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A FEW days ago I was reading about a Dakota farmer who put all his eggs in one basket and then stumbled and broke all the eggs. In other words, he put his dependence upon a single crop of wheat and it failed. Not one of us Michigan farmers would think of placing our dependence upon a single crop of wheat; however, we do put several kinds of eggs into the basket and we want to be reasonably sure that all of them are good ones.

Although Michigan cannot boast as being the highest producing state in the Union, yet her wheat crop is a very important one and the failure of this crop for a single season would mean a loss of thousands of dollars. Of the conditions for wheat growing which can be governed by man, the three most important ones are the preparation of the ground, planting of good seed, and planting it at the right time so that it will not be troubled disastrously by the Hessian fly and other enemies.

Mr. N. A. Clapp in his article entitled, "Preparing for the Wheat," which appeared in the issue of the Michigan Farmer for August 16, 1913, has so thoroughly discussed the preparation of the seed bed for wheat, that I cannot improve upon it or offer any further suggestions, hence I wish to discuss the remaining features; the planting of good seed, and the time that it should be sown in order to escape the ravages of the Hessian fly, the most serious wheat pest.

What Farmers Can do to Improve Seed Wheat.

The thing which all of us are striving for is a maximum crop but before the maximum crop can be harvested we must have a good stand of thrifty wheat and before we can get such a stand, we must be sure that our seed is of the highest quality obtainable. It is a poor plan to send out of the state for seed wheats for the chances are that the conditions under which the seed wheats have been raised are not identical with the home conditions. If the farmer has not his own seed wheat, it would be better to purchase it from some nearby neighbor and even then it will probably not produce quite as well the first year as in succeeding years or until it has become acclimated. If no seed wheat can be obtained from neighbors and it is necessary to send away for it, one might profitably study the situation and get his wheat from some seedsmen whose wheats are raised under conditions similar to those of the home locality. It would be well for Michigan farmers to obtain seed wheat from seedsmen of Minnesota or Wisconsin who live in as nearly the same latitude as possible.

In planting wheat or any other seed, we should remember that "like begets like," and we can expect a harvest similar to the thing we plant. We cannot plant shriveled and diseased kernels of wheat and hope to harvest plump and healthy ones. Neither can we plant weed seed in our wheat and then expect that the seeds will not come up and rob the wheat plant of the nourishment that it would have gotten from the soil, had the weed been eliminated.

We often say that our wheat has run out but the facts of the matter are that the original seed has become so badly mixed with inferior seeds of low productivity that the wheat crop is not a profitable one, hence we say it has run out. Any and all seed wheat should be put through a good fanning mill in such a way as to take out all the light wheat and weed seeds, before it is planted. Before running through the fanning mill, the mill may be gone over and all the stray kernels of wheat, oats, or other grains picked from the sieves.

Oftentimes, however, the mixing is

Wheat Seeding.

brought about by the threshing machine. It comes from neighboring farms and brings with it stray kernels of foreign wheat and other grains which are jostled from their lodging place into the first few bushels that are threshed, hence, the seed wheat should not be taken until the first six or eight bushels have come from the machine, and then this should be thoroughly fanned.

Late Planting Eliminates the Hessian Fly.

This pest gets its name from the belief that it was introduced by the Hessian

black objects which resemble a flax-seed in size and color, inside of which lies the maggot in a dormant state. Below the level of the ground, a dozen or more of these "flax-seeds" may be tightly packed away.

The injury will often show in the fall by the darkening of the entire plant or a shorter growth. In the spring the larva changes into a pupa and from this stage it wakes up and emerges as a tiny winged creature called "The Hessian Fly." Now it crawls up inside the sheath where it busies itself with laying more



Wheat Field of W. Plants & Son, of Eaton Co., which Yielded 41½ bu. per acre.

sians during the Revolutionary War, and it is probably the worst enemy of Michigan wheat. The insect produces many generations in a year, two of which are well known and their habits should be common knowledge to wheat raisers.

The fall generation lays its eggs upon the upper surface of the young wheat plants. The egg is slender and pointed, and is placed between two of the ridges of the leaf surface. When laid, the egg is colorless but later turns a sort of a

reddish cast. The egg soon hatches into a maggot which bores its way down inside the leaf sheath and stops between the sheath and what will eventually become the main stalk. Here it feeds upon the juices which the plant exudes until when full grown, it attains a length of about one-fifth of an inch. By examining the wheat stalks, one may find small

eggs for another generation which passes into the flax-seed stage before harvest. The flax-seeds packed away inside the sheath dents the straw and causes it to become weakened, resulting in the wheat lodging at about harvest time. Also, on account of the plant food which the maggot consumes, malnutrition takes place, resulting in small, light, and shriveled kernels. These two features are the ones which make the fly so disastrous. For a good many years, in the long



A Big Crop of Rye on Recently Cleared "New Ground" in Benzie County.

run the wheat which was sown in the late fall proved the most successful crop and the exceptions to this depend upon the weather. What one wishes to do is to delay the planting until the late fall brood of the fly has come and gone but this will vary with different seasons. He also wishes to plant his wheat early enough so that it will not winter-kill.

Thus one is between two fires, of which the former is often the hotter. The Bureau of Entomology of the U. S. Department of Agriculture recommends that wheat may be planted in northern Michigan after September 1, and in southern Michigan after September 20. In most years this will be after the late fall brood of the Hessian fly has gone.

As far as we can govern the conditions, well fanned wheat should be planted well along in the autumn (after September 1 to 20) and on a well prepared seed bed.

Ingham Co.

I. J. MATHEWS.

FERTILIZING FALL-SOWN GRAIN.

Lime for Wheat.

I want to ask your opinion about using lime on wheat ground. The field I am intending to fit, one-half had been sowed to barley and the other half to oats, both a good crop. This morning my men started to draw barnyard manure, 10 loads to the acre on the barley ground. For what I shall not have barnyard manure I shall use about 200 lbs. to the acre of fertilizer. I ordered two tons of lime, more than I need for my alfalfa ground. Would you advise using lime on my wheat field and if so how much and how would you use it?

St. Clair Co.

M. C. M.

Probably the most practical place in the world to put lime is on ground that is to be sown to wheat. After the ground is plowed and say partially fitted or harrowed over for wheat, then distribute the lime broadcast. This can be done with a lime distributor or it can be done with a shovel, but, of course, you can't do it as evenly nor you can't gauge the amount as well. If you have got hydrated lime or real fine ground limestone you can do it with the fertilizer attachment to a grain drill. But in this way you can't get hardly enough to the acre. If it is ground limestone you ought to put on about a ton to the acre. If it is hydrated lime or burned lime then a half ton or perhaps 500 lbs. would be effective. It may be that your land is too acid for the best development of the clover plant and yet it will raise good wheat. Wheat will do better on slightly acid soil than clover. Having only a small amount of lime I should put it on pretty liberally in a good strip across the field or two or three strips across the field. Then if you seed this field to clover next spring you will be prepared to note the effects of lime. I think it would be one of the best things you could possibly do, to use the balance of the lime on your wheat. We know what our soil needs a good deal better after we try things. In fact we can't find out really what our individual farm soils need until we do make some experiments.

Fertilizing Rye to Help the Clover Crop.

I have a field that is now into beans, that I intend to sow to rye and seed down to clover in the spring. It is pretty good land, except a few sandy spots. I am thinking of applying about one ton of fertilizer so as to help the seeding. Would it be best to apply this fall when I sow the rye, or wait and sow in the spring and drag in with the clover seed? Remember, I do not care to help the rye so much as I care to get a good catch of clover. How would you apply it and about what analysis would you use?

Kent Co.

SUBSCRIBER.

In my own mind there isn't any question but what it is better to use the fertilizer this fall when you sow the rye. Then the fertilizer is thoroughly mixed with the soil. Distribution is a great factor in getting results with commercial fertilizer. That is one trouble with people, they do not get it thoroughly mixed with the soil. Fertilizer will not only help the rye crop but it will also help the clover crop which follows. If the land is pretty well run I would use a good liberal application, from 300 to 500 lbs. of good commercial fertilizer on this fall. There is another thing that ought to

be taken into consideration here, and that is, whether this land is deficient in lime. If it shows an acid reaction with litmus paper in any way it will pay well to use from one to two tons of lime to the acre. This ought to be applied before the rye is sown and harrowed into the ground. You can't get good results on soil that is deficient in lime. You can't get a good, healthy, vigorous growth of clover on soil that is acid in reaction or is deficient in lime, neither can you get the best results with commercial fertilizer on this kind of soil. If the soil is acid, if it is deficient in lime, clover will not do well, no matter how much fertilizer you apply. On the other hand, if you sweeten the soil by applying lime then the clover plant can utilize the fertilizer which you apply and make a vigorous and profitable growth.

I would by all means apply the fertilizer this fall instead of next spring. If you put it on next spring, even though you harrow it in thoroughly, if the season is dry you won't get the benefit from the fertilizer that you will if it is thoroughly mixed with the soil. In fact, it is almost impossible to mix it thoroughly with the soil in the spring. I am aware that you would get good results sometimes. If the rye or the wheat crop comes through the winter in poor shape it is a good plan to apply fertilizer in the spring and harrow it in. It helps it. But at the same time it is better to put this in in the fall when you sow the rye.

Seeding Alfalfa with Wheat in September.

I have about three acres of clay land, quite high and tiled which I wish to sow to alfalfa. I wished to know if you could recommend sowing to wheat about September 1 and at the same time sowing to alfalfa. Should we not secure a good stand and could I sow alfalfa again in the spring on the wheat. I am at a loss to know if September 1 would be too late for it. This field is now timothy sod.

Gratiot Co. A. R. W.

I wouldn't want to risk seeding alfalfa as late as September 1, under favorable conditions, that is with a well prepared seed bed without any cover crop, and favorable weather, it is too late. Alfalfa is too slow in starting. With ordinary years it never would get growth sufficient so that it would stand the winter. Alfalfa ought to be sown not later than August 15, and the first of August or the last of July is better yet. It is pretty late even now to plow a timothy sod and get it in good condition for wheat, let alone alfalfa. The sod should be plowed at once and a great deal of work spent in cultivating it and rolling it to get it in proper condition so that it will be a good seed bed for wheat. Then again, alfalfa sown in midsummer should be sown without a nurse crop. It should have the entire ground to itself. Then it gets none too big to stand the winter. If I wanted to get this field to alfalfa as soon as possible, I would plow the ground this fall and put it to early peas or early potatoes next spring, and as soon as these crops were off I would harrow the ground and prepare it as soon as possible and then seed to alfalfa without a nurse crop. It is possible if you would seed to wheat this fall, then next year cut the wheat just as soon as it was ripe, and thoroughly disk and cultivate the ground, you could prepare a bed for alfalfa that would be satisfactory. The wheat ought to come off by the 4th of July or soon thereafter. If special pains are taken to prepare the ground at once, and if the moisture proposition is favorable, you could seed to alfalfa in the last of July or the first of August on this wheat stubble. If your land is in good condition you might expect good results. I would certainly prefer this to sowing it with the wheat this fall. I have practiced mixing alfalfa seed with the clover seed and seeding on the wheat ground in early spring for the last few years, but I have not succeeded in getting a very good stand of alfalfa. Of course, it don't give the alfalfa very much of a show. You have got a wheat crop, then you only mix a third of your seed alfalfa, the rest is red clover. I am of the opinion that after we get our soil well inoculated with the alfalfa bacteria that we can seed in wheat in the spring with alfalfa and get fair results. This last spring I did not seed to clover until after the ground was dry enough so that it could be harrowed. We didn't get our clover hulled in time to sow it as I usually do before the frost leaves the ground. I mixed nearly a third of the seed alfalfa, and harrowed the wheat ground both ways. It has been an exceedingly dry summer, no rain in the early part of the summer, nor for that matter, at any time, and the seeding is exceedingly small and doesn't look fav-

orable, but quite a lot of the alfalfa is alive. In some places there is as much alfalfa as there is red clover.

COLON C. LILLIE.

SEED POTATOES AND THE CROP.

In going about the state we find that there is a general complaint that potato seed did not grow as expected, and there is great disappointment in some places. With some farmers there is almost an entire loss of the crop on account of the seed not growing.

We have taken the liberty to question some of those who have failed with their crop, on account of "poor seed," as they term it, and have invariably found that the cause of failure was mismanagement with the seed. One man said he had taken great pains with his seed, as he cut it and put it in the granary at least three weeks before he planted his crop. Farmers have been cautioned repeatedly through the Michigan Farmer to not pile potato seed after cutting, or store it in boxes, crates or bags, as it will heat and the life of the eyes will be destroyed.

Others have stated that they cut their potato seed and planted it immediately and it did not grow. It is safe to cut potato seed and put in the ground while the cut is yet "raw" or "fresh" as we term it, early in the season while the ground is yet cool. It certainly is not safe to put freshly cut seed in the ground after, and during hot weather, as the warm ground, especially sand, coming in contact with the freshly cut tuber will cause it to decay before the sprouts have time to send out little rootlets to gather nourishment from the soil.

Where there is a partial loss of seed by cutting and putting it in the ground at once, I have noticed that there is but a feeble growth of the stalks that are standing. The sprouts were not well nourished by the parent potato, and they did not get a vigorous start—had to struggle to live for some time—consequently like a young animal which has been stunted while very young, are unable to recover during the whole period of life.

It is safe to cut potato seed during hot weather, but it should not be planted at once. It should be spread out thinly in a place where it can be protected from the direct rays of the sun for a few days until the freshly cut portion of the potato has time to dry or become calloused over, and then it can resist the influence of the warm ground.

Some who are heavy losers from mismanagement of the potato seed this season, have declared that they will not plant anything but whole potatoes hereafter. Such a course would lead to a considerable waste of tubers, especially with some varieties. To plant all small potatoes is a poor practice. It is a better plan to use good judgment in cutting and handling the seed.

I have referred to this matter of mismanagement of potato seed at this time of the year, while the results are fresh in the minds of those who have sustained heavy losses, and the example of a poor crop is before all who may desire to look to see that in many fields there is a partial failure, simply because the seed was not properly handled and cared for before it was put in the ground. There are valuable lessons about the handling of potato seed that should be well learned and remembered.

Wayne Co.

N. A. CLAPP.

FILLING THE SILO.

The dry weather has caused a great many farmers to fill their silos rather early. Some of them will be filling the silo for the first time and will no doubt encounter some difficulty in getting it filled properly. Filling a silo correctly is essential to first-class ensilage.

The stave silo that has been exposed to the hot sun all summer long should be tightened so that it is air tight. If it cannot be tightened so that it is air tight by shortening the hoops, a small amount of clay can be placed in the cracks as the silo is being filled.

A great amount of labor and expense can be saved in the field if a corn binder is used to cut the corn. It puts the corn in bundles that can be conveniently handled. The binder should be started a day before filling and kept in operation until enough corn is cut to fill the silo. The best time to cut the corn is when the kernels have begun to dent or when a few of the lower leaves have begun to turn yellow. Do not let the corn get too ripe as it does not pack so well and spoils. It is not so palatable as where

it is cut at the right stage. On the other hand, if the corn is cut too green the silage will be too sour and the stock will not relish it, and it will not be such a healthful feed as good sweet silage undoubtedly is.

While filling the silo at least two men should distribute the silage evenly over the surface and tramp well. The heavier particles will remain in one place and if they are not scattered about the silage will settle unevenly and make mouldy silage. Care should be used in tramping the outside particularly compact to exclude all of the air that might enter through the wall. The silage cannot be tramped too solid. If the corn becomes too ripe or if the frost catches it before it can be placed in the silo and the leaves become too dry, it is a good plan to apply water to the silage to make it more compact. A stream of water running in the blower while filling will furnish enough moisture. Some apply the water by the use of a hose directly to the silage from the inside.

It is a good plan to refill the silo after the silage has settled three or four days. A small amount of the silage should be removed from the top of the silo before it is refilled since a small portion of it spoils. The silage settles five or six feet and a great amount of silage can be added.

After the silo is filled some material should be put on top of the silage to keep it from spoiling until feeding begins. Oat straw blown on top makes a good covering to exclude the air. If the oat straw is wet and some oats are sown in the straw it makes a still better covering. A covering of silage with the ears removed makes an excellent protector. If the silo is filled in this manner and the top carefully covered there will be very little danger of the silage spoiling.

Indiana.

J. C. KLINE.

MORE FARMERS SHOULD USE FERTILIZER.

The attitude of the average farmer toward commercial fertilizer has without doubt undergone a decided change during the past few years. Men who were formerly either indifferent on the subject or downright opposed to its use as a waste of good money, are now regularly buying and applying it to their crops in increasing quantities, as demonstration proves its value to their soil.

But few of the intelligent ones are buying indiscriminately, however. They demand the preparations which are particularly adapted to their needs, the special grades formulated so as to give each crop the elements best suited to its requirements. Results must surely be satisfying when men by experiment become convinced that it pays to apply as much as 1,000 pounds of specially prepared fertilizer to the land they are putting in potatoes.

These are facts which convince even the most skeptical. Granted that barnyard manure well cared for and properly applied, is a splendid all-around fertilizer, the fact that the supply is limited and that there is not half enough of it for the land compels the use of something which will supplement this. Plowing under clover and alfalfa adds humus to the soil as does the stable manure, but when it comes to concentrates we are compelled under ordinary circumstances to resort to other means and find useful the prepared commercial fertilizers. Try it on the wheat ground this fall and see for yourself what it will do.

Closely allied to this subject, it seems to me, is the treatment of seed to prevent smut, and other fungous diseases. That this can be done has been proven time and again. Such treatment of the seed for half an oat field brought the crop on that half to maturity bright and sound, while the adjoining portion, untreated, was covered with smut and only half a yield was harvested. Such experience as that is sufficiently convincing for any man.

Genesee Co.

E. E. ROCKWOOD.

THE KALAMAZOO COUNTY CORN CONTEST.

Under the auspices of the Kalamazoo County Farm Bureau we have just concluded a tour of inspection by automobile of the plots grown by the boys in the Kalamazoo County Corn Contest.

Seventy boys and four girls enrolled. The great majority had gone forward with the work. President Smith, of the farm bureau and myself were out six days. In each community we were accompanied by some local man, among whom were L. J. Bradley and J. Robert

Duncan, well known corn men. Instruction was given right on the ground and suggestions made for improvement the coming year. The children are enthusiastic and nearly all are making plans for next year when a full acre will be grown.—Cary A. Rowland, Director Boys and Girls' Corn Club.

WHY BOYS LEAVE THE FARM.

A spirit of uneasiness is felt by many independent farmers for the reason that their boys want to leave the farm. This desire to change from farm work to some different employment is shared by many boys and young men.

It is very natural for men who have, by industry and thrift, put themselves into the possession of a fine farm, to have a desire that their children shall own and occupy it after they are compelled to turn it over to somebody else. I shall insist upon it that the average boy or girl is fully as intelligent as the parents. When the parent is trying to influence the future of the child he should remember that he is dealing with an equal. I know it is quite natural for some fathers to talk to their sons in a know-it-all sort of a way, and I am quite certain that such talk is very distasteful to most boys, still they bear it because they have to.

A father who wishes to influence a son should first get acquainted with him. It would surprise some fathers to know that every boy in the neighborhood knows his son better than he does. I call to mind a circumstance which took place in my early school days. One of the larger boys left our school and was attending a private school. The father visited our school one day, and passed around from one boy to another explaining how well his son Richard was doing, and what great advancement he was making in his studies. He did not seem to know what was an actual fact, that every boy he talked to knew his son Richard much better than he did.

A friend and myself were standing by the side of the highway one day when we saw two persons riding down the road towards us, talking very friendly and familiarly. As they came nearer we saw that they were father and son. "Well," said my friend, "I never heard a father talk to a son in that way before. There they were talking to each other in the same tone of voice that one neighbor would talk to another. Such action is so rare that my friend noticed it and spoke about it."

