agitation. 'Didn't you use to teach school in the country? I'll bet when it gets down to real knowledge you know more in a minute than any of these Dames of the Modern Uplift. Why, there couldn't one of them pass an eighth grade examination, say nothing about getting a teacher's certificate.' I thought she was trying to comfort me, and I didn't say any more, but I hadn't the least idea she was speaking truth."

"Well, when the first two or three arrived in a bunch, Maud bustled around introducing me and trying to keep the fact of my embarrassment from becoming too evident. 'Mrs. Martin is from Midland county,' she explained, 'and she is anxious to see a city club at work.'

"Midland county," said one woman, looking at me through a glass on the end of a gold stick, 'Um-m, I don't believe I have my state map in mind. That is in the northern peninsula, isn't it?'

"Why, no," said another quickly, 'That is in the southern part of the state. St. Joe is in Midland county, you know.' Maud gave me a look, and some more ladies came in just then so we let Midland county find its own location."

"Oh, how do you do interest?" bubbled one of the new arrivals. 'My husband wants me to help him figure up the interest on some mortgages tonight, and I wouldn't have him know for worlds that I don't know how. He says a woman who can write such profound papers as I do, or at least papers with such profound names, ought to be able to work interest in her head.'

"I tried to make some baking powder biscuits last night," volunteered a fourth woman, 'and Jack says he is going to use them for golf balls. I made them just as the book says, and I don't see what was wrong. The oven wasn't hot when I had them mixed and I left them stand a half an hour, but I don't believe that would do any harm, do you?'

"By this time I was beginning to perk up quite a bit. I didn't know the difference between Maeterlinck's 'Blue Bird' and a common meadow blue bird, but I did know a bit about my own state, how to reckon interest and I had a fairly good knowledge of the chemical action of baking powder."

"But it took a dinner down town with

some of the real lights of the city to put me right in my own estimation. It was a real swell dinner, and I had that sick feeling all day long preceding it. Suppose they should serve something I didn't know how to eat, or I'd take the wrong fork? What would those folks think of an ignorant woman like me, for, of course, people who dined out so much, must know everything."

"Well, we had white fish for one thing. It was cut in pieces just large enough for a serving, dipped in crumbs and egg and fried beautifully. It was delicious, and I was just going to speak about it to my neighbor, when she said to the man the other side of her in a low voice, 'Say, what is this we are eating? You don't suppose it is frog legs, do you?'

"I kept still, but I breathed considerably easier. Further along in the menu came squabs with rashers of bacon, and I heard the girl across the table say, 'Do you know, I never can tell ham from ba-

con? This is ham, isn't it?' But when the French endive was served, that revived me completely. Of the whole 12 at the table, only two or three knew what they were getting."

"After that dinner, I enjoyed my visit immensely. It showed me that I wasn't such a complete ignoramus, and that, compared with the rest of the world I would average up pretty favorably. Some might know a few things I didn't know, but then, I knew a few things they didn't know. And, although I may be prejudiced, I believe I would rather have my knowledge to work with than the knowledge of those city club women. I don't know about the latest plays and the newest books and styles, but I do know where the important towns of my state are located, I have enough arithmetic to carry on business, and when it comes to cooking a good meal I don't take a back seat for anybody. And so long as I am just an ordinary working woman, with no great place to fill in the world, I think my knowledge is best for me."

DEBORAH.

FRENCH KNOTS IN EMBROIDERY—No. 5

By Mae Y. Mahaffy.

All too many embroiderers limit the use of French knots to finishing the centers or hearts of flowers. To be sure, these knots furnish a most acceptable, life-like finish to most flowers, when clustered closely, but irregularly in the space where the petals unite, but the practical use of the knots does not end in that function by any means. In old colonial days, tufting, made of candle wicking, and knots of floss vied with each other for favoritism, numerous designs being carried out in these rough

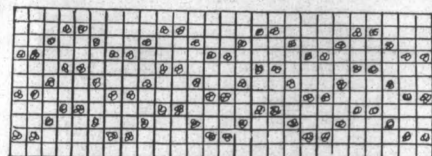


Figure 1.

outlines. Sets for the bedrooms were frequently embroidered in sprays in which several varieties of flowers were combined, blue and white or blue and yellow being favored colors. The outlines of these designs were as often as not carried out entirely in French knots, and very attractive is such embroidery, indeed."

In later years we are beginning to again make extensive use of French knots, utilizing them in rows with brier stitching and the like for simple decorative effects, or arranging them after cross stitch patterns for band trimmings, belts, card cases, bags, and numerous other



Figure 2.

articles. Figure 1 illustrates this sort of work. Any cross stitch or bead pattern will answer for such embroidery, and colors may be combined to suit one's fancy. If the back-ground material has no lines or bars by which one can guide the work a coarse meshed canvas may be basted over it, just as is sometimes done in cross stitch work, and the French knots are then made in the meshes, counting these squares as one proceeds with the design, if such help is necessary in following the pattern. Care must, of course, be exercised that the needle does not

pierce the canvas threads, as these must be clipped and withdrawn after the work is complete. A desirable pattern for French knots and stem stitch is shown in figure 2. The wild carrot designs are especially good for knot work, since the beauty of the flower is best brought out by some such needlework. This pattern may be utilized on towels, pillow cases, etc., to splendid advantage, space appearing for any desired initial.

In making the ordinary French knot

the needle is brought up to the right side of the fabric after the thread has been fastened beneath; it is then coiled or twisted around the needle from two to five times, according to the size of knot desired; the needle is then inserted just beside the spot where it first came from the wrong side, the twisted thread being held firm and close with the left hand to prevent uncoiling while the thread is drawn through. The amateur should practice this knot carefully before undertaking to use it on a fine piece, as, while it is not difficult to make, it requires practice to make it smooth and even. Where rows of these knots are to be made they should all be laid in the same direction, as this gives a better appearance than where the knots are made haphazard. The little group showing a needle in position in figure 3 illustrates the making of these knots. To one side of this group are two needle knots with stems. These are made in the same manner, except that the needle is brought up at what appears to be the end of the

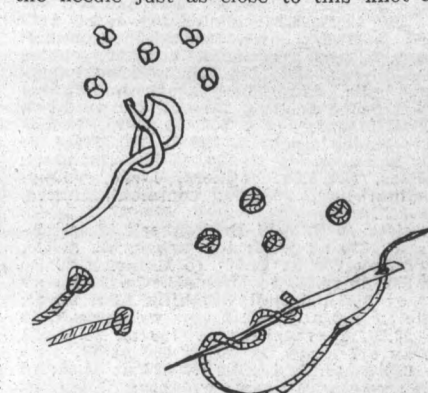


Figure 3.

possible, and bring it up at the point where the next knot should be. These knots cannot slip or be pushed to one side as the larger variety of the ordinary kind will sometimes do unless given careful handling.