Fathers are too apt to get in the habit of talking to their sons in a dictatorial sort of a way. As one father expressed it, "Now, I raised you up from nothing and it is your business to listen to me." It is more natural for mothers to talk to their children as though they considered them as equals. Boys and girls have well defined ideas of right and wrong long before they reach manhood and womanhood, and parents should study them to find out what those ideas are.

Branch Co.

O. A. VANDERBILT.

FARM NOTES.

Treatment of Smut in Seed Wheat.

I would be pleased to know of a formula for treating smut in wheat. Also, will the treatment be effective on seed wheat that is now smutty?

Eaton Co.

B. D. B.

There are two distinct kinds of smut which attack wheat, viz., stinking smut or bunt, and loose smut. The stinking smut, so-called, is easily detected because of the fetid odor which it imparts to the wheat. Also because of the presence of smut balls or kernels in the wheat. These grains are slightly larger and more irregular than healthy ones and are familiar to all. They are easily broken open and the powder with which they are filled, which is really composed of myriads of minute spores or seeds of the disease, adheres to the other kernels, making them unfit for seed, and when very plentiful making the grain of little value for milling purposes. This smut yields to a number of treatments, the most commonly used of which is the formalin or formaldehyde treatment.

This is applied by adding one pound of commercial formaldehyde to 50 gallons of water. The grain is then spread out on the floor and sprinkled or sprayed with the solution, then shoveled over until all is thoroughly moistened, when it is left in a compact pile, preferably covered, for two or three hours, and then spread to dry. About one gallon of this mixture is required for treating a bushel of wheat.

There are several other treatments,

one with corrosive sublimate, which is objectionable because of the poisonous nature of the chemical; the copper sulphate treatment, which is more apt to injure the germinating quality of the wheat; and the hot water treatment, which is more difficult to apply. For these reasons the formaldehyde treatment has come to be the standard in use and if the formaldehyde is of the proper strength (a 40 per cent solution) good results are assured.

The loose smut of wheat is not nearly so prevalent, although in some seasons and localities it causes considerable loss. It does not yield as readily to treatment of the seed and where it is present in the field it is better to get seed which was not from an infected crop. Its appearance is characterized by leaving a blackened and naked head instead of normal appearing head, as is the case with the stinking smut.

Making Cowpea Hay.

Will you kindly tell me how to harvest cowpeas? I have nine acres. Some are drilled the same as beans and were cultivated and a few were broadcasted. Will leave a few for seed, but would like to make hay of most of them if it can be done. If not, will plow them down for corn next year.

Barry Co.

G. H.

While cowpeas are somewhat difficult to cure into hay on account of the rank and succulent nature of the plant, quantities of them are, however, made into hay in the south each year. From reports of the methods used in the south it would appear that different methods are used in different sections, just as different people here use different methods of curing clover hay. The Mississippi Experiment Station advises starting the mower in the morning as soon as the dew is off and cutting during the forenoon. As soon as the top of the swath is well wilted the tedder is then run over the field to shake the vines up and expose them more thoroughly to the air and sun. When the crop is heavy the tedder is used the second time and usually the vines so treated are cocked up the following afternoon and left to remain two or three days before being opened up and hauled to the barn. If it rains while the vines are still in the swath they are allowed to dry off on the surface and then tugged and handled as before. Rain damages this hay less than clover hay if handled properly after being wet.

Prof. Massey, of the South Carolina Station, advocates a different method of curing. He advises curing in the swath until a stage of dryness is reached so that when a handful of vines is twisted hard no juice will run out. Then rake up and haul directly to the mow, permitting it to cure in the mow.

While more difficult to cure than clover hay, the same methods which are employed in curing clover hay will succeed with cowpeas. The crop is generally cut for hay at about the time the first pods begin to ripen.

Marl as a Soil Corrective.

Would you advise me regarding the value of marl on sandy or clay soil that seems somewhat depleted as to its ability to raise a good clover crop? Also, is it any benefit to the corn crop, fruit trees and alfalfa? If it is applied two or more years hence? Should it be immediately worked into the ground by plow or disk or will it hold its value if left on the surface? Kindly answer in Michigan Farmer and oblige a subscriber of 46 years.

Jackson Co.

A. F. D.

There is no doubt that a very large percentage of Michigan soils would be benefited by an application of lime, particularly soils that do not grow clover readily, or soils on which it is difficult to get a good catch of clover. As a good grade of marl is practically pure carbonate of lime, this is one of the best forms of lime to apply as a soil corrective. While all clovers require a relatively large amount of lime as a direct plant food, it is generally considered by students of the problem that the beneficial effect is due rather to a sweetening of the soil which produces an alkaline, rather than an acid reaction, thus making it a more acceptable home for the bacteria for which the clover plant is a host, and without the presence of which it will not reach a maximum development. For alfalfa this condition of the soil seems to be even more necessary than for clover and in a great many sections of the state farmers are finding it absolutely necessary to apply lime in order to secure a good stand of alfalfa.

Where marl, or ground limestone, which is also a carbonate of lime, are applied to the soil it is not necessary to work it into the surface at once, although better results will follow if it is ultimately mixed with the surface soil. Undoubtedly,

if applied now it will be of benefit two or three or even twenty years hence. The writer last year saw a very good illustration of this lasting benefit in a field of alfalfa upon a portion of which ashes had been applied more than twenty years ago. In the crop then growing on the land there was all the difference between a heavy yield and a poor crop, due undoubtedly to the application of lime and potash some 22 or 23 years ago. This form of lime will retain its properties for many years and may be applied liberally with profitable results. The benefits to crops other than legumes will not be marked if noticeable at all, but it is well worth while to apply lime if it will produce a better stand or more vigorous growth of clover or alfalfa.

Disinfecting a Cellar.

Last winter a part of my potatoes rotted in the cellar. I think my potatoes were struck by late blight, which probably caused this rotting. At digging time I found numerous hills with soft, slimy tubers. Now I suppose that the spores of this potato rot got a foothold in the cellar. I would like to get information through your valuable paper, as to how I can disinfect this cellar. The cellar has concrete walls and gravel bottom, was built three years ago, is very dry and nearly as well lighted as a living-room, and is located under the house. I am thinking of putting a cement floor in bottom of potato bins, but some neighbors say potatoes will not keep on a cement floor. Any advice in regard to this and the first question will be much appreciated.

Manistee Co.

F. D.

It is probable that a basement to which plenty of fresh air and light has been admitted will be pretty well disinfected by these natural agents. However, if you think further disinfection is required, it is easily effected by the use of formaldehyde gas. This treatment is applied by combining three parts of potassium permanganate with eight parts of formaldehyde by weight in the following manner:

Place the permanganate in the bottom of an earthen crock having a capacity of at least one gallon for each pint of formaldehyde to be used. Then pour the formaldehyde in the crock and retire quickly from the cellar, shutting it up as tightly as possible. The formaldehyde will be converted into a gas which is deadly to the spores of fungi or bacteria of any kind.

Where potatoes are to be disinfected in a cellar the Wisconsin Station finds the use of about four pounds of formaldehyde and 24 ounces of permanganate for each 1,000 cubic feet of space to be effective. For ordinary disinfecting purposes, however, in the proportion above given one pound of permanganate is commonly used to each 1,000 cubic feet of space and would probably prove effective.

For ordinary purposes of disinfecting a cellar, however, whitewash will serve a very good purpose.

Potatoes can be kept successfully in a cellar with a cement floor. The writer has used such a cellar for storage purposes for many years and never had any difficulty with potatoes keeping, except in one instance when they were affected with spores of late blight.

Essentials in Ice-house Construction.

Will ice keep as well in a solid concrete ice house built underground as in a double board house with air chamber built above ground? Which is best, a concrete floor with tile drain or a good gravel floor with a good stone drain?

Barry Co.

SUBSCRIBER.

Ice will keep well in a concrete house built above or in the ground, provided it is properly insulated from the walls and is provided with proper drainage. As concrete is a good conductor of heat more insulating material will probably be required than for a double board house with air chamber built above ground. But if properly packed and given proper attention during the summer, it will keep in either kind of structure sufficiently well. For drainage a floor of coarse gravel or cinders is best with either good surface drainage or tile drain laid about the foundation in such a manner as to insure the best possible drainage.

Black Medick.

Will you please tell me what the enclosed plant is? About five years ago I found the first one on a hill in the pasture; now it is scattered over the field. Is it a weed or is it a clover?

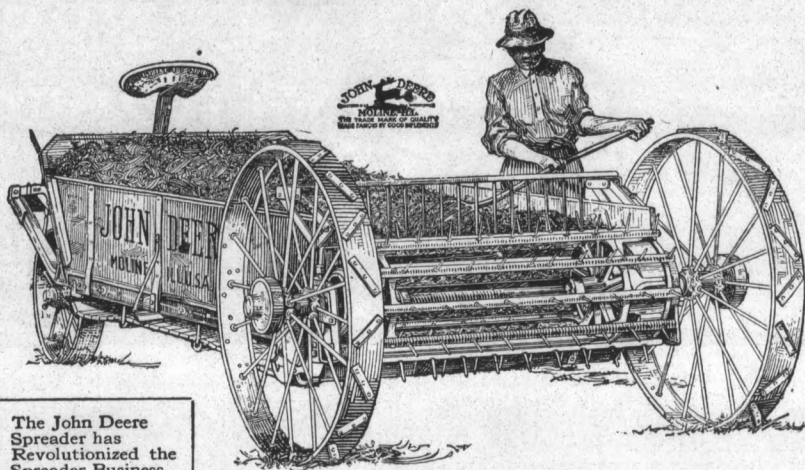
Genesee Co.

C. M. P.

The specimen enclosed was Black Medick, also called Nonesuch (Medicago lupulina L.) This is an annual legume, the seeds of which quite closely resemble those of alfalfa and are not infrequently used to adulterate alfalfa seed. It was originally introduced from Europe but is often found in Michigan. While it is not a bad weed it is not of sufficient value as a forage plant to make it desirable to sow the seed.

John Deere Spreader

• The Spreader with the Beater on the Axle



The John Deere Spreader has Revolutionized the Spreader Business. Here are Some of the Reasons:

The Low Down Spreader with the Big Drive Wheels

What You Want

Here's your chance to get exactly what you want in a manure spreader.

One that is easy to load, light for your horses free from constant repairing, and one that will last as long as you think it ought to.

What You Get

With a John Deere you get a low-down spreader in which the advantage of big drive wheels is not sacrificed for the low down feature. You get a spreader that is easy for your horses because it has these big drive wheels, together with roller bearings, few parts, the center of the load comparatively near the horses and evenly distributed over all four wheels.

No clutches to get out of order, no chains to give trouble, no adjustments necessary.

Built with steel frame, securely braced, like modern railway bridges—strong and durable.

Why You Get These Things

Mounting the beater on the axle makes all these things possible in the John Deere Spreader.

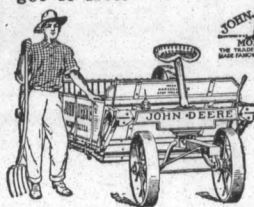
It does away with some two hundred trouble-giving parts. It makes the spreader low down. It permits the use of big drive wheels. It does away with clutches, chains and adjustments. It puts all the strain and stress of spreading on the rear axle, where it belongs, not on the sides and frame of the spreader.

It does a lot of other good things, too. They are fully illustrated and described in our new spreader book.

Get this Spreader Book

It tells how the John Deere Spreader is made and why it is made that way. It contains illustrations of the working parts and colored pictures of the John Deere Spreader in the field. It also has valuable information in regard to storing, handling and applying manure to the land.

Get one of these books free, by asking us for our spreader book, Y 5



John Deere Plow Co., Moline, Illinois

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You, too, can earn independence. You, too, can start with small capital and soon pay us from your profits. But you **must** have the

Sandwich (money maker) Motor Press

Each year hay press buyers are more careful. They demand better machines with bigger tonnage. Yet each year Sandwich sales have gone ahead—by leaps and bounds. For under every working test, the Sandwich beats all ordinary presses 2 to 8 tons daily. 25 tons are an every day job for the Sandwich, and 30 to 40 if you hustle.

Gas Engine on Same Truck

This combination makes the Sandwich Solid Steel Motor Press the most complete hay baling outfit in existence. You can't wear it out and it doesn't break down. The heavy steel roller driving chain does away with slipping belts—with their dangers and delays.

Gas Engine is high grade, hopper cooled

type, gear driven magneto, 4, 6, 8 or 10 horsepower—and develops more than rated.

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Rises high up out of the way of the operator and will stand hard crowding. The motion is slow, steady, sure and strong. And rain or shine the bales come out slick, clean and solid—from 1 to 2 a minute. It's great for windrow work.

Write for "Tons Tell"—now FREE

This surprising book—free to those who are wide-awake—tells you the enormous profits waiting the touch of your hand. What hundreds like you are doing—you can do. So write for it today.

Can Stop Instantly

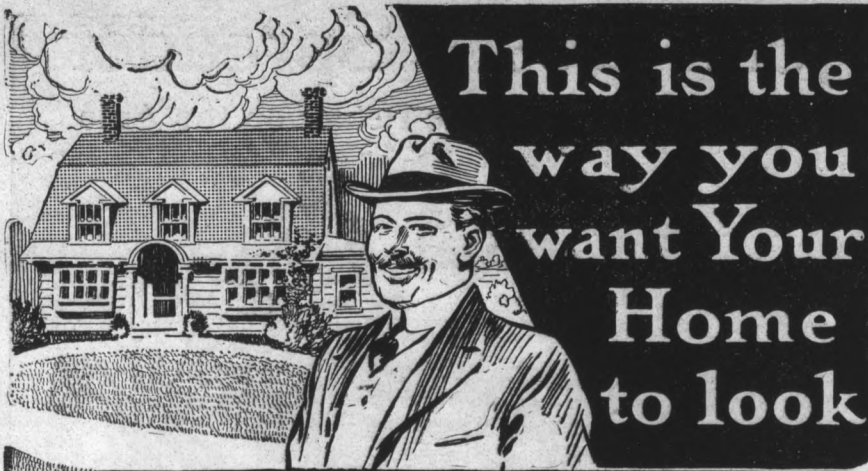
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to look

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But the greatest reason of all for fall painting is in preparation for the winter months—sealing up minute cracks that let in the wind and cold, fixing up the inside of the house so it will be cheerful and bright for the entire winter.

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ANNOUNCE the arrival at Wooster, Ohio, of their new importation of Percheron and Belgian stallions and mares. These horses reached Wooster August first and are the best and largest number of horses ever handled by our firm. You are invited to Wooster to see them. Look for our exhibit at the Michigan State Fair.

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Live Stock.

CALCULATING VALUE OF CATTLE FEEDS.

In farmers' bulletin No. 399 published by the United States Department of Agriculture the author, J. M. Westgate, has assigned certain values to the essential parts of commercial feeding stuffs. Protein is given a value of \$0.067 a pound; carbohydrates \$0.006 a pound; and fat \$0.01 a pound. These figures may be used as a fairly accurate guide in calculating the value of different feeds on the market. They are only relative, however, as the prices of food elements vary from year to year and in different sections of the country.

In some feeds it will be possible to buy protein cheaper than the value given it in the preceding figures while the same will be true with the carbohydrates and fats. For example, 100 pounds of cottonseed meal will give about 35 pounds of digestible protein. If the feed cost \$1.65 per hundred pounds, the protein would cost only five cents a pound and there would be the carbohydrates and fat besides.

As a farm will produce all the carbohydrates and fat needed in a ration for milch cows, about all that is necessary to consider is the cost of the protein. The feed that will furnish this the cheapest generally is the most economical.

It is a simple mathematical calculation to get the cost of this per pound when the analysis of the feed is known. Wheat bran, which contains about 12 per cent of digestible protein will give 240 pounds of it to the ton. It is figured the same as simple interest on a note, by multiplying the weight of the feed by its per cent of protein. Then divide the price of the feed per ton by the number of pounds of protein in the ton and the answer will be the cost of the protein per pound. With bran at \$25 a ton the protein would cost slightly more than 10 cents a pound.

In oats which contain nine per cent of digestible protein there would be 180 pounds of protein in a ton and it would cost approximately 14c a pound when oats were selling at 40c a bushel. If the oats were 30c a bushel the cost would be about 10c a pound, making oats at 30c a bushel the equivalent of bran at \$25 a ton. If oats were 40c, bran would be the cheapest feed.

By the same process of figuring it is

to buy it is necessary to take into consideration both its analysis and its cost. A certain feed may be reasonably cheap in one section, but far from economical in a different market.

Penn.

L. J. HAYNES.

FEEDERS' PROBLEMS.

Rye vs. Rye Bran.

The mill will give me \$20 per ton (56c per bushel) for my rye. They will sell me rye bran at \$24 per ton. Had I better sell the rye and buy the bran or have the rye ground and feed it to hogs and milch cows?

Jackson Co.

L. M. J.

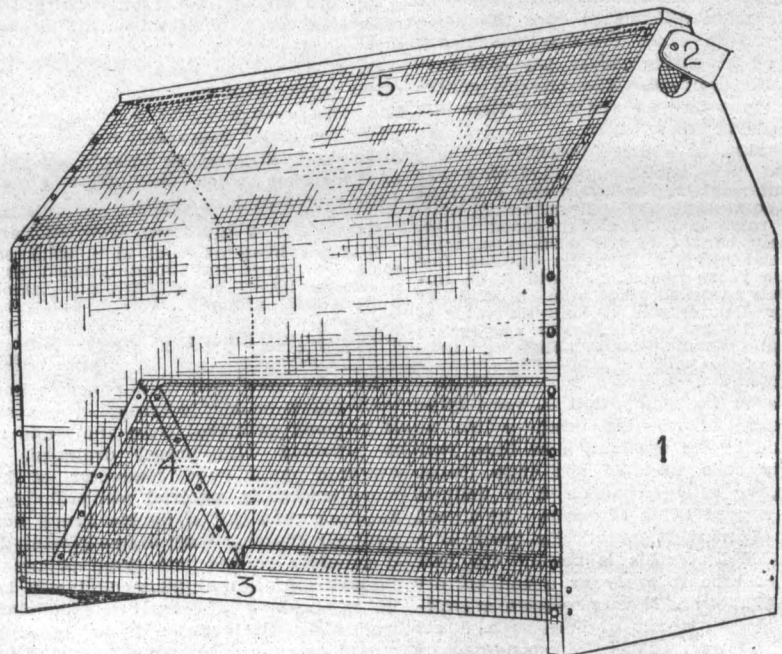
The relative economic value of these grains would depend not a little upon the animals to which they are fed and the other factors in their ration. For fattening hogs on green forage the rye ground and fed in the form of slop would undoubtedly be the most economic feed. On the other hand, if other grains, notably corn, are to be fed then a limited amount of rye bran might be fed with profit, although bran is a feed containing too much fibre to form the base of a ration for either fattening or growing swine.

For dairy cows the rye bran would be superior to the rye if used in connection with other feeds, such as oats, because it is much richer in protein, having a somewhat wider nutritive ratio than the wheat bran. But if rye is compared to corn and rye bran to wheat bran, the feeder will get a fairly good idea as to the relative merits of these two feeds for any purpose, although they lack somewhat in palatability and will not give quite as good results as the two grain feeds mentioned.

A GOOD FLY TRAP FOR THE STABLE.

This Michigan fly trap catches by the thousand. Anybody can make one. Details of construction are as follows:

1. End boards 12x18 inches, slanted from two inches at top downwards eight inches.
2. Two-inch hole at top to empty out dead flies.
3. Two strips 2x22½ inches, edges down within one inch of bottom.
4. Wire 24x60 inches. Nail one end near center (by turning over surplus



found protein in oil meal costs about six cents a pound when the meal is \$37 a ton, one cent a pound more than it would cost in cottonseed meal. The same method can be applied to brewers' grains, gluten, ajax or any of the by-product grains.

Feeders must learn it is not the weight of feed a dollar will buy that counts, but the amount of food elements the feed contains. One grain may be more economical at \$1.60 a hundred pounds than another is at \$1 for the same amount because it furnishes the food elements at a net cheaper cost per pound. As protein in oats is very expensive it will be more economical to sell them and buy cottonseed meal or some other concentrated feed. In figuring out what feeds

edges) eight inches from the bottom, slant to bottom, wrap around and bring the other end to ¼-inch of the first end, leaving a space for the flies to crawl up through.

5. Nail on top strip 2x24 inches. The trap will be 12 inches wide, 18 inches high in the center and 24 inches long—suitable size for restaurants, markets, groceries, barns, etc.

Bait with banana peels or other decaying fruit, black molasses, brown sugar wet, etc. After feeding the fly will invariably go up into the large apartment. At night kill them with hot water; or cover the trap with old carpet or oil cloth and put a small cloth saturated with formaldehyde under it, or sprinkle them with insect powder, or burn 20

drops of carbolic acid on a hot shovel under it. The latter is sure and instant. Cost: Wire, 20 cents; lumber and nails, 30 cents.

TO PROMOTE MORE SCIENTIFIC HORSESHOEING.

The first school for horseshoers to be established in America is to be opened in connection with the veterinary department of Cornell University next winter. It is stated upon good authority that in many European countries horseshoers, before being permitted to engage in the business must give some time to the study of the anatomy of the foot and leg of the horse in order that horses may become better safeguarded against bad practice in horseshoeing and the owner be assured that his animal is being shod by a well qualified man. This school is to be open only to residents of New York state, but there is a movement on foot to secure similar action by other state colleges throughout the country.

LIVE STOCK NEWS.

Severe drop in hog prices and a widening range in the market is due to several causes, chiefly a supply at all points recently which has been above packer needs. Shrinky sows have come in abundance off grass and these classes were pounded hardest while the heavy packing hogs, arriving in big volume for the hot weather period, put killers in a sour mood toward them. Fresh meats demand is only moderately good, obviously for the reason that pork at retail is practically as high as beef and mutton. Advancing value of old corn and its shortage in many sections induced farmers to cash hogs freely. Holding them in hopes of a reaction in the market did not seem good policy since the board bill rises high when corn keeps getting more expensive daily. A hog feeding on cheap corn is a good investment but a finished animal being boarded on high-priced feedstuff in anticipation of a turn in the market is an expensive proposition which many farmers have been desirous of getting rid of.

Iowa state biological laboratory officials are hard pressed to supply hog cholera serum to a growing demand for it in that state. A loss of \$12,000,000 by the cholera epidemic last year caused the state legislature to appropriate \$50,000 for a serum plant to manufacture serum preventative and every farmer with a sick hog is rushing an order to the state biological department to hurry him some of the serum. Success in checking the disease is greater than in manufacturing the compound with which to do it. Where the farmer inoculates his herd before they come down with the fever he usually saves them, but the Iowan's chief trouble, according to reports from that state is to get the serum in time to make it of real use.

No matter how high a beef cattle shortage—which appears inevitable a few months off—would send retail prices under ordinary conditions, the consumers' pocketbook and its elasticity to cover his household expenses will be the main factor in regulating costs. This is the opinion of live stock traders at chief market centers. They reason that the butcher, realizing his slim chance of getting a retail price which will afford him making a profit if wholesale cost goes much higher, will buy less beef. If beef is advanced at retail it is highly probable that less of it will be purchased by the consumer of average means. The purchasing power of a dollar is a strong force in controlling its expenditure and when a dollar will buy less than three pounds of beef the average consumer may be expected to send it into another market to buy a greater quantity of necessities. In other words, beef will become a luxury, and luxuries are not common on the table of the wage earner.

Late reports gathered from reliable sources indicate that most of the grass-beef-producing region lying west of the Missouri river will be prepared to ship to market full supplies of cattle this year, but reports from the northwestern range country are quite different, as the two Dakotas, Montana and Wyoming shipped out their cattle holdings so closely last autumn that they are greatly short on marketable cattle this year. Prices ruled so unusually high last year that owners found it highly profitable to market most of their holdings, and grass cattle will be scarce this season. The shortage is variously placed by different authorities as from 25 to 50 per cent compared with last year, and it is stated that the cattle marketed in the middle west will consist chiefly of fat steers, as cows and calves will be worth more money in far western markets, where a drouth has greatly depleted the supply. Hay is plentiful, and thin steers will be largely held back for feeding through next winter. Pacific coast butchers are invading Nevada and Idaho, and they are trying to contract for grass cattle for fall delivery, but owners are not inclined to do so, as feed is plentiful, and higher prices are expected later on. In the corn belt states around Chicago and east of there, as well as farther west, the corn-fed heaves have been mostly marketed. At the present time grass cattle predominate in the markets of the country, and this will be even more the case as the season advances. This will result in a further widening out of prices for cattle, and already killers are discriminating strongly against the commoner grassers, finding that they dress out unsatisfactorily.

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a special proposition for every reader of this paper who is too busy to come to the Fair.

We know that thousands of farmers will be too busy to get away right at this time—so we ask every man who is interested in the purchase of a gasoline engine to send in the coupon and get the big Gray Engine Book "S" and our

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September 15th to 20th

Remember this special offer is good for Fair Week only, and in order to take advantage of it, you must send in the coupon below, or write us a postal mentioning *The Michigan Farmer*, and your letter or postal must be mailed before the last day of the Fair, which is

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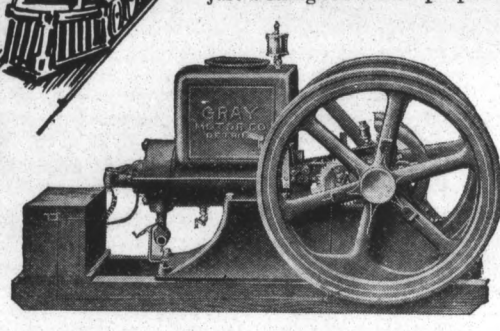
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During the Fair we are going to do the biggest week's business in the history of our organization, and in addition to refunding the price of your railroad fare, we will offer all engines at *special low prices during Fair week only*.

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Remember that the Gray Guarantee is back of any engine we sell at the Fair just the same as when sold through dealers.

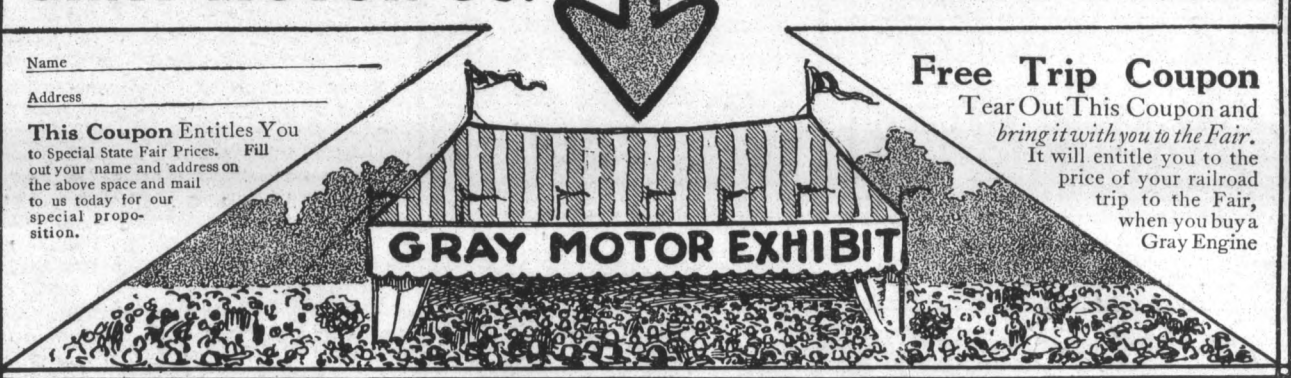
But whether or not you buy an engine at the Fair, we want you to come and see us—we will have one of the finest engine exhibits on the Fair grounds. Every *Michigan Farmer* reader will be welcome at the Gray Exhibit.

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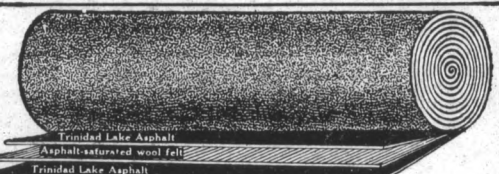
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Dairy.

CONDUCTED BY COLON C. LILLIE.

DAIRY NOTES.

The price of cows is higher than it has ever been during my remembrance. Just recently I needed a little bit more cream and I went out to buy some cows. I have been short of cows for some little time, having sold too many heifer calves previously. I find that ordinary grade cows, new milch cows, of course, are selling from \$60 to \$85. We used to buy the same class of cows for from \$25 to \$35, then \$40 to \$50, and now they have jumped up to \$60 to \$80 and \$85. This increased price is not due entirely to the price of dairy products. In fact, I think it is due more to the high price of beef than anything else. A common-sized dairy cow if she is fat is worth \$40 and \$50, and even \$60 for beef, and this increases her value when you come to consider her as a dairy cow. A year ago last spring I purchased at a sale some grade cows and kept them all summer and all winter. They milked right along, did not give large flows of milk, but they more than paid the way. This spring I sold them, together with two Jersey cows that had become barren and failed to breed for two years. I sold them by the pound on foot, and the cows came to over \$60 each for beef, so this is one thing that makes dairy cows exceedingly high at the present time. They are worth a good price for beef, say nothing about the dairy qualities.

The quality of the grass in the pastures this year is exceedingly fine. It is not to be compared to the grass last year. Half as much feed this year will produce as much milk or as much growth on young stock as it would last year. I heard a butcher say the other day that grass-fed beef this summer was opening up fine. It had fine quality, and they were finished off. There is quality to the grass. The grass hasn't grown so very fast this year but there is nutriment in it. Last year there was such an excessive amount of rain that the grass was washy, it didn't contain the food nutrients, and it is a fact that our young cattle, calves and young bulls and sheep are keeping in better condition this year than they did last. Of course, they have pretty good pasture because we haven't overstocked it. But another thing, the cows are giving more milk this year, even with excessive hot weather, than they did last, and we have no succulent food at all, we have had no silage, but the hay and what grass they get out of the pasture is of enough better quality so that it keeps up the flow of milk better than it did a year ago. For instance, we have had several cows that came fresh this last spring in March and April, and some in May, and they have held their flow of milk as well as I ever knew cows to hold up during the summer, especially without any succulent feed at all. It is largely the quality of the grass and hay that is responsible.

KEEP STABLES IN A SANITARY CONDITION.

It will pay farmers to try to keep their barns and yards in as sanitary condition as possible. It is one of the most essential things towards progress in their line of business. The store keeper recognizes the value of it in keeping his store. Every barn where cattle and horses are kept presents a problem for one or more men to keep in a clean sanitary condition.

Twice a year at least, the walls, ceiling and partitions of all the stables should be swept as clean as possible and one or two coats of whitewash applied. This not only adds to the appearance of the place but to the cleanliness, as the whitewash is excellent to sweeten the stables, drive out spiders and other insects that will be found around ill-kept stables.

The ceiling in many stables is made of boards placed four to eight inches apart. Hay and straw are thrown on top of these. This makes a fine place for spider webs to collect and many other insects to nest. Particles of hay or straw also will drop on the cattle and get into the milk. When one is milking, dust and insects are more liable to get in the pails than if the floor above is smooth or made of matched lumber. It can then be white-washed with the walls and partition.

The stables ought to be cleaned out each morning and evening and fresh bedding supplied for the cows, horses and other stock. If the stables are not kept clean the cows soon become dirty and the milker is unable to sit down and procure the milk without getting some of the dirt and manure in the pail, which taints the milk, quickly making it unfit to be used.

The yard is an important thing about a barn. This should be kept dry and free from mud holes, so that when the cows are driven into the barn they will not get their udders and legs covered with dirty water and mud. It will be necessary to spend much time and labor before the milker can sit down and do his work as it should be done. Besides if the cow's udder becomes wet frequently and she goes into the cool air it becomes irritated and the teats become sore. This may easily be overcome by using some of the spare time of the farmer. With his team he can get a few loads of gravel and fill the holes, first getting tile and draining the wet places.

Plenty of light is very important in a well kept stable. Have plenty of windows and arranged so that they may be opened to let in lots of fresh air.

Feed for the stock should not lie around on the barn floor where one is continually walking over it. This makes it messy and not in a fit condition to be given to the stock. We do not like to eat our vegetables after they have been lying around on the floor where all the dust settles on them. If we expect to get good milk from our cows we must give them the proper food and care as well as a clean and sanitary stable in which to sleep.

A cow kept in a stable without sufficient light, nothing to lie on except boards or cement and this covered with dirt and manure and only half fed, should not be expected to do as well as one kept in a nice light, airy stable with plenty of straw to lie on. Yet many of the farmers give this the least of their thought and attention and then wonder why their neighbors who take care of their stock are making more money, by getting more milk, better butter and higher prices.

Pennsylvania. C. S. VAN DUSEN.

HOW TO HANDLE BULK MILK DELIVERED AT THE HOME.—II.

Milk dipped from a can or drawn from the faucet of a can may be a source of danger, and should be avoided where it is possible to get bottles of milk, according to the specialists of the Department of Agriculture. The air of city streets and houses is laden with dust and bacteria, and frequently particles of filth. Even if the milk is clean in the milkman's receptacle, the repouring of it into an open vessel or pitcher for the customer gives an excellent chance for floating disease germs to get into the milk. In stores where dipped milk is sold, filthy conditions often prevail, and milk is frequently handled most carelessly. Clerks and even customers at times frequently drink out of the milk dipper. It is dangerous to give such milk to children and invalids, and at best it is not a clean food. Milk drawn from the faucet of a milk-dealer's can, while not exposed to the air so long as dipped milk, also has the disadvantage of not being thoroughly mixed. Some consumers therefore receive less than their share of cream.

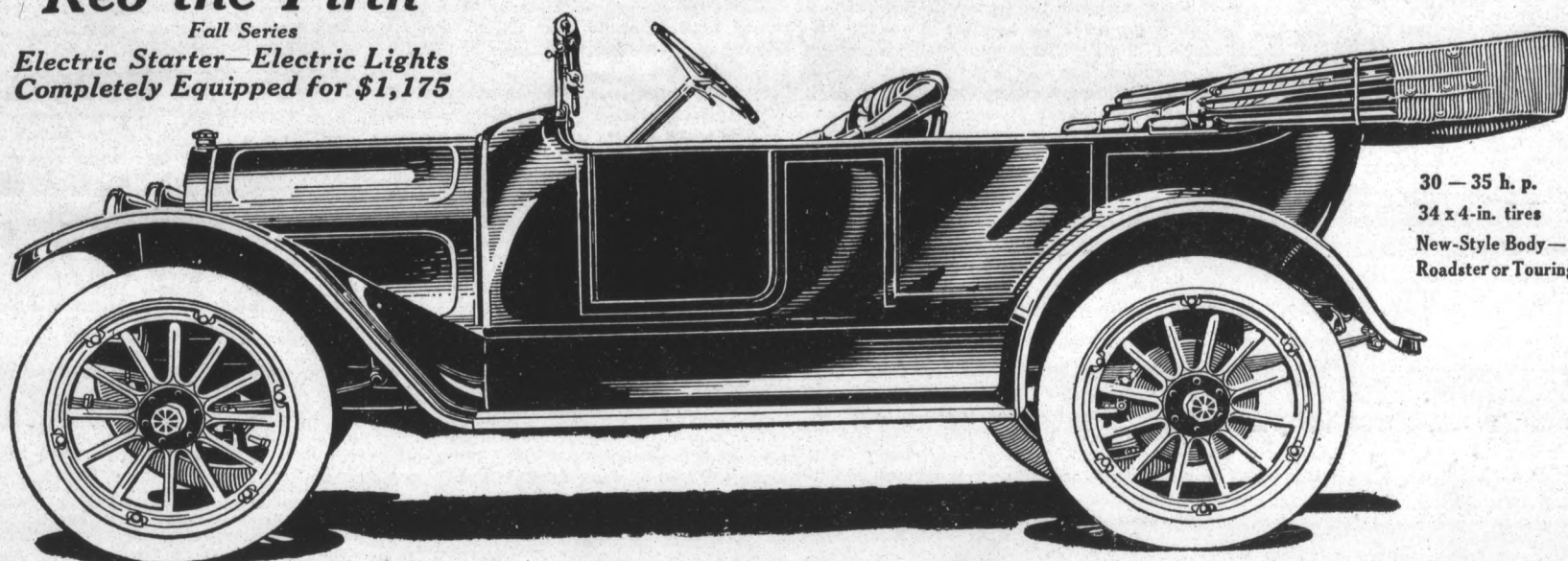
If bottled milk cannot be obtained, try to have the milk delivered personally to some member of the family, and receive it in a scalded covered vessel that has not been exposed to the air of a room or street. Otherwise set out a scalded covered dish or bowl, or a glass preserving jar with a glass top without a rubber band. In no case should an uncovered vessel be used. Milk should be taken into the house immediately on delivery, or if this is impossible, it should be placed in an outside refrigerator, or the outside door of the refrigerator in the house, if its ice-box opens to the outside. Cleanliness in the handling of milk is as necessary in the home as in the production of milk on the farm. Milk must be kept at low temperature at all times, to prevent growth of bacteria and subsequent souring. It should be kept in closed vessels as far as possible. The consumer should insist on having bottled milk delivered, and if this is impossible should at least see that the milk after delivery suffers no additional contamination.

Although the pasture may appear capable of satisfying the maximum demands of the cows, yet it may not be doing this and, if not, money is being lost.

Reo the Fifth

Fall Series

Electric Starter—Electric Lights
Completely Equipped for \$1,175



30—35 h. p.
34 x 4-in. tires
New-Style Body—
Roadster or Touring Car

Now \$220 Less

Last season's model of Reo the Fifth, with electric starter and complete equipment, sold at \$1,395. And the year was our record year, exceeding our previous year by 25 per cent.

Now we have added many improvements. And, without sacrificing one feature, without skimping one part, we are quoting the car at \$1,175 complete.

This is how we have done it:

The best electric starters cost much less this year. Our chassis is standardized. Our capacity is largely increased.

All the special machinery, jigs and tools for this chassis have been charged against previous output. These items from now on are wiped out from our cost.

So we offer you now the best car that R. E. Olds ever built. We offer the handsomest car that ever went from this factory. And we offer a price \$220 less than a car of this class ever sold for.

This is the greatest innovation which has ever been offered in the history of the Reo concern.

Reo the Fifth with Many Improvements

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Now comes this car with a new-style body—a low, rakish, low-hung body. A wider body. A cowl-front body with a gondola back—the very latest mode.

The instrument board, with all instruments set flush, is brought within reach of the operator.

The windshield is ventilating, clear vision and rain vision. The searchlights have dimming attachment. The upholstery is deep and soft.

There's a new-style tire carrier on the back, which also holds the tail light and the number tag in a manner which complies with all laws.

We add an electric horn.

The transmission has been changed in ways which accomplish utter silence.

Electric Starter Electric Lights

Now Reo the Fifth comes completely equipped with all that modern cars require. No extras are needed.

Electric self-starter—electric lights. Speedometer—windshield—electric horn.

Mohair top, curtains and envelope. Extra demountable rim.

Tools, robe rail, etc.

Our Exclusive One-Rod Control

This car alone has our center rod control. A rod which connects directly with the gears. No outside levers, no connecting links.

The gear shifting is done by moving this rod only three inches in each of four directions. And the rod isn't in the way.

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Every Feature Retained

We still retain every costly feature which made this car distinctive. It is still the best car R. E. Olds can build, after 26 years' experience.

The steel is twice analyzed, so the strength is made certain. Each vital part, at much added cost, is given 50 per cent over-capacity.

The gears are tested for 75,000 pounds per tooth—the springs for 100,000 vibrations.

The car is over-tired. We use 15 roller bearings and 190 drop forgings. The carburetor is doubly-heated.

All the extremes, all the costly precautions which made this car famous are here. All the tests and inspections—all the margins of safety—all the utter exactness. This car is built for low cost of upkeep, and to run year after year as well as it runs when new.

Now with all these unique features, with all these improvements, we quote you a saving of \$220. That's the result of three years' concentration on a single model. Such a car at such a price would be otherwise impossible.