In figure 4 the Bullion stitch is illustrated, generally used for wheat ears, and sometimes for certain kinds of leaves, stems, etc. It is made after the manner of the common French knot. The needle is brought up at the base of the leaf or other form; carry it to the opposite end of the form, insert there, and bring up just beside the first point; now coil the thread around the needle's point a suffi-

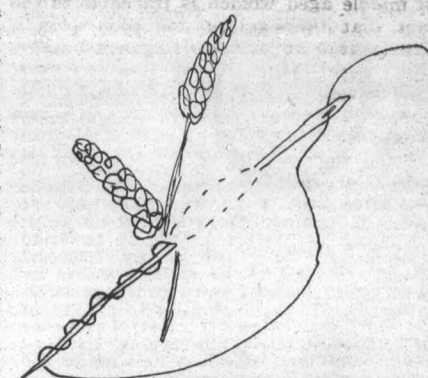


Figure 4.

cient number of times to cover the length of the form; hold this coil with the left hand while drawing the needle through, turning the coil back upon the space it is to cover as you do so, and then insert the needle at the opposite end to secure it firmly. The needle is then brought up again at the point where the next leaf starts. This stitch is by no means an easy one for beginners, but after careful practice its results will delight every worker."

THE YOUNG MOTHER AND THE FIRST CHILD.—No. 2.

When Baby Arrives.

Grandmother's ideas of baby raising are frequently laughed at these days and her suggestions are calmly ignored by the up-to-date mother. But she had one idea which I believe was right, that the sort of skin the child is to have as an adult depends a great deal upon the thoroughness of its first bath. The old idea was to rub the child all over with lard, taking especial pains with the scalp, and then to wash quickly in warm water with a good white soap. Modern nurses substitute white vaseline or olive oil for lard. The eyes, nostrils, ears and mouth should be cleansed with boracic acid, a teaspoonful dissolved in a pint of warm water. After the bath it is a good thing to rub the child all over with pure olive oil and to dust lightly with a good powder. Of course, the temperature of the room where the bath is given should be high, and the work done quickly. A flannel shirt and pinning band are best,

but the old idea of pinning the baby so tightly he can scarcely breathe has passed away for the more sensible one of leaving the hand loose enough to slip three fingers under. Flannellette pinning blankets are better than woolen ones, for obvious reasons. A flannel skirt, a white one and a slip, either nainsook or flannellette, depending upon the time of the year, completes the outfit. Wrap the child warmly in a blanket and it is then ready for its basket or feeding, whichever the attending physician decides.

If you care anything about your own health and comfort, as well as baby's, see that he sleeps alone from the beginning. A clothes basket can be made into an ideal bed by padding with batting and covering with cheesecloth or dimity. This bed can be easily carried from room to room, and placed on a chair at night right by the bedside. Baby is then warm and comfortable and the mother is not kept awake by the fear that she may roll on her baby and smother him.

The child should be given to the mother regularly every two hours, for although doctor's now say that no milk is secreted until the third day after the child's birth, he secures a fluid which helps to clear the digestive tract. Never leave him at the breast more than ten minutes. Any child can secure all the food he needs in this time. The habit of nursing baby frequently and leaving him as long as he likes, is bad from a health point of view and is a great "time killer" as well. Suppose he nursed only six times a day for ten minutes each time, there is an hour gone. But as he nurses oftener, even more time is taken. If he takes 15, 20 or 30 minutes, as some babies do, there isn't much time left in which a busy mother can do her work.

The nipples should be washed in a solution of boracic acid before and after nursing. Bathe with a bit of absorbent cotton and throw away the cotton after using. If the nipples become sore, a fine ointment is made of bismuth and castor oil, one teaspoon of bismuth to a table-spoonful of castor oil. Mix thoroughly and apply each time after nursing and washing with boracic acid.

No matter how well the mother feels she should not try to get up until baby is 12 days' old. Half the wretched health of middle aged women is traceable to the fact that they got up too soon after a baby was born and went to work before they were really in condition to exert themselves. A few days of keeping still now will prevent months of ill-health later.

Some women proudly tell how they did half their spring sewing while lying in bed after baby was born. Nothing could be more foolish, for at no time are the eyes in a more weakened condition. The mother should not be allowed to sew or read while in bed, nor to tax her eyes or strength in the slightest degree. Her sole duty at that time is to see that her health and the baby's are not endangered in any way. The teeth, too, need especial attention. In fact, the whole system is keenly susceptible to malign influences and no danger should be run no matter how well you think you feel.

Upon rising, if you nurse your baby be extremely careful about getting cold or putting the hands in cold water. If nothing worse results, baby is apt to have colic after the mother is chilled, and a badly caked breast is often the result as well. Do not lift heavy weights, as wood or water, and avoid much climbing of stairs. In fact, spare yourself in every way for six weeks at least, and three months is better.

(Questions regarding diet, clothing or anything else concerning the child will gladly be answered.—Ed.)

"COOL IT OFF" OR "HEAT IT UP."

"Why don't you open up the doors and windows and let in some air to cool it off in here?" demanded the man of the house.

"You mean to heat it up in here," corrected his spouse. "Don't you know the air outside is like a blast from a furnace? Do you think that would make things cooler in here?"

She led him into the darkened, cool living-room, motioned towards the couch and as he stretched his big frame with a grunt of satisfaction she asked,

"Have you found a cooler spot today?"

"Well, I don't know as I have," he admitted grudgingly. "But I can't say I've ever just understood your philosophy. My mother was great on air."

"So am I," assented the wife dutifully. "But my philosophy is to get the house filled with air after the sun goes down.

Then it is more apt to be cool air. I leave the doors and windows open all night, and then shut them in the morning, pull down the shades so the sun can't get at my rooms full of cool air to heat them, and there you have it. Simple and effective, too, isn't it?"

"Simple enough," sleepily agreed the man, "Maybe it's effective. Anyway—it is—cooler—in—here—than—"

"In the field," completed his wife to the accompaniment of a masculine snore.

BY INEZ DE JARNATT COOPER.
TUESDAY FOR WASHDAY.

Don't starve your family on washday, thereby making everybody, including yourself, cross. Much of the bother of washday may be overcome if you do not wash on Mondays. Of course, it has been customary to wash Mondays from time immemorial and so was it, years back, to bleed a man when he was ill and especially needed all his blood to recuperate.

On Monday, especially if there are children in the family, almost every house is upset and if it is to be straightened out that day your work will be doubled. And then, who wants to put the clothes to soak Sunday night? Often some member of the family is finishing the wearing of a garment, especially is this true in summer time when much white is worn. Needless to say, the wearer is not prepared to have the garment in question soaked.

So, on Mondays put your house in order, cook up enough good, hearty food, if you have much of a family, your pantry is depleted Monday morning, for washday. Set your table after supper, slice your potatoes, lay your fire, grind your coffee and fill your boiler before going to bed. You will wake up rested Tuesday morning, your house is neat from the day before, something is left in your pantry, and you are not particularly fagged. If you try this way you will think with pity of those who are still draining their systems by the old method.

SHORT CUTS TO HOUSEKEEPING.

To sterilize jars, pails, jelly bags or dish towels, boil in pure water five minutes. It is well to sterilize all drinking water this time of year. Add a piece of ice.—Z. I. D.

In preserving currants or berries of tender substance, like red raspberries or strawberries, especially the finely flavored wild, do not boil. Fill the jars, in layers of granulated sugar and fruit, fill up well, seal tight, let stand over night, then set in a vessel with cold water, set on side of stove and let the cold water slowly heat up to boiling point. Remove from fire, leave fruit jars in the water, until cold again, but do not cover up to steam. Even if after removing your sugar is not all dissolved in the jar, your fruit will keep without fail, color and flavor will be incomparable and the fruit will be unbroken.—Mrs. A. H.