Look where you will, you will not find a car you would think of preferring.

We have dealers in a thousand towns. Go see this new model and ask when you can get one. Also write for our catalog with full specifications, details and comparisons.

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DETROIT, SEPT 6, 1913.

CURRENT COMMENT.

In his address before the House of Governors at Colorado Springs, Colorado, last week, Senator Duncan U. Fletcher, of Florida, Chairman of the American Commission on Agricultural Co-operation, commented upon one phase of agricultural credit which has not been given great prominence in the discussion of this problem in this country. Nearly all of the discussions on this question have been relative to long-time mortgage loans. It appears, however, from Senator Fletcher's statements that personal credit has been made a matter of co-operation in many European countries.

It appears that these co-operative organizations have grown out of a condition which has obtained in foreign countries as well as in the United States where the farmer is dependant for personal credit upon a banking system operated primarily in the interest of merchants and manufacturers which interests are dissimilar to agriculture in their credit requirements. The present requirements of the farmer are very different from those of the other classes of business men mentioned largely because returns from money invested in agricultural enterprises are much slower than returns from other enterprises. They are, however, more certain, which fact should enable farmers to realize upon a great potential credit under a plan whereby such credit could be made much more easily available.

Such a plan has been developed in some European countries and on this phase of co-operative credit Senator Fletcher commented as follows:

"The most highly developed systems of short-time agricultural credit institutions are found in Germany. They are in the form of a pyramid composed of local co-operative credit societies, central societies operating generally over a province or administrative district and a main central society as the apex, at Berlin.

"Every farmer joining a local society assumes liability for its debts. In other words, he signs over his credit to the society and with this collective liability or credit as security the society contracts loans and solicits saving deposits. There may also be a cash capital subscribed or a cash reserve built up to serve as security in addition to the collective liability but it is the liability which forms the chief security. The funds thus secured are loaned by the society to its members. A rate of interest is charged members on such loans sufficiently above the rate paid by the society to creditors so that the margin will cover the expenses of the bank and leave enough over for reserves or other purposes.

"In their operation it is necessary to insure two things, first, that creditors shall be protected in their loans, and second, that members shall be protected against the losses to which their liability subjects them.

"The members are protected by placing every possible safe-guard about the loans to insure their repayment. This is done, first, by admitting to the society only persons of good standing. Then it is pro-

vided that loans shall be made only for productive purposes, the borrower being required to state for what purpose he desires a loan. Further, the territory of operations for each society is limited to an area wherein every member knows every other member and is in position to find out whether the borrower is living up to the promises he has made to the society. The liability assumed by members is depended upon to keep them watchful of the affairs of other borrowers and in a rural community this check is extremely effective. Also, profits are either prohibited or so strictly limited that there is no incentive to speculation as a means to swell the income of a society. The officers of the society are so chosen that one set or board keeps check on the other. The liability of all officers insures their watchfulness. The general management of the affairs of the society are left in the hands of the general assembly of all members.

"No matter what stock membership a member may have he is entitled to only one vote. His stock ownership is generally limited to a small amount. In this way these societies are insured a conservative management and maintain a surveillance over all loans made to members far closer than that maintained by the average commercial bank.

"All such local societies within a certain territory are combined to form a central society. A central bank is established which has, first, a small cash capital subscribed by the local societies, and secondly, the collective liability of its constituent banks as capital. These central banks receive as deposits the surplus funds of local societies and loan them in turn to other local societies. In other words, they equalize supply and demand between the local banks. They are hardly more than paper institutions. Their management is undertaken through officers chosen by the local societies through a representative system.

"The main central banks act as equalizers for the central banks above mentioned. The effect of this pyramiding of the societies is to concentrate all of the borrowing and investing for a system in one big institution. The deposits, of course, are taken in by the local societies and as the societies develop these form the bulk of the system's resources. In Germany, such deposits have at times formed over 90 per cent of all the funds required for loans by an entire system."

Whether or not this method of co-operation is considered feasible in this country after a thorough study of the data obtained by the American Commission in the light of American conditions, this information will be of interest to the readers who care to study this problem in connection with the data secured from European countries.

Taking it for granted that every Michigan Farmer reader who can arrange to do so is

planning to attend the State Fair, a word regarding a systematic study of the exhibits might not be out of place. Of course, every farmer is interested more particularly along some certain line and in so far as that line is concerned no suggestions are needed. If he is a stock breeder or feeder he will be primarily interested in the live stock exhibits and will study them closely and carefully. If he is a fruit grower then the horticultural exhibits will be the great attraction and the first to be visited.

But there is one department at least of the exhibits in which all have a common interest. All have use for farm machinery and farm equipment and it will pay every farmer, no matter what particular line he may be interested in as a specialty, to study this department of the State Fair exhibits closely in order to become better acquainted with the latest improvements which are being made in both machinery and equipment for operating the up-to-date farm. There is also need for the live stock breeder or feeder to study the productions of other departments because they are of great, even if of secondary importance to the greatest success of his business and the same thing is true of the man who follows any other special line of production.

There are also numerous educational features which no fair patron should miss, to the end that this greatest of Michigan's agricultural expositions may fulfill its purpose of being of the highest possible educational value to its patrons. The numerous entertainment features will prove valuable by way of diversion and in themselves are well worth while, but by comparison they are of passing rather than cumulative value and should be utilized to fill in the time of the fair vis-

itor rather than to divert his attention from educational exhibits.

There is no better place to obtain up-to-date information on the best in agricultural products and manufactures than at the Michigan State Fair, for which reason every Michigan farmer who can possibly do so, should plan to attend between September 15 and 20, in order to receive the benefits which are his for the grasping.

The American Road Congress.

The third American Road Congress has been called to meet in Detroit from September 29 to October 4. The meeting is to be held under the auspices of the American Highway Association, the American Automobile Association and the Michigan State Good Roads Association, and will be participated in by nearly 30 organizations having for their object the betterment of the highways, many of them representing the people or highway officials of the various states. In the official call for the meeting attention is directed to the fact that the people of the country are now expending something like \$200,000,000 annually on the public highways, "a large percentage of which, by reason of lack of system, ignorance of proper methods, and wasteful management, is not accomplishing results at all commensurate with the outlay," as well as to the fact that the increased use of the motor vehicle has brought new problems for solution, hence the need of a co-ordination of effort which can best be brought about by an exchange of knowledge and experience, for which purpose the congress has been called. The subjects to be considered at the congress are broad, covering the whole range of highway problems, including road legislation, both national and state; the administration of public roads throughout America, including states, counties and townships; the problems of construction and maintenance; the financial questions concerned, etc., etc.

The feature of the week's program which will be of greatest interest to Michigan Farmer readers is Michigan Day, which will be Friday, October 3. On that day addresses will be delivered by Governor Ferris; Senator Townsend, who will speak on "National Legislation;" Jesse Taylor, President Ohio Good Roads Federation, whose subject will be "Good Road's Legislation and How to Get it;" F. F. Rogers, State Highway Commissioner, who will give a talk on "Concrete Roads;" William Bryant, Chairman Good Roads Association of Kalamazoo County, who will speak on "Prison Labor on the Roads of Michigan;" Frank N. Sparks, of Grand Rapids, who will tell about the "Roads of Kent County and Western Michigan," and Mr. Frank Hamilton, who will represent the West Michigan Pike Association. These addresses will be followed by five minute talks and will make up a program which will be of undoubted value to Michigan people who attend and particularly to highway officers of the various municipalities of the state.

Maintenance of the Highways.

The agitation for government aid in road building will perhaps have one highly beneficial effect if no other, and that is in creating a greater interest in maintaining good roads after they are once constructed. At the present time the office of Public Roads of the U. S. Department of Agriculture is trying to draw public attention to the fact that maintenance and effective repairs are of equal importance with the actual improvement of the highways and that the investment of money for new roads does not become real economy until provision is made for keeping these roads in proper condition after they have been built.

In the scheme proposed by the joint committee of Congress appointed to investigate the proposition of government aid in road building, the matter of maintenance is given the importance which it merits. It is quite probable that the adoption of the county road system in many Michigan counties will have a beneficial effect in the same direction, it being noticeable that the permanent roads in counties having adopted the county road system are better cared for than is the case in many counties where that system has not yet been adopted. A stretch of otherwise good road is often spoiled by bad holes which a very small expenditure for maintenance would keep filled, or ruts form in a time when the roads are softened which at a trifling expenditure could be kept smoothed off with a King drag.

Under the county system these jobs are more often done at a seasonable time be-

cause there are in the aggregate more of them for the same man to oversee and he makes a business of seeing that they are done. There is, however, no reason why under the township system they could not be as well done and the highway commissioner who makes it his business to see that they are done should be kept on the job, while the one who does not should be retired to private life.

HAPPENINGS OF THE WEEK.

National.
The Jossman State Bank of Clarkston, Mich., was closed last week and an examination showed a shortage of approximately \$150,000, which funds the cashier, Ralph Jossman, has confessed to using illegally to bolster up unfortunate investments. The cashier has been charged with embezzlement.

A national convention of Spanish American war veterans is being held in Buffalo this week. The attendance is estimated at 6,000 or more. A feature of the encampment will be what is said to be the largest American flag ever made, which will be carried in the grand review. It is 120 feet long by 20 feet wide and is said to have a stitch for every man serving in the army, navy and marines during the Spanish-American war.

Judge Murphy, of Detroit, has returned from a visit to the copper strike district of Michigan, where he conducted an investigation as a special representative of the governor to determine actual conditions. After receiving Judge Murphy's report Governor Ferris issued a statement in which he declared that the men have real grievances. By this statement, however, he did not care to be understood as taking the position that they were right in all their contentions, but that he believed that they were right in some of the things they ask, which fact makes the position of the operators seem "arrogant and unfair." He states emphatically that so long as there seems to be need of protection of life and property troops will be kept in the strike region. There have been revived rumors of a possible special session of the Legislature should the situation develop more serious aspects.

Wm. J. McDonald was awarded a seat in Congress, representing the twelfth district, in his contest following the official election awarding the seat to former congressman, H. Olin Young. Mr. MacDonald was a progressive candidate and lost the election due to an error in the printing of the ballots in one county. Every Michigan member voted to seat Mr. MacDonald, with the exception of one member who did not vote.

Foreign.
Following the reading of President Wilson's message to Congress regarding the Mexican situation, consular agents of Mexico are instructed to warn Americans to flee Mexico. Recent advices are to the effect that President Huerta is weakening in his position and that he would yet accede to the conditions of mediation communicated to him by Special Ambassador Lind, who is still in Mexico, although he has left the capital. In his message to Congress President Wilson announced the administration's policy with regard to Mexico, which briefly summarized, is as follows: No armed intervention, strict neutrality "forbidding the exportation of arms or munitions of war of any kind from the United States to any part of the Republic of Mexico." Under no circumstances to be the partisans of either party in the contest that now distracts Mexico or constitute ourselves "the virtual umpire between them." As measures of protection to urge all Americans to leave Mexico at once and assist them to get away in every way possible. To let everyone in Mexico who assumes to exercise authority know that this "government shall vigilantly watch the fortunes of those Americans who cannot get away and shall hold those responsible for their sufferings and losses to a definite reckoning." The negotiations for friendly mediation may be resumed at any time. What is desired by the administration is an early and free election in which the real views of the Mexican people may have opportunity for expression.

CROP AND MARKET NOTES.

Arenac Co., Sept. 1.—The month of August has been good for growing crops. The hay crop was very light in this county. The oat crop had rather short straw but is turning out quite well. The potato crop is quite a fair stand but is considerably hurt by blight. To what extent the damage will reach cannot be estimated at this time. The corn crop is extra good and with a few more fine days, most of it will be ready to cut. The bean crop is a fair stand in most places. They are hurt some in low places by the wet and some pieces show considerable blight, which will undoubtedly affect the yield to quite an extent. Wheat, 80c; rye, 58c; barley, \$1 per cwt; oats, 35c; butter-fat, 26c per lb.

Emmet Co., Aug. 28.—Light rainfall has been the rule for the month; too little for the best growth of farm crops, although where intensive cultivation has been given, corn and potatoes have made a satisfactory growth. It has been a good time in which to demonstrate the usefulness of the dust mulch. Grain crops above the average and saved in fine condition. A little too dry and hot for buckwheat yet, but this grain appears to be filling quite well.

Washtenaw Co., Aug. 26.—The weather still continues dry and plowing is very difficult. Pastures are so dry they afford but little feed, and dairy cattle are receiving generous amounts of feed where they maintain a profitable flow of milk. There is sure to be a long feeding season with high priced hay and grain. Early potatoes are being dug and marketed at (Continued on page 205).

Magazine Section

LITERATURE
POETRY
HISTORY and
INFORMATION

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

The FARM BOY
and GIRL
SCIENTIFIC and
MECHANICAL

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

How Perry Saved the Northwest. His Decisive Battle on Lake Erie.

By JAMES COOKE MILLS.

OUT in Lake Erie, almost beyond sight of Ohio's green hills and sunny shores, there rises a lofty memorial structure, the most imposing ever erected in this country to valor and heroism. To the memory of that noble patriot, Oliver Hazard Perry, who, one hundred years ago, by one decisive blow saved the vast territory of the northwest to the United States, will this stately granite shaft lift its huge lantern 347 feet above the surface of the lake. Aided by the national government, the patriotic people of the middle west and

they had made their little shipyard, and from green timber and newly-felled trees they were constructing three small gunboats, the noise of the hammer and saw resounding from daylight to dark.

But he was amazed to find that not a gun had been provided for their armament, not a step had been taken for their protection while still on the stocks; nor had rope or canvas been sent for the sails and rigging. The supervising power of the young commander was at once exerted, and with characteristic energy he took up these matters one by one.

creating of a squadron of fighting ships in this remote and thinly peopled region. Never were ships of war built under such disadvantages. The white oak, chestnut, and pine were cut on the spot, and many a piece of timber which was put into the frame of the gun brigs late in the day, had been part of a standing tree that morning. Nothing in the way of iron, guns, sailcloth, or cordage, necessary to the equipment of ships, could be procured within a distance of five hundred miles, and had to be transported through a half-settled country destitute of good roads and affording but difficult water communication. The iron needed for braces, gun mounts and pivots, chains, and for other uses in ship construction had to be gathered in scraps from shops, warehouses and stores, and was in every conceivable shape, from the tires of an old wagon to the rusty and worn-out hinge of a barn door. A thousand pounds of such scraps were finally secured at Buffalo and welded together for heavy work. To add to the difficulties, instead of five blacksmiths, as had been ordered from Philadelphia, only two came, and one was only a striker to the other.

But under the cheering influence of Perry the work proceeded with harmonious diligence. From the fact that he was the well-spring of confidence, he turned everything to good account. His ability to plan, to supervise the work, to inspire his men with patriotic zeal for their just cause, and carry on his operations to a successful issue, was as remarkable as it was of value to his country. Early in May the work on the gunboats was so far advanced that they were launched into the waters of the creek and fully equipped for service. At this time the two gun brigs were being rapidly planked up with oak, while the decks were being laid with pine. These vessels were stoutly built from the same plans, and were one hundred and forty-one feet in greatest length, thirty-two feet beam, and of four hundred and eighty tons register. They were designed to carry an armament of twenty guns each, ten arranged on a broadside, and



Commodore Oliver Hazard Perry.

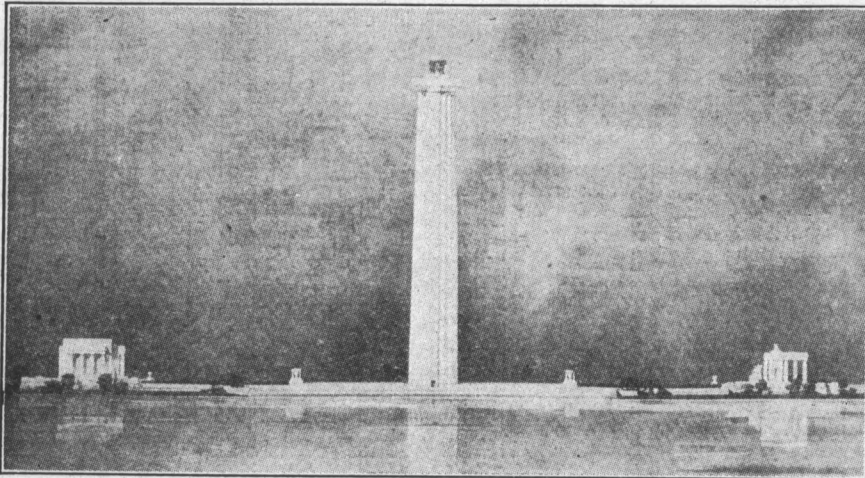
This portrait of Commodore Perry is from the engraving in the collection of the late Jay Cooke, patriotic financier of the Civil war, which has hung for almost fifty years in the "Castle," his summer home on Gibraltar Rock, Put-in-Bay, Lake Erie.

were identical in equipment and sailing power. At sunset on the twenty-third of May they were ready for launching, and the next morning were allowed to slip into their natural element, while the loud shouts of the militiamen, workmen, and the assembled villagers "made the welkin ring." The first of these brigs was named the "Lawrence," after the lamented hero of the Chesapeake, and was designated as Perry's flagship; the other brig was named the "Niagara," and placed under the command of Commander J. D. Elliott, who had won applause the year before on the upper Niagara.

Having surmounted more difficulties in recruiting his crews and in getting his heavier ships over the bar at the mouth of the harbor, Perry at length sailed from Erie with his full squadron, consisting of ten sail. It was the twelfth of August, and the group of islands which Nature has so lavishly distributed near the head of the lake was his rendezvous. In the landlocked harbor of Put-in-Bay he found a safe and convenient anchorage for his fleet, where he could co-operate with General Harrison and the Northwestern army in the contemplated invasion of Canada. The enemy's squadron, however, which it was believed consisted of five heavy and well-armed ships, kept far from sight under the frowning guns of the fortress of Malden. Captain Barclay, its commander-in-chief, was evidently waiting for the completion of his new and heavier ship, the Detroit, which would give him a force of considerable superiority over the Americans.

At sunrise on the tenth of September the six sail of the British squadron were descried from the masthead of the Lawrence, bearing down under easy sail from the northwest. The fact was at once reported to Commander Perry, to whom, though still languishing from a wasting attack of fever, the news was as welcome as the bidding of the most important duty of his life. His long-looked-for opportunity "to meet the enemies of his country" at last had come to him. At seven o'clock all the vessels of the British fleet could be plainly seen from the deck, and he ordered the signal made, "under way to get." On the various vessels of the fleet all was now bustle and activity. On some, anchors were being laboriously weighed; on others, sails were being bent to the lake winds, while on all, powder horns and balls were being laid out and decks cleared for action, the shrill piping of boatswain's whistles, meanwhile, resounding through the fleet. The time had now come for decisive action—a momentous move in the war which should decide the supremacy of the lake.

Soon the entire fleet was under sail,



The Perry Memorial Column now being Erected at Put-in-Bay, Ohio.

of Rhode Island and Kentucky are reviving the memory of heroic deeds and sacrifices of a past age, and proclaiming to the world the efficacy of a century of peace secured thereby.

The conditions along the western frontier early in the war of 1812 were most discomfiting. A sanguinary conflict had been raging for months, and was characterized by defeat, disaster, and disgrace. The inglorious surrender of the fortress of Detroit threw open the whole extended frontier to the stroke of the tomahawk, and smote the nation with dismay. The heartrending tragedy of the River Raisin and other doomed localities followed; deeds of unutterable horror were enacted, while the authority and protection of the United States almost ceased within its borders. In view of all this the creation of an effective fleet, the timber for which was growing in the wilderness, was ordered by the government for purposes of protection. The command of the lakes was indispensable to the recovery of the northwest. The crisis demanded vigorous action, combined with valor and talent to direct it.

Such were the scenes along the lake shores, and such were the conditions of warfare, when Oliver Hazard Perry, then a master-commandant in the navy of the United States, was designated to build and afterward to command the squadron on Lake Erie. His fighting spirit was aroused by the unjust pretensions of England, and the horrors of savage warfare, and he had sought this active command which offered the prospect of "meeting the enemies of his country." He therefore set out from Newport on the twenty-second of February, 1813, with a company of one hundred and fifty selected men and officers, for the bleak shores of Lake Erie. At Presque Isle, (Erie), where he arrived on the evening of the twenty-seventh of March, he found a few frontiersmen in the service of his country, and a number of carpenters and shipbuilders engaged in forming the nucleus of his fleet. Out of the primitive forest near the mouth of Cascade Creek

That very night he organized a guard of the villagers of Erie for the protection of the vessels, and before going to rest he wrote the navy-agent at Pittsburgh to hurry on the company of fifty ship carpenters, which for a month had been on the way from Philadelphia. The following morning he despatched an officer to Buffalo to bring on forty seamen from the dockyard there, also some muskets and two twelve-pounders.

The want of these necessities, and the distance from which they had to be supplied, convey but a faint idea of the arduous nature of Perry's undertaking—the



A Great Artist's Conception of Commodore Perry's Daring Change of Flagships. Probably no historic work of art is more familiar to the American people than "Perry's Victory on Lake Erie," by William Henry Powell. This painting was executed for the state of Ohio in 1863, at a cost of \$10,000, and since has hung in the capitol at Columbus. It depicts the immortal Perry, brave and confident, giving the final directions to the remnants of the crew of the battered Lawrence while pushing off in his hazardous passage to the uninjured Niagara, to which he points. His little brother, James Alexander Perry, is imploring him to sit down and not expose himself thus recklessly to the musket fire of the enemy. The work was reproduced on a larger canvas in 1873 for the national government, and this painting now hangs in the senate wing of the capitol at Washington.



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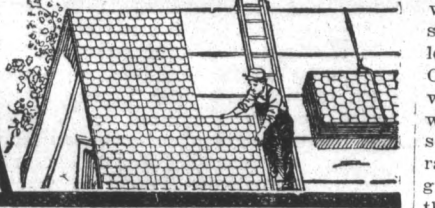
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beating out of the harbor against a light adverse breeze from the southwest. Much time was lost in the early manoeuvres to obtain the windward position of the enemy, or the weather-gage as it is commonly called. This conferred the power of initiative and compelled the fleet to windward, unless very skillfully handled, to await attack and accept the distance chosen by the opponent. About ten o'clock, despairing of effecting this position with the failing breeze, Perry resolved to wear ship and run to leeward. But Nature at that moment came to his aid, in alliance with his courage and determination, for the wind suddenly shifted to the southeast. Under the freshening breezes from this favorable quarter, the fleet quickly bore away to the windward of the islands to the westward and, with all sails set, stood off in the direction of the enemy.

Seldom, if ever, has the scene of a naval engagement been laid amid more beautiful surroundings, or to which the approach was so quiet and peaceful. Scarcely a ripple stirred the surface of the waters. The dark green and densely wooded shores of the islands scattered so lavishly over their surface, were just slightly tinted with the hues of autumn, while their deep shadows were brilliantly reflected in the smooth lake. Myriads of birds sang and twittered in the tree-tops and flew in the air, squirrels chattered in the woods, and a great variety of water fowl filled the marshy spots along the water's edge. From the lofty mastheads the islands looked like great bouquets of tinted green placed on an immense mirror. But the breeze which had promised so much gradually died away, or came in fitful puffs, and the vessels of the fleet, with their white sails stretched aloft, scarcely moved on the quiet surface of the lake.

Meanwhile the enemy, perceiving that the weather-gage was lost to them, hove to in line of battle on the port tack, heading to the south and west. Their situation then was about nine miles west of Put-in-Bay, and about the same distance from the mainland. Their vessels were newly painted and in perfect condition for the conflict; and, as they hove to in close order, gayly bedecked with flags and their red ensigns gently unfolding to the breeze, with the noon-day sun shining on their broadsides, they presented a very gallant appearance. The ship Detroit was particularly noticeable for the dazzling whiteness of her canvas, the tautness of her rigging, and the splendid style in which she was handled. As the American fleet bore down to engage them, with the wind on the port quarter, Commander Perry discovered that they had formed their line with the Chippeway, bearing one long eighteen-pounder on a pivot, in the lead. The big new ship, the Detroit, was second in line, followed in order by the Hunter, Queen Charlotte, Lady Prevost, and the Little Belt. This well ordered line of battle necessitated a remodeling of his own line, to conform to his plan of attack, and he signaled the Niagara, at the head of his line, to drop back and take a position between the Caledonia and the schooners, to attack the Queen Charlotte, her designated adversary. This change was required by the plan previously adopted, and the movement was made promptly and without confusion.

By this disposition of the Niagara, the Ariel and the Scorpion were now in the lead; and the former Perry placed on his weather bow where, having no bulwarks, she might be partially under cover. The long guns of these schooners and the Caledonia supplied, in a measure, the want of long gun power of the Lawrence which was now between them, while standing down outside the carronade range, but still within range of the long guns of the enemy. The Caledonia and the schooners in the rear gave a like support to the Niagara. This was a very clever arrangement, since the British fleet had a preponderance of long guns which gave them, in action at a distance a decided advantage, but in close action the weight of metal fired in a broadside greatly favored the Americans.

At a quarter to twelve the battle began. The first shot was fired from the enemy's flagship, aimed at the Lawrence, which had approached within a mile and a half of the head of their line. The shot fell short but it was evident that Barclay intended to conduct the fight, if possible, at a distance, which was his wisest plan. A second shot, five minutes later, reached its intended mark, Perry's flagship, and passed through both bulwarks. The advantage at that moment lay altogether with the British. The

Lawrence as yet reached only to the third vessel, the brig Hunter, in their line, and was a mile or more to windward. The larger vessels of his fleet followed after, but the schooners, being dull sailers, had fallen back until the sternmost was more than a mile behind the flagship and well beyond the range of effective fire with their long guns.

Despite the disadvantage of his position, Perry still bore down in gallant style, receiving the fire from the long guns of the enemy, but retaining his own fire. At five minutes before twelve he opened his fire by a well-placed shot from the Scorpion, aimed and fired by her commander, Stephen Champlin, which crashed through the rigging of the Detroit. Soon after he opened with his carronades, but found that they did little damage to the thick sides of his opponent. From the beginning the fire of the British ships seemed concentrated on the Lawrence, and their heaviest shots blazed incessantly upon her. The Detroit, with her long guns, hulled the flagship through and through, planted shot after shot in her masts and frame, and riddled her sails. It was clearly Barclay's plan to destroy the flagship and lay low her commander early in the engagement, and thus throw the fleet into confusion. For here he believed was the bone and muscle, and here he knew was the soul and spirit of the battle.

Perry at length reached a position where every carronade and every musket shot reached its mark. There he luffed up parallel to the Detroit, and poured upon her a swift, continuous, and effective fire. Though he had suffered from loss of men and injury to his rigging, the good effect of his discipline was apparent, as the guns were rapidly and skillfully served. The flagships, meanwhile, drifted closer together until they were scarcely three hundred feet apart, and musket fire from both became very destructive of life.

At half-past twelve, Captain Finnis, who commanded the Queen Charlotte, perceiving that the Niagara kept so far to windward that he could neither reach her with his carronades nor run up against the wind and lay her alongside, packed on all sail and ran down to the aid of the Detroit. He soon bore up with the Lawrence and the Caledonia, by which manoeuvre Commander Perry, in the Lawrence, aided only by the gunboats on his weather bow and the Caledonia, had to contend in close action with more than twice his force. For more than two hours he bore the brunt of the battle, with the batteries of the Detroit, the Queen Charlotte and the Hunter, discharging their broadsides upon him. It was the constant hail of iron and lead from the muzzles of forty-four guns, with all the marines at half-musket shot, while his total armament bearing on the enemy was only nineteen guns. Yet throughout the unequal conflict, the heroic Perry remained unagitated, unshaken, and invincible. He had no fear but for the safety and honor of his country; no ambition but to conquer, or die in her defense. Wrought up to the highest state of mental activity he was superior to every infirmity of mind or body, of passion or will. He was unmoved in the presence of danger and, midst the scenes of agony and death, he maintained a perfect cheerfulness of manner and serenity of judgment.

Under the heavy and destructive fire at close range the men on deck became fewer, while nearly all the guns of the starboard battery, next the enemy, were either dismounted or disabled. Yet, the undaunted Perry continued the fight with unabated serenity, making the best use of his small force and the means at hand. Never was the advantage of discipline and thorough training at the guns better exemplified than in the desperate and effective fire of his flagship. So long as her guns remained mounted and in working order, her fire was kept up with uninterrupted spirit and vigor. Toward the end, however, her rigging was much shot away, and was hanging down on the deck or dragging behind, her spars were badly damaged and falling overboard; her braces and bowlines were cut so that it was impossible to trim the yards and keep the vessel under control; and her sails were torn to pieces and hanging in ribbons. With this condition aloft, on deck the destruction was even more terrible. The bulwarks were beaten in so that the enemy's round shot passed completely through. The shrieks of the wounded and dying, and the crash of timbers shattered by cannon balls and splintered by grape and canister were still heard, but her fire grew fainter and fainter as gun after gun became dis-

GRANDMOTHER FIFTY YEARS AGO.

BY LALIA MITCHELL.

Grandmother sat in the chimney corner, Fifty years ago, Steel bowed glasses to help her vision, Knitting row on row. Cap of linen and kerchief white, Sweet old face with its inner light That always counseled for God and right, Fifty years ago.

Grandmother listened to childish stories, Fifty years ago. Shared our woes, and our dear-won glories, Always seemed to know Just the word she ought to say As we gathered round her at close of day, Patting her cheek and her locks of gray Fifty years ago.

Grandmother read in the big old Bible, Fifty years ago, One plain ring on her wrinkled finger Wedded bans to show. And oh, I wish that my sons might see Her just as she was in my youth to me, A power for God and Eternity Fifty years ago.

mounted and the men dropped to the deck around them. Death finally had the mastery; the carnage was unparalleled in naval warfare.

Of the one hundred and one well and able-bodied men who had gone into the action, more than four-fifths were killed or severely wounded. Twenty-two of the gallant seamen and marines lay dead on the deck, while sixty-one suffered from gun and musket shot wounds. Only Perry himself, his little brother, and sixteen of his brave crew remained unharmed. The deck, in spite of the layer of sand, was slippery with blood, which ran down the sides of the ship. Only one gun was left mounted, to fire which Perry himself assisted. At last even this was bowled over and disabled, every brace and bowline was shot away, and the vessel became unmanageable. Yet, through it all, Perry did not despair, for he could see that the Detroit, upon which he had directed his fiercest fire, was almost disabled. But he did not know that on board the Queen Charlotte the loss was most severe, for Captain Finnis, her commander, had fallen at his post, and the next officer in rank had been struck senseless by a splinter.

From the scene of wreck and ruin, Perry now saw with the swiftness of intuition the new plan which promised to bring victory out of defeat. In the crippled condition of the enemy, if he could get the Niagara into close action, "victory must perch on his banner." So he resolved on the moment to transfer his flag from the tattered Lawrence to her uninjured consort, and directed that his boat, which hung at the stern and, like himself, had escaped the storm of iron hail, should be lowered and manned for this purpose. As Perry went over the port gangway into his boat, with his little brother and seven oarsmen, he pointed to the battle flag still flying at the masthead, as if seconding the admonition of its trumpet words, "Don't give up the ship." But to Yarnall, his next in command, he said, "I leave it to your discretion to strike or not as seems best; but the American flag must not be pulled down over my head today." Unconscious of danger he continued to stand erect in the boat, with his brave oarsmen imploring him not to expose himself thus recklessly. For, as the smoke of battle had rolled away, the enemy observed the small boat leaving the Lawrence, and, quickly penetrating the design, had at once directed a heavy fire of great guns and musketry at it. Yet the unconquered Perry stood unmoved and defiant. Losing for a moment their sense of subordination in realization of his danger, the men threatened to lay on their oars unless he sat down. Thus earnestly entreated, and with his young brother clinging to him, he finally yielded to their wishes, whereupon they at once gave way with a hearty good-will. With all their exertions, however, more than ten minutes passed in that storm of shot and lead before they reached the Niagara, which was then passing the weather or port beam of the Lawrence at a distance of more than half a mile.

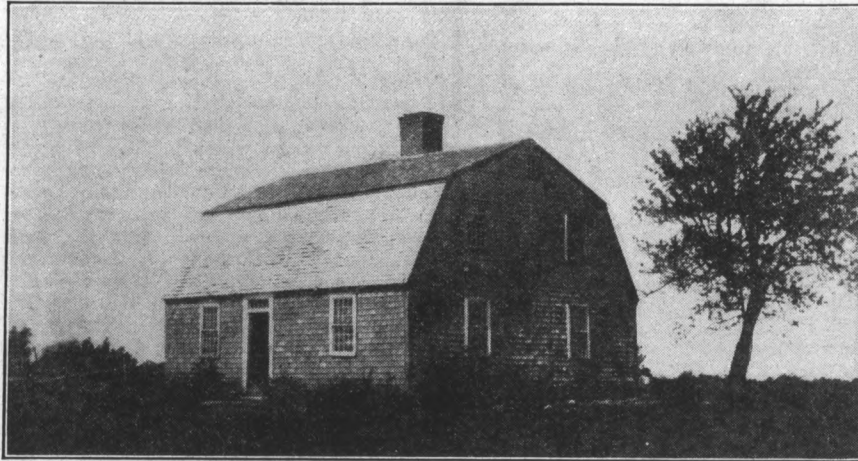
Upon the quarter deck of the Niagara, facing her commander, stood the unconquered Perry, black with the smoke and grime of battle, but unscathed, with not so much as a scratch on his skin, or a hair of his head harmed. The same merciful providence that had watched over him during the desperate battle, had afterward conducted him safely through the storm of leaden hail. With his fortitude unimpaired by the horrors of the last hour, he was radiant with the indomitable purpose of winning the day. As he glanced quickly at the ship's rig-

ging and sails, and at her hale crew that thronged the deck, ready and eager for the conflict, his buoyant nature assured him of a harvest of glory. For he beheld the Niagara very little injured, even "perfectly fresh," with her crew in the best of spirits, and only three men hurt. He quickly rove his pennant to the masthead of the Niagara and hoisted the signal for close action. This order was seen by the whole fleet and was instantly answered by loud and prolonged cheers, condemning the course upon which Elliott was steering, he gave the order to back the main topsail, brail up the main trysail, and put up the helm to run down before the wind. Altering her course eight points, or a whole right angle, with squared yards, set foresail, top-sail and topgallants, she bore down to cut the British line, which lay at a distance of half a mile.

Captain Barclay, in the battered Detroit, seeing the prospect of another encounter with a brig which appeared uninjured and under the command of one who had fought the Lawrence with such skill and obstinacy, was filled with despair. He had other work to do than fight another battle, and in his crippled condition the outlook was anything but promising. Off his port quarter lay the helpless Lawrence, with her flag down, but as yet, in the stress of other duties, not taken possession of. Was he to be deprived of the reward of three hours' hard fighting, after suffering such loss? Was the tide of battle at last to go against him? And to make matters worse, in attempting to veer around, or wear ship, in order that he might bring his starboard battery to bear, he ran the bowsprit and head booms into the mizzen rigging of the Queen Charlotte, and, becoming foul of one another, remained fixed in this precarious position.

At this moment the Niagara, which seven or eight minutes in the freshening breeze had brought within canister-shot distance of the enemy, became for the first time a deadly combatant. With guns double-shotted and crew impatient to do their share of the day's fighting, Perry still bore down utterly regardless of the raking fire to which he was fully exposed. Cutting into the enemy's line so as to place the Chippeway and the Lady Prevost on his left and the Detroit and Queen Charlotte on his right, he shortened sail to check the velocity so as to make sure of his aim. Passing slowly under the bows of the Detroit and across the stern of the Lady Prevost, within half-pistol shot, with cool and fatal accuracy, to the right and to the left, he poured into both vessels, as they lay helplessly exposed, his deadly and destructive broadsides. The loud many-voiced shriek of agony that rose from the Detroit told of the terrible slaughter on

boats from the rear, added their fire with deadly results. At a few minutes after three, or in eight minutes after Perry cut through their line, the British fleet was completely at his mercy, in a state of utter ruin. The Queen Charlotte was the first to give up the contest, one of her officers appearing on the taffrail and waving a white handkerchief bent on a boarding pike. On the Detroit the wreck and carnage was scarcely less complete and pitiable than on the Lawrence. Every brace had been shot away, the mizzen topmast and gaff were down, and the other masts were badly splintered; the hull was shattered and many guns were dismounted. The ship was completely unmanageable, and Lieutenant Inglis, her second in command, hailed the vic-



The Birthplace of Commodore Perry at South Kingston, R. I.

tors to say he surrendered. The brig Hunter, and the schooner Lady Prevost, yielded at the same time. The Chippeway, on the right, and Little Belt on the left, attempted to escape, but were pursued by the Scorpion and Trippe, which soon overhauled them and brought them back.

Now that the flags of the enemy were down, in evidence of submission, there began the proud though painful duty of taking possession of their vessels. The officer sent on board the Detroit found Captain Barclay prostrated in his berth. Early in the action he had been struck by a grape shot in the thigh, and during the terrible broadsides of the Niagara he was again struck in the shoulder. The shot entered below the joint, breaking the blade in pieces and leaving a most painful wound. But before surrendering, the heroic Barclay was again carried on deck to convince himself that further resistance would be unavailing.

About four o'clock, when the most pressing needs of the moment had been supplied, and the wounded and sick given every attention possible, Perry turned

Anglican Church had been read, they were dropped one by one into the lake. At length, when the day's work was done, exhausted nature claimed rest, and the victorious Perry turned into his cot and slept as do the brave, the just, and the pure in heart, as soundly and restfully as a child.

"The mastery of the lakes, the recovery of Detroit and the Far West, the capture of the British army in the peninsula of Upper Canada, were the immediate fruits of his success. The imagination of the American people was taken rines who had fallen in their gallant and desperate defense of the Lawrence, and those of the other vessels, were sewed up in their hammocks with a cannon ball at their feet; and, when the ritual of the

captive by the singular incidents of a battle in which everything seemed to flow from the personal prowess of one man; and everywhere he came the multitude went out to bid him welcome. Washington Irving predicted his ever-increasing fame. Rhode Island cherishes his glory as her own; Erie keeps the tradition that its harbor was his shipyard, its forests the warehouses for the frames of his chief vessels, its houses the hospitable shelter of the wounded among the crews; Cleveland graces her public square with a statue of the hero, wrought of the purest marble, and looking out upon the scene of his glory. Perry's career was short and troubled; he lives in the memory of his countrymen, clothed in perpetual youth, just as he stood when he saw that his efforts were crowned with success, and he could say in his heart, "We have met the enemy and they are ours!"

HILLORY HAWKINS' CRACKLING LOGS.

BY F. LEE ALLEN.

Thump! Bang! Bang-thump! Bang! The noise awoke Mrs. Hillory Hawkins with a start.

"Did you hear that?" she demanded of her husband.

Mr. Hillory Hawkins evidently had not, for he still continued the whistling intake of breath which did him service as a snore.

Bang! Thump! Thump! Bang-de-Bang-Bang! Again the noise came from the floor above.

"Hillory! Hillory! Wake up! Something dreadful is happening. Wake up!"

With the sureness of long practice Mrs. Hawkins thrust a thumb in the vulnerable spot of Hillory's armour of sleep, his fifth rib, and the whistle-puff snore ceased.