Use a small knife to remove the hulls from strawberries. It is more effective with all sorts and conditions of berries than the fingers alone. Meanwhile the latter will be spared many a stain.—Mrs. E.

If you have trouble in making paper "stick" to the walls, put a little glue in the paste. Another good remedy is to stir up the paste with cold vinegar.—Mrs. L. L. G.

Equal parts of turpentine and carbolic acid is very effective in exterminating bed-bugs.—M. A. P.

To determine the presence of moths, place a lighted candle in a basin of water. The light attracts them and they will drop into the water.—X.

Sliced green tomatoes, when fried in butter and bread crumbs, make a dish quite as delicate as eggplant.—K. R.

When ironing one-piece dresses, keep the skirt rolled up with a cloth bag slipped over it while the waist is being ironed. The 25-pound sugar bags do very nicely.—B. M. W.

When you put your heating stove away for the summer give it a coat of unsalted lard. It will keep it in perfect condition.—I. M. S.

To clean a white woolen shawl spread over the table a sheet. On this place the shawl, powder it all over with fine starch, fold it up, press well together and leave for several hours, then squeeze well and rub together with both hands and shake off starch thoroughly. The shawl will look as well as when new.—M. A. P.

For the tan that will come with the summer outing, try equal parts of lemon juice and camphor, applied with a cloth to hands and face.—E. S.

Clean Food

It is an incentive to hunger to see Uneeda Biscuit made.

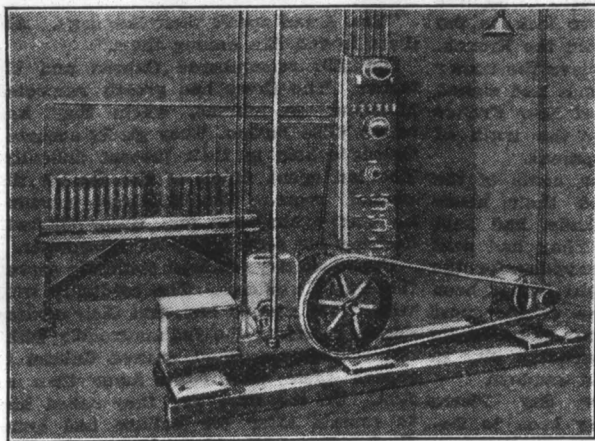
All materials are of the finest quality—clean, nutritious. The dough is mixed in spotless trays in a spotless bakery. Rolled thin; baked in wonderful ovens scientifically heated to give just the right crispness; then packed into the moisture-proof packages that keep them fresh, crisp and clean till eaten.

Never sold
in bulk

5¢

In the moisture-proof
package

NATIONAL BISCUIT COMPANY



ELECTRIC LIGHT

For Safety,
Economy,
Convenience.

A Perfect Light at
Reasonable Cost

NEW MAZDA LAMP
Make this possible.

Write us for information
and estimate.

CAPITOL ELECTRIC
ENGINEERING CO.
Lansing, Mich.

OUR DESCRIPTIVE CATALOG (150 ILLUSTRATIONS) SHOWS DOLLARS FOR FARM BUYERS

NOTHING EVER HAPPENED LIKE THIS!

Administrator's Sale Land Auctions

10,000 Acres

50 Fine Farms

Balance

Partly Improved

and Wild Land

Sept. 6, 7 & 8

Oct. 4, 5 & 6

Must be sold
to close estate. Terms to suit every
purpose.

Take an Outing See for Yourself
Cheap R.R. and Hotel Rates

SEND FOR CATALOG TELLS ALL ABOUT MICHIGAN. GIVES PHOTOGRAPH
OF EACH PIECE OF LAND TO BE SOLD. NOTHING LIKE IT

Address: ESTATE OF ALLEN MACOMBER, LAKEVIEW, MICH.

When Writing to Advertisers please
Mention the Michigan Farmer.

HOME AND YOUTH

THE ABORIGINES.

BY L. M. THORNTON.

I saw them marching down the street,
Eager and unafraid,
A little lad with eyes of blue,
A dancing brown-haired maid.
I followed them; the path they took
Was up a winding stair,
But when I entered, through the door
They'd passed—they were not there.
Instead, now notice if you please,
Were just two Aborigines.

A dusky Indian, moccasined,
With blanket round him thrown,
A dainty squaw in belt and beads,
Much like my books had shown;
Each primitive, he in his strength—
The strength of fifty pounds—
And she as truly charming as
Can anywhere be found—
Slim-ankled, graceful, decked to please
Her knight—the Aborigines.

The two upon me looked in scorn,
"Pale Face, depart," they cried;
"The Photo-Man don't want you here,
So just you wait outside.
This is our wigwam, can't you see,
We're warriors for today,
Though tomahawks like hatchets look,
Now won't you run away?"
And so I did, lest I displease
These two, the Aborigines.

Yet when the artist's work was done
And trappings had been shed,
No more afraid of warriors' frown
I smoothed each sunny head.
No more they spoke of haughty pride,
Of wigwam, theirs alone,
No more they veiled a winsome voice
And aped the warrior's tone.
Instead, they scrambled to my knees,
Content, the Aborigines.

And then I kissed them, maybe twice,
Once for their eyes of blue,
The spirit of the pale-face in
Their hearts so fond and true,
For love, that held a captive to
Their lightest wish or whim,
Since days of make-believe so soon
Become but memories dim.
And once for noble traits, in these
My own—the Aborigines.

GABRIEL DE MERSAC.

BY HOPE DARING.

Chapter I.

It was autumn of the year 1763. All through the summer months the forces of Pontiac had besieged the little English garrison shut up within the wooden palisades that surrounded the frontier town of Detroit. As winter drew near not only the savages but also the French settlers, who cherished a feeling of resentment towards the English, became aware that it was useless to look, in the Indian uprising, for aid from the French. At first they refused to believe the rumor that the government at Paris had signed a treaty which ceded all of New France to England, but gradually the truth of the statement became apparent.

Notwithstanding the war, some of the French traders, who had their headquarters outside the stockade, had kept up their traffic in furs. They had sent out the voyageurs with supplies for the winter, and the furs brought in had been shipped to Montreal. One of the most prosperous of the companies had sent its convoy of furs to the Canadian city in charge of Pierre, a trusted employee.

On a beautiful October day Pierre found himself, on his way back to Detroit, within a few hours' rowing of that town. After a long silence he looked over to his companion, a youth of fifteen who had the olive-tinted face and the flashing black eyes of the French Canadian, to say: "From what we've heard on the way, Gabriel, I trust we'll find Detroit at peace. The coming of winter will force the Indians to scatter to points where they can find game."

"At peace, but under English rule," Gabriel said a little bitterly.

It was some time before Pierre again spoke. At last he said, "See here, lad. I know it's hard, but we must accept the fact that never again will we see the fleur-de-lis floating over what was once New France. Good King Louis is not to blame; he was driven to the capitulation. We must bow to it, but, lad, we must hold fast to our own faith and honor under the new rule."

Gabriel started. "You mean—" "I mean that we must do right. The men who live under the English rule must be, first, true men, then French or English, as it has pleased the good Lord to make them. Now you, lad. You must not let this change unsettle your plans for the future. Some day you are to be a great trader."

"Yes. It was my father's plan for me, and it shall be carried out."

"Remember that a great trader must be, first of all, a good man."

Gabriel did not reply. The two drove the canoe along swiftly. The lake was smooth. On one hand the blue water stretched away, to merge with the purple haze that veiled distant objects. On the other hand rose the forest, and there Autumn's brush had touched the falling foliage with tints of gold, copper and carmine.

Gabriel de Mersac was the only son of a trader. The boy's mother had died when he was an infant. The father had kept Gabriel with him part of the time, often taking him on long trips through the forest to visit various Indian tribes whose furs the trader wished to purchase. Several winters Gabriel had spent at school in Montreal. A year before, Monsieur de Mersac had died. The priest at St. Anne, Detroit, was Gabriel's guardian. Until the youth had reached his majority he was to serve an apprenticeship by working for other traders. Then he was to have his father's money and begin business for himself.

Pierre and Gabriel reached Detroit an hour before sunset. The gates of the town were still closed, no one being allowed to enter without the sentry's permission, but the Indians who still remained in the near-by camps, where they had spent the summer, had ceased to make any attacks upon the garrison. The two travelers made their way to the headquarters of the company by whom Pierre was employed. There they met with a warm welcome from the French traders and farmers, all of whom were anxious to hear the news from Montreal.

The next day Gabriel was surprised to receive a message asking him to come to the fort. On arriving there he was shown to the council room where Major Gladwin, the commander of the garrison, and several other officers were trying to understand a half dozen Indians who had asked for an audience with the English.

"They are Crees, and the interpreter cannot make them understand him," Major Gladwin said to Gabriel. "Henri Cuzon, a habitant who was here on business, told me of your arrival. Cuzon said that you had visited the Cree village up near Hudson Bay, with your father, and he felt sure that you could talk with these Indians."

Gabriel nodded. Monsieur de Mersac had seen that his son could readily acquire the dialect of the various Indian tribes. The father had urged Gabriel to learn as many of them as possible, for the knowledge was of great benefit to a trader.

"Yes, I can speak their language. Ah, there is Old Elk among them."

Old Elk remembered Gabriel and his father. The Crees had greatly respected Monsieur de Mersac, whom they had called Wise Father. They gladly accepted Gabriel's help in their present difficulty. The lad spent much of the day at the council room. The following morning he was again sent for, Major Gladwin desiring his services as an interpreter.

For three days Gabriel faithfully served the English officers. The cordiality with which they treated him, and their evident desire to adjust the Indian trouble without further bloodshed, caused Gabriel to regard them with more favor than at first. On the third day they asked him to remain after the Indians had gone. Two officers besides Major Gladwin stayed in the room. It was the older one of these, Captain Gray, who asked: "My lad, did you ever see and talk with Pontiac?"

"Yes, a great many times. My father and I once spent two days at the chief's home on Peche Island."

"Do you think you would be granted an audience with him, should you ask it?"

"Why, I think so, for my father's sake," Gabriel said, his face and his voice both denoting surprise.

Captain Gray leaned forward, to lay one hand on the boy's shoulder. "Gabriel, we have been making inquiries about you. It is only good things that we hear of you and of your father. England will need such men as you will become, to uphold her authority here, and she will be ready to pay for the help."

The captain went on to speak at some length of Pontiac's cruelty and of his bad influence over the Indians. The wily chief was about to withdraw from that community, but doubtless the next summer would see a renewal of the hostilities. The English officers felt that, if they could capture Pontiac, their troubles would be over. If Gabriel would seek an interview with the chief and lure him away from the camp, on some pretext, so that he could be captured, the English would give the youth a purse of gold and

would help him on in any career that he might choose for himself.

Gabriel's black eyes burned. "But that would be treachery, to trade on Pontiac's friendship for my father."

"In dealing with a savage one must use any weapon that is at hand," Captain Gray began, but Major Gladwin interrupted him, leaning across the table to say: "My boy, could you have known and loved, as some of us did, the gallant Captain Dalzell, who was slain by this savage, you would be glad to help on his capture. Dozens of foul murders lay at his door. He has deceived and betrayed the French by telling them that their government approved of his attack upon this fort."

Gabriel stood mute. The major saw the youth's troubled face and went on: "Take time to think over what we have said. Gabriel, I know that I can trust you to keep it to yourself. We will not need you tomorrow, but the day after come to me here, at three in the afternoon."

Gabriel went away. Outside darkness had fallen, and he hurried along to the home of the Cuzons where he and Pierre lodged.

That evening a party of boys and girls gathered in the great hearthroom of the Cuzon home. There were games and singing. Apples and croqueignoles, a sort of doughnut, went round. Gabriel tried to take his usual part in the merriment, but, even in the midst of the romping games, he found his mind going back to the proposal made to him by the British officers.

After he went to bed he lay for hours, staring into the darkness, thinking, thinking. At his side Pierre slept quietly. Gabriel had no liking for Pontiac; he knew that the "Great Chief," as his followers called him, was cruel and treacherous. If the English were to rule over that region, they must put down the Indian trouble or there would be safety and prosperity for no white man. The gold did not tempt Gabriel, but he knew that, in the years to come, the patronage and friendship of the new government would mean much to him.

It was late when Gabriel fell asleep, but he awoke just as the gray light of early morning was creeping over the earth. He arose, dressed, and left the room without rousing Pierre. Making his way down stairs, he walked out of the house, unseen by anyone.

The Cuzon farmhouse was but a little way from the river, the farm fronting on that stream. Gabriel walked in that direction. He had gone but a little way when an Indian emerged from a thicket and, stepping directly in front of him asked in Ottawa: "You are Gabriel, son of him the Ottawas knew as Wise Father?"

"Yes."

"The Great Chief has sent for you. Come with me and I will take you to him."

Gabriel hesitated but for a minute. Then, as the Indian strode towards the river, he followed him.

Chapter II.

On arriving at the river's edge the Indian motioned Gabriel to enter a bark canoe which had been drawn up on the beach. The youth did so. Then the Indian pushed the boat off, sprang in, and took up the oars.

"Where are we going?" Gabriel asked. "To the Great Chief."

Gabriel asked no more questions; he knew enough of the Indians' taciturn nature to realize that further inquiries would be useless. The boat went swiftly, keeping close to the shore. It was not long until they reached that point where, a little way back from the river, stood the Ottawa village. There the boat was beached. The Indian motioned for Gabriel to follow him and started for the camp.

It was surrounded by palisades. Within the enclosure were dozens of rude huts and wigwams. Only a few Indians were to be seen, although fires burned before many of the lodges. Over some of the fires hung kettles, and before others, impaled on long sticks, pieces of venison were roasting. Gabriel's guide halted before the largest one of the structures—a hut built of logs and roofed with bark. Throwing open the door he called:

"Great Chief, it is the son of Wise Father."

"Let the lad enter," said a deep, sonorous voice.

Gabriel stepped inside. At the end of the building opposite the door there was a chimney, and there a big fire burned.

Two openings high up in the hut admitted the light. Before the fire, on a couch of skins, sat an Indian. He turned his head, beckoning Gabriel to come nearer.

Pontiac was past fifty. He was of medium height, and his figure was finely proportioned. His features were stern and bold, but his face was impassive. In his hair were the eagle feathers that denoted his rank as a chief. He wore buckskin trousers, and a blanket shrouded his figure.

"The son of Wise Father is welcome to the lodge of Pontiac," and the chief held out his hand after the manner of the white men with whom he had associated.