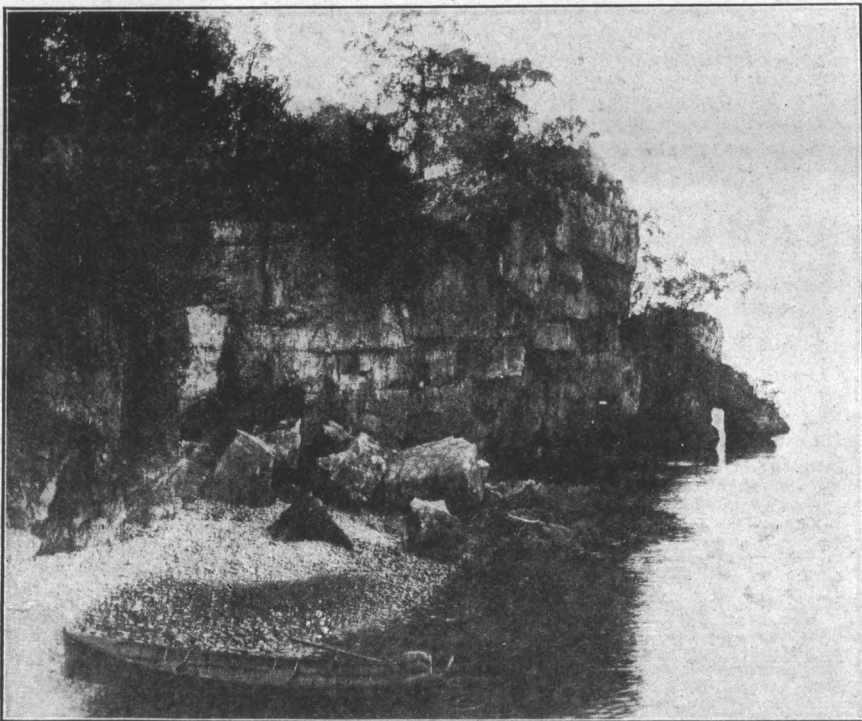
"What's matter?" he demanded as he propped his body to a sitting position.

It was unnecessary for Mrs. Hawkins to explain, for again came the thumpity-thump, bang, thump.

"Hey you!" roared Hillory Hawkins as he flourished his clinched fist in the direction from which the noise had come. "If you don't stop that everlasting racket I'll go up there and break every single, individual, solitary bone in your separate bodies." There were several other warm expressions of disapproval added, which caused Mrs. Hawkins to exclaim: "Hillory! Don't swear Hillory. Suppose someone should hear you?"

"Hear me! Hear me!" exclaimed the angry Hillory. "I hope they hear me. Do you suppose I'm talking at twelve o'clock at night simply to exercise my vocal cords? Do you hear this, you blithering, scorching lunatics?" Hillory raised his voice to a shout, "Shut up! Shut up!"

And the noise stopped—so quickly that Hillory was startled at his success. Then for several minutes he waited, anticipating another outbreak, but as none came



"Perry's Lookout," on Gibraltar Rock, Put-In-Bay, overlooking Lake Erie.

her decks, while on the Lady Prevost the survivors, terrified by the raking fire which they had suffered, fled below the deck.

Having cut through their line with such terrible havoc, the tide of battle was now turned. In a moment the invincible Perry, with victory almost within his grasp, luffed up to take a position athwart the two ships which had now got clear of one another, and continued to pour into them a close and destructive fire. In this close action the gun-

to announce his victory to his country. Searching in his pockets for paper upon which to write, he found only a letter, on the back of which he wrote the laconic message which has immortalized his name. It was addressed to General Harrison in these ringing words:

"Dear General:

We have met the enemy and they are ours. Two ships, two brigs, one schooner and one sloop.

Yours with great respect and esteem,
O. H. PERRY."

When twilight fell, the sailors and ma-

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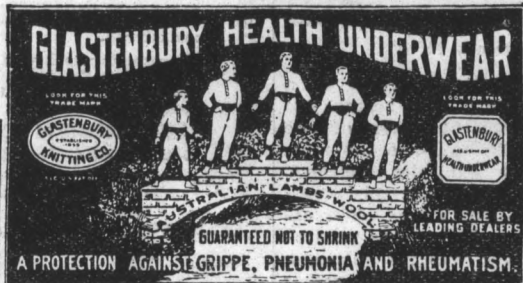
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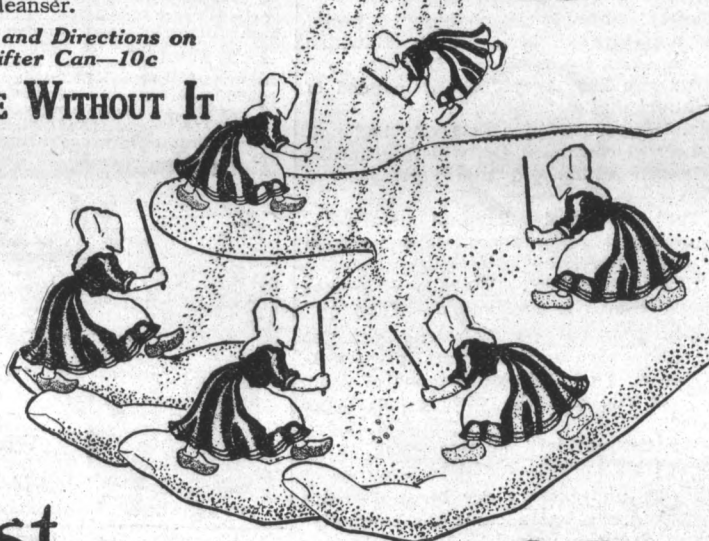
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he at length resumed the whistle-puff snore.

Hawkins awoke with a groan. Breakfast was ten minutes late and, as Hillory aeroplaned for a street car, the groan went with him. None the worse for the wear and tear of a busy day it came home with Hillory that night.

Hillory Hawkins lived in an old-fashioned house that had been remodeled for two tenants. The open fireplaces had been the closing argument in Hillory's signing of the lease for the lower apartment, and it was with thoughts of the cheery blaze and the crackling log and all the rest of the bunk of the open fireplace, that he had scrawled his name.

His enthusiasm had been somewhat dampened that first winter, for the crackling logs had refused to crackle, or to do anything else but smoke, and the chimney had refused to draw, and the cheery blaze had resolved itself into an eye-smarting, smoke producing nuisance.

But the coming winter the logs would crackle, of this he had been assured by the farmer from whom he had bought a supply. Two days ago Hillory had come home to find the logs piled methodically in Mrs. Hawkins' flower bed, which fact Mrs. Hawkins bemoaned, it having been her misfortune to be away from home when the logs arrived—but that was a small matter. There were the crackling logs.

Hillory Hawkins knew the exact measure of a cord of wood, both by eye and rule. He had satisfied himself that the farmer had not cheated him, so it was with a somewhat surprised start that he saw, this particular night, that the pile of logs had dwindled by one-half at least. Ascending the back stairs there was a man, and in the man's arms was a stick of wood. His wood. Well!

"Hey! What you doing with that wood?" Hillory demanded.

Silence. The man still continued to ascend.

"Say. Don't you hear me?" Hillory repeated with stronger emphasis.

Silence continued with no recognition by the man who tolled upward.

Then Hillory, with temper at boiling point, bounded up the stairs and grasped the man by the only available protrusion—his coat-tails. Feeling the tug at his coat, the man turned slowly and regarded Hillory with calm surprise.

"That wood? What you do-do-doing with it?" stuttered Hillory.

Then with an unexpected movement the man tossed the wood from him to the upper floor of the landing and turned swiftly on Hillory, who loosed his grasp on the coat-tails and retreated several steps downward, while before his astonished eyes the man's fingers moved rapidly, and it was borne slowly upon his comprehension that the man was deaf and dumb.

So. Deaf and dumb. Noise wouldn't bother this new neighbor of his. But the wood?

"You old wood stealer you," Hillory exclaimed, made bold by the man's affliction. "You old robber you—"

The man at this juncture thrust a pad and pencil toward Hillory, as much as to say, "Aw, write it old man and save your voice."

Hillory wrote savagely, "What you taking my wood for?"

"It's not your wood, it's mine," the man said via pencil and pad.

"You're a liar," wrote Hillory.

"You're another," courteously replied the man.

That these little pleasantries would have led to a personal encounter, but for the arrival of the two wives, there is no doubt.

There was an interchange of questions and the new tenant's wife took the pad and wrote: "There is some mistake; the wood is ours."

"Look at that," Hillory snorted to his spouse. "They've got the brazen crust to say that wood's theirs. Now what—"

"It is theirs," interrupted Mrs. Hawkins, calmly. "I found out today. The lady was so sorry for having disturbed us. They were late in moving in, and of course, they didn't know. The night was cold and they were cutting a little wood for fuel."

"But," began Hillory. "It's our wood. What'd they want to steal our wood for?"

"It is their wood, Hillory. Our farmer was here today; he was so sorry, but he could not deliver our wood until next week. You know I was not at home when the other wood was delivered and we just took it for granted—"

Since no one but Mrs. Hawkins could hear him, Hillory swore, then took the pad and wrote an apology.

White Raiment.

By JANET T. VAN OSDEL.

A Tale of the Smiling Waters.

It was as we sat on the grassy shores of the Lake of Smiling Waters, watching it in its happy, shining beauty, that reminiscent Aunt Unity pattered up and seated herself beside us. She began as usual: "My! my! the tales those Smiling Waters could tell! I've watched them for sixty years and I know a few of them. But I think Sally McNurty's got the biggest hold on me. You've heard about Sally? No?"

"Sally Tatters the youngsters about took to calling her because she was always so ragged. All Sally had was a hopeless, hard-working father, a no-account mother, and seven brothers and sisters who looked to Sally for whatever mother care they got. It was the seven that loomed large in Sally's life, for the father was away from the hovel the McNurtys called home, from six in the morning until seven at night, seven days in the week. And when he was there he either sat silent in the corner drawing on a blackened clay pipe, or he lay on a dirty pallet in the bedroom. He never had anything to say except on the few occasions when he got drunk; then he was a terror. Of the no-account mother Sally saw even less, for she was all over the country, sometimes away for a couple of nights together, and the less said of her the better. But the poor little seven Sally had always with her. They looked to her for their daily meals, for such cleanings-up as they got and for whatever of joy came into their starved lives.

"If Sally had had the handling of the money that Jim McNurty toiled so faithfully to earn, very likely there wouldn't be this tale to tell, for Sally had on her twelve-year-old body the head of a little woman and she doubtless would have used the mean little fund so that it would have brought some comfort to the hovel and its inmates. But Jim turned over his money regularly to his woman and it was scattered to the winds. Now I know us folks should have taken more interest,

but we were so used to them that we just accepted them as a shiftless family and never dreamed of the longings that might be locked up in those little breasts.

"Sally's little heart did not keep pace with her old head nor her hard-worked body. It was just a little girl's heart, and it longed so for dear, delightful, little-girl things. More than anything else Sally wanted a pair of white slippers and white stockings like those that Ellen DeVore over at the big hotel on the lake wore, and she wanted them in time for the big town picnic. The town picnic was the one social event in the lives of Sally and her brood, for it was a free-for-all. Sally never had a chance to go to invitation affairs. Barefooted and ragged, usually with a baby in her arms and the rest clinging to her wherever they could get hold, Sally came every year to the town picnic and looked on. But this year she had an ambition to go clothed as were other little girls, and especially Ellen DeVore. She begged her mother to buy her white shoes and stockings, but her mother had scoffed at her and gone off to the next town to spend the earnings that the father had just passed over to her.

"Sally's last hope was the clover tops. Two cents a pound is paid for them at the drying factory, and the heads were big that year. So she mustered her brood about her and told them of her need and how they could all help out. Tommy, the baby, was only six months old. He couldn't pull clover heads. But he goosed at Sally and nodded his approval. Two and a quarter was the least she could buy her shoes and stockings for. She had asked the price so many times that every salesbody in the town knew what Sally's question would be as soon as her peaked little face showed in front of the glass door. Two dollars and twenty-five cents meant one hundred and twelve and one-half pounds of clover heads, and it takes some heads to make one pound. Ever pick any? Then you

ing work it is. But, with Sally as their general, the children went to the job with a good will, and every day for can't know what scorching, back-break-hours the six toiled in the sun, plucking clover heads all about these shores. They did it with good measure, too, for they picked one hundred and fifteen pounds, which meant two dollars and thirty cents. The extra five cents was to provide the big treat of the day when they went to the town picnic—a glass of red lemonade to be divided among them. And little Katie told me afterward that they had hoped maybe they could coax the man to give them extra straws so each could have one to suck through. They begged to have the money in small change so as to make it seem more, and Sally put it in an empty tobacco bag of her father's and drew the string up tight. The next day she was to go to the clerk with the kind eyes, who had never scorned her when she had inquired the price, and buy the shoes and stockings.

"But the plans of little girls as well as of mice and men, sometimes carry wrong. It was when Tommy bumped his head against the stove leg as he was creeping about the floor that little Katie begged Sally to let him hold the money bag to make him feel better. And he was so happy with its jolly jingle that he laughed and crowed in glee and they let him hold it while they trooped out to watch a picnic wagon pass by. And when they came back the money was gone! Tommy sat there howling for his plaything. How could he tell them that in his fun he had hurled it into the air and it had fallen through a hole in the floor at the other end of the room? All of their searching was in vain. The bag was only found last spring when the hovel was torn down.

"Sally was heart broken.

"You'd ought to be an angel and then you could have white shoes and stockings without buying," said Katie.

"How do you know?" asked Sally, taking her hands out of the greasy dishwater and staring at Katie with red eyes.

"I heard a lady over at the hotel say so one time. They have all white raiment she said, shining white, their clothes and their wings and everything."

"Perhaps that put the idea into Sally's head, or maybe it was an accident. At any rate, the next day Sally took the lot down to the shores of Smiling Waters. She set the baby carefully in an unused boat, took off her own tattered little garments, even to the soiled strings of ribbons that tied her braids, and put on a faded, little, blue-checked gingham apron. And then she went in bathing. But it was such a distance for a little girl to go! So far out, out, into the Smiling Waters, until they caressed her waist, then her shoulders, then her neck and at last they covered her and took her under with a gurgle of glee.

"The hours went by and the McNurty children still played on the bank. Tommy cooed in the boat when Mrs. McNurty came walking down to the bank. It was the first time she had ever looked up the children of her own accord. The first thing she spied was Sally's pathetic little heap of clothing.

"Where's Sally?" she demanded.

"Out in the lake!" answered the children.

"And some hours later in the lake they found the little body in its tiny, faded gingham apron.

"Anyhow she's in white raiment now," said Katie. "White shoes and stockings and everything else white, and nothing torn or dirty, and she'll have 'em forever 'n' ever!"

"Sally's pale little face wore a happy smile. It was as though she knew she was clad in the beautiful embroidered dress and undergarments and white silk stockings and white slippers of Ellen DeVore. Mrs. DeVore wanted it that way when she heard. 'If we'd only known sooner!' she kept saying. That's what we're always saying when it's too late, when we could know if we'd just take the trouble to instead of being all bound up in ourselves. And then again, maybe Sally's smile was because of the beautiful shining robes that the angels had given her.

"Things have been different with the McNurtys ever since. Sally didn't go after her white raiment in vain. Mrs. McNurty's been more of a mother than I'd ever have believed was in her, and the people here have helped along the children some. That all happened two years ago; the whole family was at the town picnic this year, and when I saw those little 'tikes' all in white shoes and stockings I just burst out crying, but then I got to thinking how happy Sally in her white garments must be to see the little

brood she loved all dressed up as she wanted to be."

BE PREPARED.

BY EARLE W. GAGE.

A great majority of the people make the great mistake of deferring preparation along a certain line, until in the regular course of events, they find themselves face to face with the absolute necessity of possessing certain education or ability. They are then compelled to admit their incompetency to fill the position offered and are obliged to secure the necessary training in a hurried and very unsatisfactory manner. If, indeed, they are granted sufficient time to do this. More frequently, they miss the opportunity which would otherwise be theirs, and the position or promotion goes to someone else who has already prepared and is ready to accept the responsibility.

If you think that the time will ever come when a knowledge of any particular subject or business will be of value to you, now is the proper time to acquire it. You will not be able to take advantage of opportunities that may present themselves in after years unless you are prepared to grapple with them the moment they confront you. When an opportunity arises, it is too late to get ready for it.

One hour per day withdrawn from frivolous pursuits and devoted to study would enable any man of ordinary capacity to master a complete science. One hour per day would make an ignorant man a well informed man in a few years. An hour a day might make all the difference between bare existence and useful happy living, in a few years to come. An hour per day, nay, has made, an unknown man a famous man; a useless man a benefactor to his race. Consider then, the mighty responsibilities of two, four, yes, six hours a day, that are on the average thrown away by young men and women in the restless desire for entertainment and diversion.

Someone has said that Fortune knocks once at every man's door; but Fortune does not go around armed with an axe, breaking down doors in order to reach the objects of her interest. He who has not sufficient interest and enterprise and foresight to open the door must not complain if the fickle goddess passes on and bestows her favors upon more enterprising and deserving applicants.

When acquaintances, who thought he would never be anything but a rail splitter, tried to discourage Abraham Lincoln from getting an education by telling him that he was wasting his time reading books, his reply was, "Perhaps the chance will come; I shall study and be ready for it."

HIS WORTH.

BY H. C. KEGLEY.

His father died and left to him a large and fertile tract of land.

He never learned to work, because he didn't have to lift a hand.

To earn a cent. Oh, he was rich! All of the people envied Jim.

They thought he was made of gold. No girl seemed good enough for him.

He took a fancy to a girl whose family always chose her friends.

She didn't care a snap for him, but—this is where the story ends—

Her folks said: "You must stick to Jim; you simply shan't do otherwise.

For he is young, and he is rich. When you land him you land a prize.

She listened to their words, and she's a most unhappy girl today.

Jim traded 'round and lost his farm.

What gold he had he threw away.

They're living with her parents now, 'cause he had never earned enough

To know the value of his gold, and therefore couldn't keep the stuff.

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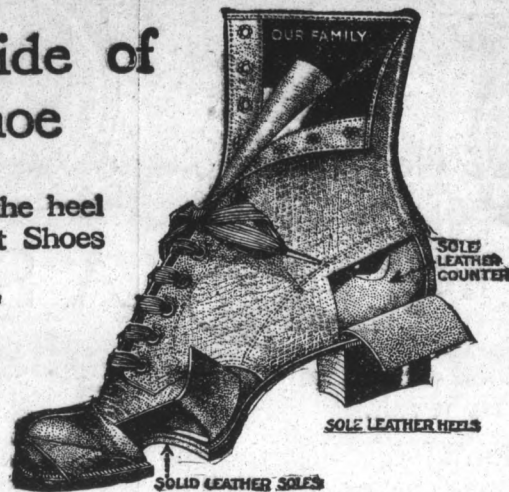
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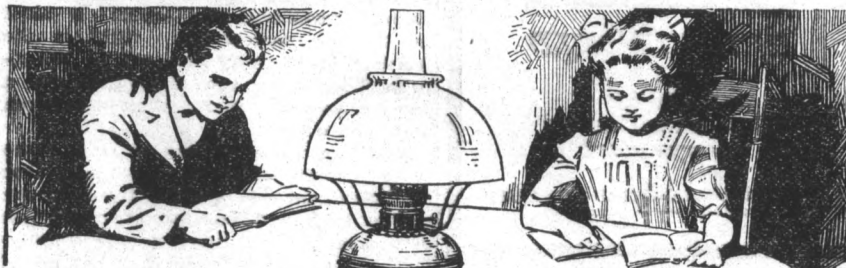
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Woman and Her Needs

At Home and Elsewhere

A Sign Of The Times.

HAS it become the smart thing to be godless? Statisticians tell us that never has there been so great an interest in things religious as at present. Men and women everywhere are seeking the truth in greater numbers than ever in the history of the world, so some authorities tell us.

But on the other hand, are there greater numbers casting off all religious beliefs than ever before? Are our writers and thinkers and the so-called leaders of thought casting off all belief in God and in a future existence? Are the young women in our "first families," the girls who are to be the mothers of tomorrow, coming into the estate of motherhood without belief in God or expectation of immortality?