Gabriel laid his own in it. Pontiac motioned his guest to a seat on the furs and began to ask about Gabriel's journey. While they talked a squaw entered and placed on the ground before Pontiac a bark platter containing a piece of roast venison, a fried fish, a dish of parched corn, and a small, closely-woven basket filled with praline, which was made of parched corn pounded between two stones and mixed with maple sugar.

"The Great Chief's visitor is welcome to eat with him," Pontiac declared. He drew a knife from his belt and carved slices of the meat.

At first Gabriel drew back, but Pontiac's invitation was so like a command that the French boy began to eat. No word was spoken while the meal went on. When it was done, and the remnants had been carried away by the squaw, Pontiac lighted a pipe and began: "Wise Father's son has been long at the council room of his country's enemies. He hates the English?"

"I am not sure," Gabriel said slowly. "Our king, the good Louis, has been obliged to give over New France to the English. They are to rule here."

"Not for long. Pontiac must go away for the winter, unless he can even yet gain entrance to the fort. If it was not for that dog, Gladwin! Long ago the others would have yielded. He must die."

The chief leaned forward, bringing his face close to that of Gabriel. The boy shrank back.

"What do you mean?"

"That the son of Wise Father is to help not only Pontiac, but also New France. With Gladwin dead, the English will give up and leave. See! This contains a treasure made by a medicine man. Shake it into the dish from which Gladwin drinks, and it will remove the foe of the Ottawas and the Frenchmen. All it needs is someone who can enter the council room."

Into Gabriel's hand the chief thrust a tiny box made of birch bark. It was filled with a fine white powder. Gabriel tried to give the box back to Pontiac.

"I thought that warriors fought with arrows and bullets."

"The white man must be fought with his own weapons. Let Wise Father's son do this, and when New France is free, all power shall be his."

Gabriel stood up. "It is useless to tell me that, for I know that New France has passed into the hands of the English."

"But Wise Father's son is to take the powder and use it," Pontiac's gaze met and held that of the boy. "If he does this, when he becomes a trader, all the Indians of the forest shall be his friends. Let him refuse, and disaster and defeat shall come to all his ventures. Pontiac has spoken."

There was a moment's silence. The flames leaped higher, and the bright light showed that Gabriel's cheeks had paled. If Pontiac lived and his power was not overthrown, the words uttered by him would prove no idle boast. He would have it in his power to hinder or to help Gabriel's success. Suddenly Pontiac put one hand on the boy's shoulder, turning him about so that he faced the door.

"Go now. When the bidding of the Great Chief is done he will reward the one who does it."

It was not until he was out in the open air that Gabriel remembered that the box was still in his hand. He turned about to re-enter the lodge. Then he recalled the chief's pre-emptory dismissal and thrust the box into his pocket. His Indian guide was waiting for him just outside the door. No word was spoken as the two passed down the river to the landing before the Cuzon house. When they reached it, Gabriel sprang ashore and walked away.

That afternoon the youth refused to join Andre Cuzon, who was going out on the river with a net after whitefish. He also asked to be excused when Pierre

suggested that he should go over some accounts for the firm. Going out into the woods he threw himself down under a tree, to think over the situation in which he found himself.

He lay there for an hour. Suddenly he sat up. What was it that Pierre had said? To do right. And that was the teaching of his own honored father as well as of the priests who had been his instructors.

Gabriel sat still, looking up to where the branches of a tree were outlined against the soft blue sky. "Why, it's easy enough," he said aloud.

Early the next morning Gabriel borrowed Andre's canoe and rowed to the Ottawa village. When he told the sentry at the gate who he was he was allowed to enter the enclosure. As he drew near the lodge of Pontiac, that chief opened the door and stepped out.

"Ah! The son of Wise Father has come to tell that he has done the bidding of Great Chief?"

"No, I have come to return you this," pressing the box of poison into Pontiac's hand. "I do murder at the bidding of no man."

Pontiac came a step nearer, a dangerous gleam in his black eyes. "Wise Father's son is a fool. Does he not know that he is in Pontiac's power?"

"That may be, but I am not afraid," and Gabriel coolly turned around to walk away. He listened intently for some word of command to stop him, but it was not spoken. Unmolested he passed through the gateway and reached his boat.

Promptly at three that afternoon Gabriel entered the council room. No one was in the apartment save Major Gladwin, who sat at a table, writing. He looked up.

"You are on time, Gabriel. I hope that you have come prepared to promise me your aid in capturing Pontiac."

"Nay, Major Gladwin, I have come to tell you that I cannot do as you ask. Indeed, I could not if I would, for Pontiac would not allow me to enter his camp."

"Ah!" There was something in the single word that made Gabriel brace himself, as if for a combat. "How is this? Early yesterday morning you were at the Ottawa village, rowed there by one of Pontiac's braves?"

The youth threw back his head. "Then the English spy upon the French traders?"

The major frowned. "A wise commander learns all that he can of his enemy's movements. What explanation have you to make of that early morning visit?"

"None whatever," Gabriel's voice was cold, but he was very angry. While he vaguely felt that it was not wise to throw away the major's good will, his pride would not let him tell that on the occasion of that visit, when he had been spied upon and misjudged, he had had it in his power to further a scheme against Gladwin's life.

Major Gladwin poured a glass of water from the pitcher that always stood at his elbow. Gabriel's face twitched. It would have been easy to carry out Pontiac's orders.

"It will be useless to prolong this interview. I will not again need your services as an interpreter."

Gabriel bowed and left the room. "I wish I had stayed in Montreal," he muttered.

Two days went by. Gabriel surprised Pierre by devoting himself to the business of the trading company, to the exclusion of everything else. In the meantime the Indians continued to leave the camps where they had been so long. Life in Detroit began to assume something of its olden comfort and gaiety.

It was on the evening of the second day after his interview with Major Gladwin that Gabriel entered the stockade. The sentry had come to know him so well that he was not challenged. In his hand he had a bill which he was to present to one of the traders who had been shut up in the fort all summer. Before passing through the gateway Gabriel had seen several forms skulking near the palisades.

"The sentries are growing careless," he thought. "Some day they will wake up to the fact that an Indian cannot always be counted on to do the things one expects of him."

Gabriel's way led him close to the wall. All at once he stood still. What was it he had seen?

Through the air, a little way ahead of him, there had flashed what had seemed like a ball of fire. So quickly did it pass that Gabriel asked himself if he could

have been mistaken. Then he remembered that, in a shed, just where that ball had disappeared, was stored the fort's supply of gunpowder.

He started forward on a run, a cry for help breaking from his lips. As he ran he thought of the row of houses back of the shed. There lived several families of French habitants, some of them his friends. Then he saw that a mass of some burning substance had fallen in front of the shed's open door, setting fire to straw which was littered there.

Chapter III.

When Gabriel reached the fire his first thought was one of regret that he had sounded an alarm; it would be easy for him to extinguish the blaze. He leaped directly upon it, beating out the flames with his feet and with his deerskin cap. The sound of hurrying footsteps reached him but as he bent down there came a sudden rushing, crackling noise. The next moment he was surrounded by fire. His clothing was aflame and in his agony he shouted: "Put out the fire! There's powder in the shed!"

A moment of the wildest confusion followed; the whole town was in an uproar. However, the fire was extinguished before it reached the powder. Gabriel's burning clothing was torn from his body and, sick and faint with pain, he was carried into the nearest house, which chanced to be that of Madam St. Best, an old friend of the boy's father. The fort surgeon was sent for and then Major Gladwin set about learning the cause of the excitement.

It did not take long to learn the details. Others besides Gabriel had seen the ball of fire as it was tossed over the palisades, but no one but the French youth had realized the danger. The plot had been well laid, so well that Major Gladwin felt sure there must have been a confederate within the walls. The shed door was open, and no one could account for the straw scattered in the doorway. The flash which had cost Gabriel so dearly had been caused by powder being scattered in the straw. The most vigorous investigation failed to find the offender. No harm had been done, save the injuries suffered by Gabriel.

It is not always on a battlefield that a hero proves his courage. Gabriel had grown up in the open, used to countless dangers and hardships. Fear and he were strangers, but in the days which followed the fire he came to know pain well, that enemy whose attacks are so hard to withstand.

Gabriel's feet and legs were burned badly. His hands and arms had also suffered, but not so severely. The surgeon did all he could for the sufferer, and Madam St. Best summoned an old half-breed nurse who was noted for her skill. The next day Gabriel's fever mounted high. He became delirious, and for forty-eight hours he tossed about, living over the scenes of the past few days. Again and again he told of both attempts to bribe him. Then he would go over his last interview with the major. "They all blame me, they think me false," he would say, his voice dropping to a minor key. "And I tried to do right. It will make my future harder, it may even defeat the plans my father made for me, but there was nothing to do but to do right."

The second day Madam St. Best sent for Major Gladwin. The message asked him to come to her home, but gave no reason for the request. The officer came at once as he fully realized that Gabriel's promptness and courage had averted a tragedy.

The ground floor of Madam St. Best's little house was nearly all taken up by the hearthroom. There, on a high-posted bed, Gabriel lay. A wood fire blazed on the stone hearth.

Madam St. Best was a tiny woman with a proud, refined face. She had flashing black eyes and snow-white hair. The hand she held out to her caller was finely shaped, but brown and hard, made so by the labor that the brave widow was obliged to do.

"Thank you for complying with my request, Major Gladwin," she said.

"It was a pleasure to do so, madam. How is our brave Gabriel today? I trust his fever is lower."

"Not yet, and I think it worries Doctor Harrow. Major Gladwin, you have wronged Gabriel."

"I wronged the boy! How is that?" The major tried to speak lightly, but his eyes avoided the woman's gaze.

"It is to let you know how that I have summoned you. The lad has neither father nor mother to speak for him, so I am going to risk your anger. It is not to criticise your offer to Gabriel that I

have asked this interview; an ignorant woman cannot judge of the duties that war may impose upon an officer. But Gabriel is not of your country; if he wished to decline the task you would have set him, to do so was his pleasure."

"Madam St. Best, how does it come that you know of my interviews with Gabriel?"

"In his delirium the boy has told it all. He has told of another interview, one to which he was summoned by the Great Chief himself. Pontiac sought to bribe Gabriel to take your life, even as you conspired against that of the Indian."

Major Gladwin started. He was a brave man and had many times looked death in the face. Never before, though, had his danger been announced by a sweet-faced woman as she sat with him at her own fireside. All that he could say was to ask, "Madam, what do you mean?"

"There! Gabriel is again beginning to talk. Take that chair by his bed and he shall tell you what, unconsciously, he has told me."

Madam left the room and the major took the chair indicated. There was no one in the room but himself and Gabriel, save the wrinkled old half-breed nurse.

It was an hour later when Major Gladwin went away. He had bidden the nurse call Madam St. Best. All he said, as he shook the woman's hand, was: "I understand, madam. You can trust me to see that this brave lad is recompensed for all I have unwittingly made him suffer."

After Gabriel's fever had left him there were weary days of pain. He appreciated the many kindnesses shown him, and tried to be patient. Madam St. Best said to him: "Major Gladwin sends each day to learn how you are. He bade me tell you that he is your friend, and, when you are stronger, he will talk with you."

Gradually his strength came back and his burns healed, but the first snow came before Gabriel was allowed to leave the house. He sat at a window, looking out to where the little palisaded town was wrapped in a mantle of white, when there came a rap at the door. Madam went forward, to welcome Major Gladwin.

"It is Gabriel whom I came to see," the new-comer said, as he shook hands.

"Then I will leave you two together," and, drawing an easy chair near the fire, she left the room.

Major Gladwin strode across to where Gabriel sat, his hand extended. "Forgive me, my boy. Forgive me for tempting you to betray a trust, and for thinking that you were guilty of treachery when you were refusing to lift your hand against me."

Gabriel stared into the other's face. "Why, how did you know?"

Major Gladwin sat down and told him the whole story. They talked for a long time. Gabriel learned that Pontiac and all his braves had withdrawn from that vicinity. Gladwin assured the boy of his friendship and asked him, when he was strong enough, to become his secretary. "With your knowledge of the Indian dialects and the Indian character, you can be of great assistance to us. We will unite in making the English rule in Detroit an era of peace and prosperity."

Neither of the two dreamed of the changes the next score of years would bring to that region. Gabriel became a famous trader. In the Revolutionary War he gave himself to the cause of the colonies, and came to be one of the most honored and influential men of territorial Michigan.

THE FLASH OF A KNIFE.

BY F. M. COMSTOCK.

Meeting Capt. Mason the other day led up to a memory scene of the old time days on the lakes, when a sailor's life was one of extreme hazard. But the miracles wrought by man have created wondrous changes in the nature of a sailor's toil, and have robbed the dreamer of the poetry and romance that environed him, until, today:

The angel that was up aloft
Is in the boiler now.
For Jack he is a stoker man
And to his fate must bow.

In those days the elements that constituted a true toiler of the lakes had to be equal to an emergency, and be possessed of more than common presence of mind.

Quite a number of our seamen were school teachers during the winter and sailors during the summer. These men came from farms and the small towns, and we gave them the name of "summermen" in contradistinction to the tougher element that made the cheap sailor boarding houses their winter abode.

A Triumph Of Cookery—

Post Toasties

Many delicious dishes have been made from Indian Corn by the skill and ingenuity of the expert cook.

But none of these creations excels Post Toasties in tempting the palate.

"Toasties" are a luxury that make a delightful hot-weather economy.

The first package tells its own story.

"The Memory Lingers"
Sold by Grocers.

Postum Cereal Company, Limited,
Battle Creek, Mich., U. S. A.



Get
What
You
Ask
For

JAP ROSE

The original, cartoned, transparent,
soap. Delightful for the Toilet and
Bath. Makes the hair soft and
fluffy. Use it in all kinds of water.

Sold by Dealers Everywhere
REFUSE IMITATIONS
Look for the Jap Girl on every package.

A Large
Cake 10c

Established
1839

TRAINING FOR BUSINESS IN A UNIVERSITY ATMOSPHERE.

Every advantage of the modern up-to-date college, including the finest gymnasium in the state, is offered students of the

Ohio Wesleyan UNIVERSITY

School of Business,

Delaware, Ohio.

Course includes studies necessary for success in commercial life.

Best Courses for the Least Money.

Write today for full information to

P. O. Box 343, L. L. HUDSON, M.A., Principal,
Delaware, Ohio.

DAISY FLY KILLER



placed anywhere, attracts and kills all flies. Neat, clean, ornamental, convenient, cheap. Lasts all season. Can't spill or tip over, will not soil or injure anything. Guaranteed effective. Of all dealers or sent prepaid for 25c.