If we are to judge by the fiction the modern magazines give us, this is so. And the stories our editors set out for us we are solemnly assured are veritable pictures of life. For several years back there has been a marked departure from the old sort of story which seldom failed to acknowledge a lively belief in an overruling Providence which rewarded the good and punished the wicked. Our modern writers have literally made man all and God nothing. Man, in the popular American tale for some time past, has been his own destiny and was all-sufficient for himself. But unbelief in God or a hereafter has not been expressed openly. The whole religious thought has simply been disregarded.

Now, however, writers are becoming bolder. They are putting into the mouths of their characters, their own disbelief in the things that many of us hold most sacred. And curiously enough, it is from the lips of young girls that the words of utter, black disbelief fall.

A woman writer, who was popular a decade ago for her sweet, wholesome child stories, is an example of this sort of writing. She has for a heroine a girl whom we are to suppose is a type of the "smart," educated, wealthy New Yorker, the girl whom the rest of the country is to take as a model of the typical, American twentieth century young woman. She has the girl say to the man to whom she afterwards becomes engaged, "You believe this ends everything?" in the most matter-of-fact-of-course-everyone-with-intelligence-does, manner imaginable. This girl is given us as the best our present system of education has to offer.

If the type were confined to fiction it might not be so bad. Though even there great harm would come because of the silent influence such reading has on forming character. But scattered everywhere we run across young women and young men who profess to regard you as almost imbecile if you express a belief in God or immortality. "Still in the woods," is the way one girl of 19 expressed it, when she discovered that a woman writer actually went to church and prayed.

Irreligion in the young is one of the most lamentable signs of the times. For say what you will about doing right for right's sake and because of one's own self-respect, there are few who consider anything save self, once they get rid of a belief in anything beyond this world. If this is the end of it, make the most of today, becomes the motto. Never mind the other fellow, I must get the most out of this present, for it is all I have.

I would be the last one to defend any creed or dogma. Each man's religion is his own private business, and he should be free to worship as he pleases. But I do claim that we all need a belief in something in order to get the most out of this life and to be the best sort of citizen. To my notion the heathen bowing down to his idols of wood and stone is a more desirable citizen than the university man or woman who rejects all belief in things spiritual. It may be nothing more than a pose with some, there are always feather weights ready

to follow any lead they think "smart." But real or affected, the rejection of religious belief of any sort whatsoever is a tendency of the times much to be regretted.

DEBORAH.

FOR THE TOO THIN WOMAN.

BY ANNA RUTHERFORD.

In spite of the fact that the fashion leaders and the modish dressmakers, in their admiration for the present style of shapeless slimmness, pronounce bones beautiful, no woman really wants to be scrawny. The angular figure is not beautiful and has never been considered so. In all ages the artist's eye has traced curves, not angles, in idealizing feminine beauty. Fortunately, the average woman is wholesomely plump—a goodly proportion of them too much so—and this probably accounts for the desire for slenderness and the making of extreme styles that appeal so to the plump woman's heart and tempt her to resort to injurious dieting and fasting and the more injurious anti-fats.

But in spite of the fact that the average woman carries sufficient flesh and a few too much for fashion, there are always a small minority too lank and lean, not only for fashion but for health.

There is a difference between slenderness and leanness. Every woman wants full cheeks and throat and shapely arms and shoulders. But beauty is not the only thing to be desired. If hollows, angles and protruding bones were the usual accompaniment of health, one might accept them without complaint. As a matter of fact the too-thin woman is a poor example of health usually. Something is at the root of it, wasting vitality or preventing the upbuilding of the body. And every thin woman should look well to her physical condition to find the cause. When there is no positive disease and no decided inherited tendency to leanness then one's manner of living, eating, state of mind, etc., are at fault.

The thin woman must not worry, must not exercise to the point of fatigue. She must learn to minimize her work and avoid doing unnecessary things and taking unnecessary steps. Many a woman wears herself thin in her devotion to household duties, forgetting herself until some remark by friend or acquaintance or her unflattering mirror, reminds her of her own self-neglect. According to the old adage, "Work never kills," but overwork wears pretty badly, especially when the worker is inclined to thinness and is not careful about her diet.

One woman of my acquaintance, whose weight was fifty pounds or more below normal and whose hobby was her house, ate freely of cheese, fried eggs and grid-dle cakes for breakfast, and pie or cake for luncheon, if anything, there was no regularity whatever about the mid-day meal, and, of course, stomach trouble was her complaint and her excuse for leanness. Another seldom took any rest, up early and late doing all kinds of things, necessary and otherwise, visiting and entertaining. This woman was very charitable and during spare moments made fancy work for friends, never finding time for a daytime nap. It is needless to say her weight was that of the traditional hag and her countenance pale and haggard.

If one does not wish to grow thin the expenditure of energy must not be greater than one's ability to repair. If one is below normal weight and wishes to gain flesh the daily repair must necessarily exceed the waste. And as every exertion of body or mind causes waste the thin woman should regulate her life and proportion her work and exercise according to her strength and ability to repair.

The thin woman should know how to choose her food and eat those articles that are easily digested and contain the largest amount of fat and flesh-making

material. Meat, milk, cream, eggs and nuts take the lead in the above named qualities, and thin people should take all they can well digest of these flesh-forming foods. Eating more than one can digest is the cause of headaches, frequently, constipation and various other symptoms of ill-health.

Milk sometimes causes a full bloated feeling. But this can be avoided by sipping it or taking it through a straw, warm, not hot. Ten or 15 minutes before meals is the best time to take it, never with meals. A pint or more, warm, just from the milking, mornings and evenings will aid wonderfully in putting flesh on the thin body. The last drippings are richer and should be drunk if available.

Eggs are more nutritious and digestible raw, either swallowed direct from the shell or beaten with a pint of salt or a little sugar. One can learn to take a half dozen or more a day this way.

All the cereals are good. Most fruit and vegetables are of especial value as they contain the natural salts which perform an important part in maintaining health. Tender green salads, when taken with olive oil, nut oil or butter, help to fatten. Beans, peas, nuts and dates are highly nutritious.

All food should be well masticated and another important thing to remember is, do not partake of too great a variety at one time.

Avoid pickles, acids, tea, coffee, brined, smoked and canned goods, and drink plenty of water between meals.

Following these suggestions, if one does not gain a few pounds in as many weeks, then probably the best thing to do would be to consult a specialist.

PREPARING FRUIT FOR WINTER.

There are many housewives who dread the canning and preserving season. Why not simplify the process and learn to do it as easily as possible?

One lady, famous for her success in putting up fruit so that it tastes fresh and almost as good as when it is first picked, says that she does not let her fruit remain on the range after coming to the boiling point. Many people cook their sauce too much. It loses its fine flavor and becomes almost tasteless.

Cherries that are overdone are tough. The same is true of other kinds of sauce. Tomatoes that go beyond the boiling point fall into a shapeless mass and are insipid when eaten.

In making preserves avoid getting them so sweet that they are soggy and sickish, but have enough sugar so they will not ferment or mold.

It is difficult to make jam or marmalade without scorching or burning it unless one understands how. If a pint of hot ashes containing some live coals are dusted on the cover of the range under the saucepan preserves, the fruit will cook down nicely. It will scarcely thicken on the bottom and will only seldom need to be stirred.

Pickled blackberries only need to be heated through to keep in the vinegar. For 12 quarts of berries, take four quarts of good cider vinegar, pour it in an aluminum kettle and set it on the range. When it comes to the boiling point add five pounds of sugar and two cotton bags the size of a black walnut, filled respectively with sticks of cinnamon and cloves. When this syrup comes to a boil, pour it over the blackberries, then heat the mixture on the range. As soon as it boils put it in a stone jar. Seal it and put it in the fruit cellar for winter.

To can pickled beets, take one-half bushel, wash them clean in several waters, immerse in boiling hot water for one hour or until they are done. Skim them out into cold water and dress them. Slice them up into a syrup of four quarts of vinegar, one cup of sugar, two quarts of water. Have five two quart jars ready, together with the rings and covers. As soon as the beets come to a boil pack them neatly in the cans. Fill the jars with the hot syrup, screw down the covers and set them away to cool. They are delicious.

The Ideal Kitchen.

AN old-fashioned white farmhouse at the end of a long tree-bordered lane attracted my attention as I was being driven through the country recently. It was so remote from noise and dust, and looked so peaceful nestled in its shelter of spreading trees it seemed to me, fresh from the hustle and dirt and noise and confusion of a city, as the ideal sort of home.

"That's just the sort of a home I want," I said enthusiastically. "You're away off from everybody there; you don't get the dust from the road, and you are so far away peddlers and agents will pass you by rather than walk up the lane. That's just my idea of a happy home."

"The woman who lived there last has just been taken to the insane asylum," remarked the driver nonchalantly. "Didn't you know that the statistics show that the majority of country women who lose their minds come from farmhouses on little traveled roads or those set back at the end of a lane, where they see hardly anybody but the family?"

"It may look peaceful to you, you are tired of seeing folks because you live in a city and get too much of it," he continued. "But if you lived there day in and day out, with no change or diversion except a change in the day's work, don't you think it would get on your nerves, so to speak? The monotony and lonesomeness of it is enough to drive a delicate woman mad."

The force of his argument of course is apparent when we stop to think that we are by nature sociable beings. We need the society of our kind to keep us rightly balanced, and the woman who is much by herself, of course, would fall an easy prey to obsessions.

For one reason only the house well back from the road is desirable, it makes a shorter haul from the fields as the barns are then more nearly in the center of the farm. But the same advantage could be secured by buying land on both sides of the road. The house could then be near the road where the busy woman would have a chance to forget work occasionally by glimpses of some other lives around her. There would be a greater incentive, too, to keep the buildings and grounds up. It is only human nature to get lax when we think we are out of sight, and to spruce up if we are where we can be viewed critically.

They are building many houses in the city now with the kitchens and work rooms in front, and the living-rooms in the back. This is to give the family a chance to get away from dust and noise when they wish to rest, and to have the living-rooms overlooking the garden, which is made a bower of beauty. Why would not this be the ideal way of building the farm home? Put the kitchen and pantry in front of the house, where the housewife can see the road as she goes about her duties. There could be a clean neat porch as at present, vine-screened, on which she could sit to do a great share of the work, prepare vegetables for the noon-day meal and get ready the fruit for canning. She could iron out here, with one of the charcoal or gasoline irons. Or if she is fortunate enough to have electricity there could be a porch light which might be utilized on ironing days. The kitchen porch in front of the house would do away with the pails of garbage which cluster about so many farm doors, attracting the flies.

My plan of an ideal kitchen has always had a window over the sink. What woman who has stood on hot summer days with her hands in hot dishwater has not longed for a breath of fresh air? Recently I found my ideal, and instead of one window over the sink there were two!

This kitchen is in a town house, but there is no reason why it could not be copied on the farm. The lot on which the house stands is a long one, running straight through from one street to another. The double windows are in the side of the kitchen, so that standing in front of them at work one has a glimpse of both streets. At the left of the sink is a drain board running to the end wall. At the right are built in cupboards, which reach just to the top of the sink and are covered with zinc to serve as kitchen table. Across the right end of the kitchen other cupboards are built to the ceiling, thus giving room for all the kitchen dishes, spices, sugar, empty fruit cans, etc., which are needed in that room. The cupboard under the table serves for dishpans, kettles, baking tins, etc. The range

stands just to the left of the drain board, so that all the appurtenances for work are together in as small a space as possible. No extra steps need be taken when cooking a meal, the water is at your right hand and the drain board is long enough to give space for salt and pepper and the spoons, knives and forks used in cooking.

The pantry is between the kitchen and dining-room and has space for the refrigerator, which thus can be kept out of the heat and much ice saved. There are cupboards there for food which can not go in the ice box, and for the dishes used on the dining-table.

Such a kitchen in the farm home, with the windows facing the road, and the outside door on one side, would make life cheerier for the woman of the house. She would have plenty of air while at work, and opportunity to get outside of herself as well. Each passing stranger would link her with the life of the world, and keep her from growing self-centered and morbid.

HOME QUERIES.

Household Editor:—Mrs. Wm. M. would like to know how to bleach clothes. Into eight quarts of warm soft water put one pound of chloride of lime; stir with a stick a few minutes, then strain through a bag of coarse muslin, working it with the hands to dissolve thoroughly. Add to this in a tub five pails of warm soft water, stirring thoroughly, and put in the clothes to be bleached. The cloth should be wet well before putting into the bleaching water so it will take the lime evenly. Let it remain one hour, turning it over occasionally so that every part may be evenly bleached. This is enough for 25 yards of muslin one yard wide. Another lady wishes to know how to make home-made furniture polish. Take alcohol, good vinegar and sweet oil, equal parts of each, except the oil of which a little more is needed than of the others. Shake the bottle well daily for two weeks, when it is ready for use, though the longer it stands the better. When using, rub the furniture dry. Every two months is often enough for use.

—Mrs. M. F. S.
Recipe for Bleaching White Cloth.—Use one ounce of chloride of lime to one yard of cloth. Dissolve in a dish over night. Boil up the clothes in a hot suds then wring out, put the dissolved lime into a tub of cold or warm water, stir up, put the cloth through it until white. Then rinse in clear water and hang up to dry.—Reader.

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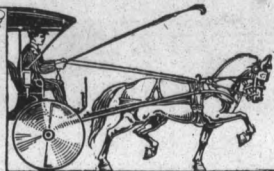
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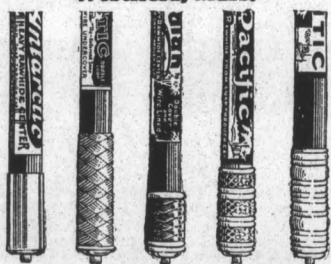
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Dear Sir: I received Oxford Sheep yesterday in good shape and will say he is a peach. When I got home with sheep a couple of my neighbors came over and looked him over. They said he was the biggest sheep they ever saw and the best around here. I will keep the crate. I paid the express agent \$2 for it. Thanking you for your prompt delivery, I remain, Yours truly, Arthur L. Peck.

At one time men drove many miles in search of Rams: nowadays PURE BRED Sheep are ordered by letter of "The Sheep Man of the East"

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The Ingleside Farm Shropshire Sheep than ever before. All stock recorded. Write us what you want HERBERT E. FOWELL, Ionia, Mich. Citizen's Phone.

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SHROPSHIRE rams 1 and 2 years old, and some extra good lamb rams, wool and mutton type. GEO. P. ANDREWS, Dansville, Ingham Co., Mich.

Farm Commerce.

Tentative Grades for Corn Formulated.

UNDER authority from Congress contained in the agricultural appropriation act which authorizes the Secretary of Agriculture to fix definite grades for grain, the U. S. Department of Agriculture, through its office of Grain Standardization of the Bureau of Plant Industry, has completed the necessary investigations to justify the fixing of definite grades for commercial corn. On the basis of these investigations, the following tentative grades for corn have been formulated. With the view to having the public fully informed regarding the grades before they are finally adopted, their publication has been authorized by the secretary. Prior to the final fixing of these grades by the department, a formal hearing will be held in Washington the latter part of September or some time during October, the exact date to be announced later.

Tentative Grades for Commercial Corn.

In the classification of grades, white, yellow and mixed corn are all classified as belonging to grades ranging from Nos. 1 to 6, and corn that does not meet the requirements of any of these six grades, is classified as Sample, according to general rule No. 6 below.

The following are the requirements of the different grades as formulated by the Department of Agriculture:

Grade No. 1.—This grade must contain not over 14 per cent of moisture, two per cent of damaged corn, one per cent of foreign material, and two per cent of badly broken or cracked kernels.

Grade No. 2.—This grade must contain not over 15.5 per cent of moisture, four per cent of damaged corn, one per cent of foreign material and three per cent of badly broken or cracked kernels.

Grade No. 3.—This grade must contain not over 17.5 per cent of moisture, six per cent of damaged corn, two per cent of foreign material and four per cent of badly broken or cracked kernels.

Grade No. 4.—This grade must contain not over 19.5 per cent of moisture, eight per cent of damaged corn, two per cent of foreign material and four per cent of badly broken or cracked kernels.

Grade No. 5.—This grade must contain not over 21.5 per cent of moisture, ten per cent of damaged corn, three per cent of foreign material and five per cent of badly broken or cracked kernels.

Grade No. 6.—This grade must contain not over 23 per cent of moisture, 15 per cent of damaged corn, five per cent of foreign material and seven per cent of badly broken or cracked kernels.

Sample Grade.—This grade is defined in General Rule Six below.

The following limitations should be kept in mind when reading the above definitions: "Damaged corn" does not include corn that is "heat damaged" nor what is known to the trade as "mahogany" corn. "Foreign material" includes dirt, cob, finely broken corn, other grains, etc. "Badly broken or cracked kernels" does not include those that are finely broken.

General Rules.

1. The corn in grades No. 1 to No. 5 must be sweet.
2. White corn, all grades, shall be at least 98 per cent white.
3. Yellow corn, all grades, shall be at least 95 per cent yellow.
4. Mixed corn, all grades, shall include corn of various colors not coming within the limits for color, as provided for under white or yellow corn.
5. In addition to the limits indicated, No. 6 corn may be musty, sour, and may also include corn of inferior quality, such as immature and badly blistered.
6. All corn that does not meet the requirements of either of six numerical grades by reason of an excessive percentage of moisture, damaged kernels, foreign matter or badly broken corn; or corn that is hot, heat damaged, fire burnt, infested with live weevil, or otherwise of distinctly low quality, shall be classed as sample grade.
7. In No. 6 and sample grade, reasons for so grading shall be stated on the inspector's ticket or certificate.
8. Finely broken corn shall include all broken particles of corn that will pass through an 8x8-mesh wire sieve, the

diameter of the wire to be twenty-five thousandths of an inch.

9. Badly broken or "cracked" corn shall include all broken pieces of kernels that will pass through a 4x4-mesh wire sieve, the diameter of the wire to be thirty-six thousandths of an inch, except that the finely broken corn as provided for under Rule 8 shall not be considered as badly broken or "cracked" corn.

10. It is understood that the damaged corn; the foreign material, including cob, dirt, finely broken corn, other grains, etc., and the badly broken or "cracked" corn, as provided for under the various grades, shall be such as occur naturally in corn when handled under good commercial conditions.

11. Moisture percentages, as provided for in these grade specifications, shall conform to results obtained by the standard method and tester as described in Circular 72, Bureau of Plant Industry, U. S. Department of Agriculture.

Acidity.

The grain standardization investigations of the department have shown that the "degree of acidity" is a most important factor in determining the soundness of corn, and likewise its safety for storage and for shipment. While the results of these investigations clearly indicate that the acidity test affords a means of, accurately measuring the quality or degree of soundness of any given lot of corn, it has not been included in the grade requirements for the reason that neither the grain inspection departments nor boards of appeal or familiar with, or equipped for, making such determinations in commercial grading. The results likewise indicate that sound corn of good quality, does not exceed 22c.c. in acidity; that corn with an acidity in excess of 26c.c. has already undergone partial deterioration and is unsafe for storage; while corn showing an acidity of 30c.c., or over, is distinctly of inferior quality, such as would in almost every instance be classed as sample grade under the present system of grading. The degree of acidity, as herein expressed, represents the number of cubic centimeters of tenth normal alkali solution required to neutralize the acid in 100 grams of corn.

HARVESTING MARKET TOMATOES GREEN.

The practice has become common of harvesting the tomatoes meant for market while they are yet quite green, that is when the fruits show the first tinge of color. This, of course, means for those markets that cannot be reached in a few hours after the fruits have been taken from the vines.

While the fruits thus harvested may not have the finest qualities that are to be found in the tomato that has finished its ripening upon the vine, there are advantages that the commercial grower located some distance from his market must consider. And first among these advantages is the fact that the soil is much less reduced in fertility because of the comparatively large amount of plant food and energy required to ripen the seeds of the fruits. Although this is not a big saving it is a matter that should not be overlooked by the business grower.

A second and more important reason for the practice of harvesting the fruit green is that there is a better chance to keep a regular supply on hand, since it does not become necessary to rush the product away to market immediately and so can be held to fill current orders. This is particularly advantageous where one is endeavoring to fill the wants of some special trade.