HAROLD SOMERS
150 De Kalb Ave.
Brooklyn, N. Y.

WANTED FOR U. S. ARMY—Able-bodied, unmarried men, between the ages of 18 and 35, citizens of United States, of good character and temperate habits, who can speak, read and write the English language. For information apply to Recruiting Officer, 212 Griswold St., Detroit, Mich., or Heavrich Block, Saginaw, Mich.; Corner 1st & Saginaw Sts., Flint, Mich.; 110 East Main St., Jackson, Mich.

Let Me Start You in Business!

I will furnish the advertising matter and the plans. I want one sincere, earnest man in every town and township. Farmers, Mechanics, Builders, Small business men, anyone anxious to improve his condition. Address Commercial Democracy, Dept. D 30, Elgin, Ill.

LEARN AUCTIONEERING At the World's Greatest School

and become Independent. Catalogue and complete information FREE. Write for it today. JONES NAT'L SCHOOL OF AUCTIONEERING, 2856 Washington Biv'd, Chicago, Ill. Summer term opens July 31.

YOUNG MEN WANTED to LEARN VETERINARY profession. Catalogue free. GRAND RAPIDS VETERINARY COLLEGE, Dep. H Grand Rapids, Mich.

PRINTING—For Poultry men, Live Stock Breeders and General work. Write for terms. C. N. MENDELS & SON, Gd. Rapids, Mich.

Very few of your true jack tars found their way to the great lakes, but such of them as did come were of the better class.

All of the old timers cannot help but remember the L. K. Plimpton twin warehouses on upper Buffalo creek. At the time of which I write—1861, I think—the New York Central Railroad had a line of propellers running between Buffalo and Chicago, stopping as need be at intermediate ports.

One of this fleet was called the Sciota, Capt. Gil Traverse commanding, and Gus Williams occupying the position of first mate; and as this, "Flash of a Knife," has to do with the said Williams, and, to my mind was the active cause of the loss of the Sciota, the facts in their sequence have always seemed to hold more than the usual run of interest, and I have often wondered why it was that Williams was spared death at the point of a knife to be shrouded a few days later by the waters of lake Huron; but I could never solve the puzzle.

Capt. Mason and Williams, who were fast friends, had been to the theatre the night in question, and were returning to their respective vessels, which happened to lay at the Plympton warehouse docks, when the murderous attack on Williams was made. Ordinarily they would have gone to their respective homes, but the early morning had been set for the getting under way of both their vessels. I take the rest of the event from Capt. Mason's private log.

"Gus and I had been to the theatre to see Booth in Richard the Third. We struck the docks on our return at shortly after midnight, Gus bound for the Sciota and I for my own vessel which lay just above. We were talking about the play and of the possibility of our having a good time in Chicago, where we were both bound, both of us with little thought of our surroundings, though we realized we were in a more or less dangerous vicinity, and especially at that time of night.

"We were carefully threading our way through the piles of freight, for it was much too dark for us to push boldly forward, Gus taking the lead, when a gleam of light pierced the darkness and I caught the flash of a sheath knife in the hands of some unknown assassin as it was drawn back to strike a deadly blow.

"In the preservation of one's life I believe instinctive action does not depend on thought at all, but if it does it was a mighty quick thought that made me give Gus a shove forward—for the gleam of light came from between two boxes to the left of us—and grab the hand that directed the blow. But, quick as I was, I could not prevent Gus from getting a slashing cut on the arm which brought the blood good and plenty."

"As you know, I was a pretty husky chap, yet for once in my life I found I not only had my hands full, but was getting the worst of it, and had to call on Gus for help; but in spite of both of us the assassin got away and left us puffing and blowing.

"Now the curious thing in this incident lay in the following facts:

"It was the second mate of the Sciota, and not Gus, that the man was laying for; anyway, the unfortunate officer was found with a sheath knife up to its hilt in his heart the next morning.

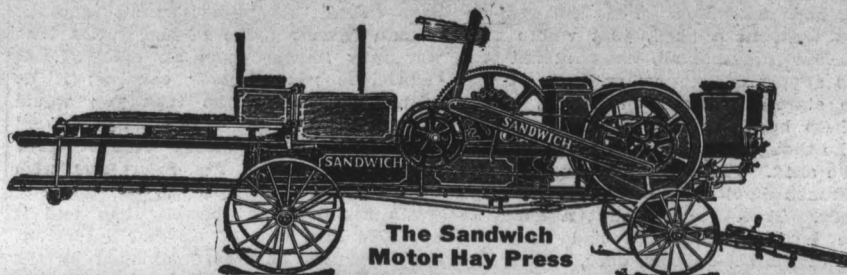
"As a result of the murder of his second mate, Captain Traverse was delayed in leaving port for over twelve hours, and twelve fatal hours they proved to be to the Sciota and all on board.

"As for me, I escaped the coroner's inquiry with a deposition, and we pulled out on almost schedule time.

"We were a slightly faster boat than the Sciota, all things being equal, but on this trip were somewhat heavier loaded, and, in thinking the matter over in the light of later events, I came to the conclusion that we logged about the same number of miles in the run up the lakes that the Sciota did.

"Anyway, we came to under Mackinac island, glad of the shelter from the heaviest gale of wind that had swept over the lakes in years; and it was in this gale that the Sciota foundered off Thunder Bay, making it very plain to me that the murderer of Ed. Fitzgerald was also responsible for the loss of the Sciota and the lives of twenty-seven passengers and crew; for, had we left Buffalo at about the same time, there could not have been much difference in the time of our arrival at the Straits where shelter from the storm would have been assured."

The murderer, Ed. Monahan, was finally brought to book and paid the penalty of his crimes.



"Just Like Finding Money"

The recent invention of an all-steel Motor Press makes Hay Baling one of the finest profit-paying businesses on earth—so say men who are using the new Sandwich Motor Press

"Hay baling has always paid me fine profits, but now, that I've got a MOTOR press, and hay selling at a good price, I am raking in the coin *hand over fist*! It's just like finding money!" That's a sample of the letters we get from delighted owners of our newest style Hay Press, the Sandwich Motor Press.

The Sandwich Motor Press is a combination Sandwich All-Steel Belt Power Press with a high-grade gasoline engine mounted on same trucks.

It is the most complete, compact and fast-working Hay Baling Outfit in the world. It is portable, too! And always ready for work—no time lost in setting and lining up engine. For windrow baling this outfit has proven a whirlwind.

The machine is of reinforced steel construction throughout.

Special device makes it easy to start or stop press instantly. Friction clutch is on the press, not on the engine. Special chain drive. No belt equipment to lose power or require frequent adjustment.

Engine is 7 H. P. hopper-cooled type, requires little water. Under brake test shows 9 H. P. Equipped with both batteries and magneto. Tank underneath. Engine provided with standard gasoline pump with overflow. Combination seat,

battery and tool box included. A reliable, powerful engine, high class in every particular.

If you have an engine, buy the Press alone. It is easy to mount any standard hopper-cooled engine on platform.

The Sandwich All-Steel Hay Press bales 35 per cent more hay than others of equal rated capacity—2½ to 3½ tons per hour. Has self-feeder equipment. Takes double charge of hay. Has no condenser box, needs no foot tamping—feeds

direct from fork. No balance wheels, no complicated gears, no high speed machinery. Fast, simple, strong and light of draft.

If a smaller outfit is desired, one somewhat less expensive and having capacity of, say 1½ to 2 tons per hour, we can furnish it, using either a 4 or 5 H. P. gasoline engine.

We make Motor Presses (complete or without supplying engines); wood frame and steel frame presses; horse power and engine power presses in all sizes up to 5-ton per hour capacity.

Drop us a line, a postal, today for new book about the profits in hay baling. We want to tell you particularly about Sandwich Motor Presses. Address

SANDWICH MANUFACTURING COMPANY

562 Spruce Street, Sandwich, Ill.

(43)

RUST PROOF METAL STACK COVERS

Saves All Your Hay

Pat'd 4-18-1911

Boy Can Put It Up

For the farmer who raises hay there are few if any, money and labor savers that compare with our Corrugated Galvanized Metal Stack Covers. They prevent fires, avoid hauling hay to barns, save barn and shed room, saves all the hay, can be quickly put over an unfinished stack in event of rain; takes but little space when not in use, as the sheets intermesh. A 15-year-old boy can put them up. Two boys can quickly cover a stack 20 by 40 feet. Hay men prefer them to barns because of economy and convenience. Saving on one stack will pay for the cover. Can't be blown off by wind, and water tight—lasts a lifetime—rust-proof.

Many hay-raisers bale and stack in the field and cover till wanted for market or use, when cover can be taken off in sections as desired. Best kind of insurance against loss in case of burning barn. **Farmer Agents Wanted.** booklet and delivered terms, etc., of Metal Stack Covers. My nearest freight depot is

Write today for descriptive booklet, price delivered, and special agency terms if you want agency. Use coupon or mention this paper. Address:

Name State

Saves Half Your Labor

Send This Coupon Today

METAL STACK COVER CO., 25 So. Desplains St., Chicago

If not room to write in coupon, write on margin.

Send for New Catalog Illustrated.

Mounted or Unmounted

Reliable BLIZZARD Ensilage Cutter Always Works Right

You can cut any dry or green feed most economically, shred corn to best advantage, if you own the BLIZZARD. Designed to stand hard service without a bit of strain or pull and built in fewest parts—simple, easy running, with self-feed table and knives adjustable while running.

We Guarantee It Fully

Improved Wind Elevator carries fodder any height, any direction. Every machine tested separately before shipping. A demonstrated success for 38 years. Shipped ready to put up. Let us send you free book, "Why Silage Pays." Write today.

JOS. DICK MFG. CO.
1439 W. Tuscarawas St. Canton, Ohio

OHIO HAY PRESS

All steel construction—Steel pitman and plunger mounted on roller bearings—Smooth, silent action—No jar or jerk—Speed up to 35 strokes per minute—Automatic Block Dropper—drops block at right time—prevents accidents or injury to operators and avoids loss of time. The "Ohio" is

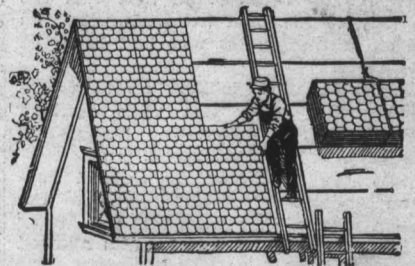
The Only Automatic Hay Press

on the market. Investigate our non-breakable, automatic relief clutch feeder. Powerful and efficient, insuring great capacity. Our book explains details of various features. Mailed free. We don't ask you to buy, simply investigate before investing your money—Remember back of our press stands the "Famous Ohio" factory—a positive guarantee of best service and highest quality. Write postal now—address

THE OHIO CULTIVATOR CO. 106 Ohio St. Bellevue, Ohio

When Writing to advertisers mention the Michigan Farmer

Free Roof Insurance Against Lightning



Edwards Interlocking "Reo" Steel Shingles

Write today for our Big Free Catalog No. 767, which gives full details about Edwards Interlocking "Reo" Steel Shingles and other metal roofing and materials made by us. It tells you all about the Ten Thousand Dollar Guaranty Bond, which insures every Edwards "Reo" Steel Shingle Roof against destruction by lightning for all time.

Edwards "Reo" Steel Shingles are made of high-grade Bessemer Steel in sheets 5 to 12 feet long and 24 inches wide. Either painted or galvanized steel and all ready to put on. You can easily put them on yourself. Only hammer and nails required.

We have a Special Cash Money-Making Proposition for the man who writes for it, in each community. If any of your buildings need roofing, you are the man.

Send dimensions of your buildings and we will quote you cost of an Edwards Roof—freight prepaid. Write for offer—NOW.

The Edwards Mfg. Co., 717-767 Lock St., Cincinnati, O. Largest Manufacturers of Steel Roofing Material in the World (50)

BALE 18 TONS A DAY HAY

Our "Cyclone" 3 stroke self feed hay press is the latest, most powerful and most efficient press on the market. Each circle of the team presses in three charges. The self feed automatically puts the hay to the bottom of the bale chamber. These improvements wonderfully increase capacity of our presses. Write today for circular K-196 which gives prices and details of five days' free trial.

GEO. ERTEL CO., QUINCY, ILL.

P. & B. Fence Anchors

Keep hogs from going under wire fence. Hold fence down in crossing depressions. Protect stock from lightning by ground connection. Hold in any soil. By their use you can set your

Posts 35-40 Ft. Apart

Simple, cheap, easy to use. No digging necessary. Special driving tool free with orders of 100 or over. Ask your dealer or write to

H. C. WHITNEY & CO., Mich. State Agents,
31 Home Bank Bldg., Detroit, Mich.
J. M. PEEL & BRO., Sole Mfrs., Box 102, Marysville, O.

Genasco

the Trinidad-Lake-Asphalt Roofing

You get real roof-economy in Genasco—not in substitute "asphalt", coal-tar, or composition roofings.

The Kant-leak Kleet makes seams absolutely watertight and prevents nail leaks.

Write for the Good Roof Guide Book and samples.

The Barber Asphalt Paving Company
Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

Philadelphia San Francisco Chicago

Rider Agents Wanted

In each town to ride an exhibit sample 1911 bicycle. Write for special offer.

Finest Guaranteed \$10 to \$27
1911 Models
with Coaster-Brakes and Puncture-Proof tires.

1909 & 1910 Models \$7 to \$12
all of best makes....
100 Second-Hand Wheels

All makes and models, \$3 to \$8 good as new.....
Great FACTORY CLEARING SALE

We Ship on Approval without a cent deposit, pay the freight, and allow

10 DAY'S FREE TRIAL.
TIRES, coaster brake rear wheels, lamps, sundries, parts and repairs for all makes of bicycles at half usual prices. DO NOT BUY until you get our catalogues and offer. Write now.

MEAD CYCLE CO. Dept. T.77, CHICAGO.

THE LARGEST AND BEST LINE OF WELL DRILLING MACHINERY

in America. We have been making it for over 20 years. Do not buy until you see our new Illustrated Catalogue No. 14. Send for it now. It is FREE.

Austin Manufacturing Co., Chicago

CORN HARVESTER

That beats them all. One horse enters two rows. Great labor saver. Carries to the shock. No twine. Worked by 1, 2 or 3 men. We also manufacture Stump Pullers and Tilt Ditchers. Write for catalog.

M. L. BENNETT & CO., WESTERVILLE, Ohio