But perhaps the greatest reason for the practice is the saving that it makes possible. In the first place the men can handle much more of the fruit where it is firm than they can when ripe. This renders it possible to effect a considerable saving in the harvesting and packing without injuring the fruit more than painstaking work would if the specimens were ripened. Again the work can, because of the better keeping qualities of the tomatoes, be better organized as a regular picking crew can be engaged, and

this always works greater economy in harvesting and packing. Still a third saving is rendered by the early harvesting in saving much of the crop that would crack if allowed exposure to dews and rains during the last days of maturing. These savings, together with the increased assurance of getting the crop, are arguments that convince a majority of the commercial men of the utility of taking this crop from the vines when the color first began to show.

As hinted in the first paragraph, however, the fact should not be lost sight of that the man who gets his crop to the consumer in a few hours after it is picked would no doubt gain more in the better satisfaction that the consumer would have and the larger price he could get by allowing his crop to come to a good color on the vines, than he would by harvesting green; but the other fellow can well consider the advantages enumerated.

Wayne Co.

A. H.

NO MODEL CO-OPERATIVE ORGANIZATION.

Numerous co-operative associations, especially in the western United States, are appealing to the Department of Agriculture to have the Office of Markets make an investigation of their particular type of co-operative enterprise. The idea apparent in their requests is that the Department proposes to recommend the form of some particular organization for general adoption throughout the United States by producers' co-operative organizations.

The Department has no such plans in view, but is desirous of securing information concerning all co-operative undertakings, wherever they may be located and with whatever products they may deal. It is interested also in consumers' organizations and co-operative mercantile enterprises.

At the request of the Department, the Civil Service Commission has recently held examinations for positions in the Office of Markets, including a specialist in co-operative organization. Sixty-four applicants satisfied the commission that they were entitled to consideration for the position. It will be some time before the commission will be able to correct these papers and make certifications to the Department. After the specialist in co-operative organization has been selected and appointed, it is possible that this officer may, as opportunity arises, make personal observations as to the conduct and methods of some of the numerous associations in the United States to assist the Department in giving the most valuable information and advice to groups of persons desiring to effect organizations.

PRODUCERS BELIEVE IN ADVERTISING THE APPLE.

Apple growers in the western Michigan territory heartily approve of the proposed campaign by the International Apple Shippers' Association, in behalf of an increased consumption of apples. L. E. Meacham, representing the International Association, recently visited this section and was in conference with the larger growers. In nearly every case the growers were positive in their statements that they would help support a campaign which would aim at getting the housewife to think in terms of apples rather than in terms of oranges, grape-fruits, bananas or any other of the semi-tri-plant fruits.

In round figures a million apple trees have been set out in western Michigan during the past four years and in another four years a goodly number of these will be nearing the bearing period. With this great increase in the apple producing power of the region it is important that there be an increase in the ability of the people to consume apples. So the campaign to get the people to eat apples is endorsed.

The banks throughout the section take kindly to the proposition of acting as custodians for the funds to be collected by means of the stamp plan, which plan urges every grower to put a two-cent stamp upon every barrel packed and a one-cent stamp upon every box. The money received is to go into a national advertising fund.

If there is money in storing and holding apples and other fruit, why not club together, build and control a storage plant on the line of some nearby railroad and save this 35 to 50 cents storage toll and the long hours of waiting for a chance to unload in the busy season when moments are golden?

CROP AND MARKET NOTES.

(Continued from page 196).

around \$1 per bu. The crop is not to exceed one-third of an average. Late potatoes are doing some better and may make a 75 per cent crop. Corn about the same. Oats are turning out about 50 per cent of a crop. Two or three light rains, while far from being enough, have materially improved prospects. About the usual wheat acreage is being prepared.

S. E. Mecosta Co., Aug. 28.—Wheat is threshing out fairly well. Oats are very poor. Corn looks fine; potatoes look fine but some show white specks, growers fear rot. Beans did look well but some show blight; largely contract beans in this vicinity. Clover making a fine second growth and good prospect for seed. Ground in pretty good condition for sowing wheat. Apples and peaches very light crop. Not very much stock being kept on farms. Butter worth from 20¢ to 25¢; eggs, 20¢; apples selling from 65¢ to 75¢ per 100 lbs. Early potatoes 50¢ a bu. Not much hay, oats or rye being sold at any price.

Monroe Co., Aug. 26.—The latter part of July and fore part of August the weather was extremely warm and dry, and farmers began to feel a bit discouraged as to the outlook for a corn crop, but the frequent rains for the last four weeks are bringing corn and potatoes to the front amazingly and we will have some corn and potatoes yet, though not as large a yield as we would have had had we had more rain earlier. Last Thursday we had a real old downpour, with a great deal of electricity which did a good deal of damage, a number of barns being struck by lightning and burned to the ground. Quite an acreage of buckwheat sown and looking fine. Farmers are generally getting wheat ground ready for fall seeding.

Tuscola Co.—Recent heavy rains did great damage to crops throughout the county, especially to beans, which had promised to be a bumper crop. Potatoes, too, are affected, and many fields on low ground have begun to rot. Estimates vary all the way from 10 to 50 per cent loss on beans; it is feared that 25 per cent is too low. Some pieces are declared to be a total loss and some will be plowed under, while many fields will lose only on low-lying portions. In places water covered the crop to a depth of at least a foot, and when it finally drained away the unusual heat scalded, cooked and baked the vines and pods. Some growers, however, note that while the leaves are yellow and have in many cases dropped, the pods and vines appear green and vigorous, and they hope the vines will be able to mature the beans. In a smaller district hail riddled corn to some extent, but the damage to that crop, taken as a whole, will be small. Beets, although considered the hardest of crops and capable of surviving extremes of wet and drouth, have been injured to some extent in some sections.

New York.

Genesee Co., Aug. 26.—We have had quite a few showers during the last four or five days and indications are for more. It looks as though the drought of about two months' duration, and of unusual severity, has been broken. This will help out beans, corn, potatoes and pasture wonderfully, all of which crops had suffered dreadfully, not only from lack of moisture, but the very warm weather as well. All kinds of live stock high in price. The mystery of it all is—that so many farmers do not raise more. There is and will be, without any doubt, good money, or profits in live stock, for the man who breeds and feeds properly. Following are the prices paid by dealers, not the retail prices: Butter, dairy, 28¢; creamery, 30¢; pork, dressed, 12¢; live, 8½¢; eggs, fresh, 24¢; spring chickens, 16¢ lb; fowls, 14¢; lambs, dressed, 14¢; wheat, 85¢@87¢; oats, 45¢; beans, pea, \$1.75 per bu; beans red kidney, \$1.75; beans, medium, \$1.85; beans, red marrow, \$2; potatoes, 75¢@1¢ per bu; hay, loose, \$10@12.

Illinois.

Marion Co., Aug. 25.—The long drought has been broken by good rains last week. This is the first good rain we have had since June 24. We have had some light showers of a local nature, with some wind storms which did damage. All crops are light; very little wheat; oats almost a failure, quite a lot were not cut; hay a bare half crop. The meadows and pastures look as though the grass is killed. Potatoes a complete failure. Tomatoes are a light crop. Apples are a fair crop, but are dropping badly. Peaches a fair crop and bringing good prices. Stock peas are looking better than other crops. Most farmers are feeding their stock; cattle and hogs are scarce and are selling for good prices.

Wisconsin.

Waukesha Co., Aug. 29.—On the 16th and 18th severe lightning and heavy rains destroyed several barns, killing some cows. Oats, 37¢@38¢; wheat, 90¢; rye, 60¢; barley, 63¢@65¢; potatoes, 50¢; eggs, 20¢; clover hay, loose, \$8 per ton; timothy, \$10 @11; oats threshed from 35 to 60 bushels per acre; rye, 15 to 18 bu. per acre; barley, 30 to 40 bu. per acre. Clover seed will be a poor crop. Clover hay averages 2½ to 3 tons to the acre, very woody and rank. Rye threshed poor for this section on account of the late frost last spring. Apples plentiful, rotting on the trees.

Ohio.

Hardin Co.—We are having continued dry weather. Threshing seems to be the order of the day and yet there is quite a run of field work to be done. Oats are very poor and wheat was a fair crop. Clover seed is looking fine here yet and seems to be filling good, and most every farm contains from one to two fields of this crop. The early potatoes were no good, very small owing to the dry weather, but late ones are looking better. Cows are scarce and high, so are beef cattle.

"Pittsburgh Perfect"

Adjusts easily to hilly land

NO TROUBLE at all to quickly string "Pittsburgh Perfect" Fence over hills and through valleys. It contains no single, separate wires. The joints are

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

STOCK MEN! If you are thinking of issuing an individual herd catalog or sale booklet, let us help you with it and prepare estimates. We also make a specialty of stock-breeders' stationery, cards, etc. Ours is a quality shop. Write us your needs. **THE HASKINS SERVICE CO. & PANY, Howard City, Mich.**

REG Percherons, Shorthorns, Shropshires and Duroc Jerseys for sale cheap, as 2 of my barns burned Aug. 9th. M. A. BRAY, Okemos, Michigan

FOR SALE—A fine, large pair of **MULES**, two years old. **THE MAPLES, Munger, Michigan.**

FOR SALE OR TRADE

(What you got.) Registered Percheron Stallion, black, 17½ hands high, weighs 1800 lbs. This horse is sound, good style and a colt getter. No use for him. He will make you good money. Come quick. **J. C. BUTLER, Portland, Michigan. Bell Phone.**

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A Few Good Cows fresh or soon to be.

Yearling hens and spring hatched pullets. Also strawberry plants. Give full particulars, price, etc. Address Superintendent, P. O. Box 15, Detroit, Mich.

BREEDERS' DIRECTORY.

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Aberdeen-Angus.

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

Guernsey Bull Calf—Rich in A. R. breeding. Fit to head any herd. **A. Gee Dandy, G. A. WIGENT, Watervliet, Mich.**

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

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

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

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

REGISTERED HOLSTEINS—"Tis sad when you think of a lonely life!" a poor crippled Angel in a community of Devils. **HOBART W. FAY, Mason, Michigan.**

"Top-Notch" Holsteins.

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

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HOLSTEIN—Bull Calf sired by best son of Pontiac Butter Boy. Dam is sister by same sire to 8 cows who have official butter records averaging over 27 lbs. butter in 7 days. Price \$50 for quick order. **C. D. WOODBURY, Lansing, Mich.**

Holstein Friesian Cattle. A couple of young bulls for sale. We boast of quality not quantity. **W. B. Jones, Oak Grove, Mich.**

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

FOR SALE—On Cornwell Farm, Clara, Mich. Holstein new milk cows. Also 400 yearling steers. Also good Dairyman wanted. Enquire of **ERNEST PIETZ.**

Bigelow's Holstein Farms

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

Send for circular.

Bull Ready For Service.

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

L. E. CONNELL, Fayette, Ohio.

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

For Sale—4 Reg. Holstein cows bred to Sir Korndyke Pietertje Hengerveld, No. 55229. Also 2 bull calves and 3 heifers. **E. A. BLAOK, R. 6, Lakeview, Mich.**

For Sale—2-yr.-old Jersey Bull—Dam's 5-yr.-old record—10551 lbs. milk, 513 lbs. fat, 604 lbs. butter. Sires dam's record—12267 lbs. milk, 620 lbs. fat, 708 lbs. butter. 2-yr.-old full sister's record—8510 lbs. milk, 435 lbs. fat, 513 lbs. butter. All authenticated, kind, sound, sure. **Waterman & Waterman, Ann Arbor, Mich.**

Lillie Farmstead Jerseys

(Tuberculin tested. Guaranteed free from Tuberculosis.) Several good bulls and bull calves out of good dairy cows for sale. No females for sale at present. Satisfaction guaranteed.

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Buy Jerseys

Dollar for dollar invested, the Jersey will earn back the amount paid for her quicker than other breeds because her product brings a higher price per quart or per pound. For the home she is unsurpassed, and her low cost of keep makes her most desirable. Write now for Jersey facts. No charge.

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

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

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A few young Jersey Bull Calves at \$25 to \$45 each.

RED POLLED COWS and HEIFERS

For sale, of good blood, bred to move quick. **John Berner & Son, Grand Lodge, Mich. Route 4.**

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

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

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

For Sale

—2 Reg. Shorthorn Bulls by Victor Robin a son of Victor Linwood an International Winner. **JOHN SCHMIDT, Lansing, Michigan.**

3 Choice Shorthorn Bulls For Sale. 6 to 8 mos. old, Bates bred. Registered. Call or write to **J. E. TANSWELL, Maple Ridge Farm, Mason, Mich.**

HOGS.

Durocs & Victorias—A Desirable Bunch of Sows of M. T. Story, R. 48 Lowell, Mich. City Phone 55.

A Yearling Sow—bred for July farrowing, also a choice lot of Spring Pigs for sale. Either sex. **A. A. PATULLO, R. No. 1 Deckerville, Mich.**

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

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

O. I. C.—Big growthy type, last fall gilts and this spring farrow to offer. Very good stock. **Scott No. 1 head of herd. Farm ¼ mile west of depot. OTTO B. SCHULZE, Nashville, Mich.**

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

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

O. I. C.—Large, heavy boned boars and gilts at a bargain for next 30 days. **GLENWOOD STOCK FARM, Zeeland, Michigan**

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

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

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

IONIA GIRL

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

O. I. C. SWINE—Bred gilts all sold, have a No. of Spring pigs on hand. Will book orders for Sept. pigs, get my price on pairs and trios not akin. **A. J. GORDON R. No. 2, Dorr, Mich.**

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

Duroc Jersey Hogs—Have a few bred gilts, and spring boars, prize-winning strain. **W. C. TAYLOR, Milan, Mich.**

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

Duroc Jerseys—Nothing But Spring Pigs For Sale. **CAREY U. EDMONDS, Hastings, Michigan.**

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

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

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

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

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

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

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

LARGE TYPE P. C. FALL PIGS all sold. Have the greatest bunch of spring pigs I ever raised. Eight sows farrowed 86. Come or write. Expenses paid if not satisfied. Free livery from Parma. **W. E. LIVINGSTON, Parma, Mich.**

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

350 BIG TYPE MULE FOOT HOGS—All ages for sale. Prolific and hardy. Best breed for Michigan. Also Pones. **J. DUNLAP, Box M, Williamsport, Ohio**

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

YORKSHIRE SWINE—Young boars ready for service. Also spring farrowed gilts and Aug. farrowed pigs for sale. Pairs not akin. **GEO. S. McMULLEN, Grand Lodge, Mich.**

IMPROVED LARGE YORKSHIRES

Sows and gilts bred for September and October farrow. Service boars. Pigs all ages. Breeding and prices upon application. **W. C. COOK, R. 42, Ada, Michigan.**

Lillie Farmstead YORKSHIRES

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

Mention the Michigan Farmer when writing to advertisers.

Markets.

GRAINS AND SEEDS.

September 3, 1913.

Wheat.—The sharp advance in wheat on Tuesday was largely credited to the strength of the corn market, although there were other very legitimate reasons for the advance, the principal of which was a decrease in the American visible supply. This is a very unusual factor in the market at a season when both winter and spring wheat are ordinarily moving in considerable volume. It is an indication that farmers are not selling their wheat. Michigan millers in all directions are having difficulty in getting enough wheat to keep their mills running on full time. This means that Michigan farmers believe that their crop is worth more money in view of the comparatively high price of other grains and that they are determined to hold on to their grain for better prices. The Liverpool market is also strong, due to a large decrease in the world's visible supply and a corresponding strength of Argentine deliveries. One year ago the price for No. 2 red wheat was \$1.07 per bu. Quotations for the past week are as follows:

	No. 2	No. 1	Dec.	May.
Thursday	91	91	95	\$1.01
Friday	91	91	95	1.01
Saturday	91 1/4	91 1/4	95 1/4	1.01 1/4
Monday	92 1/4	92 1/4	96 1/4	1.02 1/4
Tuesday	92 1/4	92 1/4	96 1/4	1.02 1/4
Wednesday	95	95	98 1/4	1.04

Chicago, (Sept. 2).—No. 2 red wheat, 90 1/2@91c; No. 3 red, 89@90c; Dec., 90 1/4c; May, 95 1/4c per bu.

Corn.—The corn market has retained unexpected strength on account of a lack of general improvement of conditions over the corn belt and a feeling that it is now so late that even favorable weather will not make a big difference in the prospect. No. 3 corn sold on this market one year ago at 81c per bu. Quotations for the week are as follows:

	No. 3	No. 3
	Corn.	Yellow.
Thursday	76 1/2	77 1/2
Friday	76 1/2	77 1/2
Saturday	76	77
Monday	76 1/2	77 1/2
Tuesday	76 1/2	77 1/2
Wednesday	77	78

Chicago, (Sept. 2).—No. 3 corn, 75@76c; Dec., 70 1/2c; May, 72c per bu.

Oats.—This market shared in the general advance on Tuesday in sympathy with corn and the advance in wheat. One year ago the price for standard oats on this market was 37 1/2c per bu. Quotations for the week are as follows:

	Standard.	White.
Thursday	42 1/2	42
Friday	42 1/2	42
Saturday	42 1/2	42
Monday	42 1/2	42
Tuesday	43	42 1/2
Wednesday	43 1/4	43 1/4

Chicago, (Sept. 2).—Standard oats, 42 1/2@43c; No. 3 white, 41 1/4@42 1/4c; Dec., 44 1/4c; May, 47 1/4c per bu.

Beans.—This market has remained at last week's nominal quotations. Immediate and primary shipments are quoted at \$1.80; Oct., \$1.85 per bu.

Chicago, (Aug. 26).—No change has occurred in local bean values. Pea beans, hand-picked, choice, are still at \$1.90@1.95 and red kidneys at \$1.65@1.80 per bushel.

Rye.—Rye has again advanced 2c during the week, the quotations being 72c for cash No. 2. At Chicago prices are about level with one week ago, cash No. 2 being quoted at 68@68 1/2c per bu.

Barley.—There has been a marked advance in the market for good grades of barley at this point during the week. Good samples are now selling at \$1.30@1.50 per cwt. At Chicago there is a wider spread in values with an advance in the better grades, quotations being 58@77c per bu. At Milwaukee prices are about level with last week, malting grades selling at 65@76c per bu.

Clover Seed.—There has been a big drop in futures during the past week due to the outlook for a good crop of seed which is said to be filling well over large sections of the drier area in the clover producing states. October and December deliveries are now quoted at \$6.75; October alsike at \$10. At Toledo prime cash clover seed is selling at \$7; Oct., \$6.72 1/2; Dec., \$6.75; March, \$6.90; Dec. and March alsike \$10.50 per bu.

Timothy Seed.—Quotations remain at last week's figures, prime spot selling on this market at \$2.60 per bu. At Toledo prime cash old seed is quoted at \$2.45; new, \$2.52 1/2; Dec., \$2.57 1/2; March, \$2.62 1/2 per bu.

FLOUR AND FEEDS.

Flour.—Jobbing lots in 1/4 paper sacks are selling on the Detroit market per 196 lbs. as follows: Best patent, \$5.30; second, \$5.20; straight, \$5; spring patent, \$5.10; rye flour, \$4.60 per bbl.

Feed.—In 100-lb. sacks, jobbing lots: Bran, \$23; coarse middlings, \$24; fine middlings, \$26; cracked corn, \$31; coarse corn meal, \$29; corn and oat chop, \$25.50 per ton.

Hay.—Values 50c@1 higher on most grades. Carlots on the track at Detroit are: No. 1 timothy, \$15.50@16; standard, \$14.50@15; No. 2, \$13.50@14; light mixed, \$14.50@15; No. 1 mixed, \$13@13.50.

Chicago.—Firm under a very satisfactory demand. Choice timothy quoted at \$19.50@20 per ton; No. 1, \$18.50@19; No. 2, \$16@17.

New York.—Top grades of both old and new are firm. Medium stuff in oversupply

and easy. Large baled, No. 1 timothy, \$21@22; standard, \$20@20.50; light clover, mixed, \$19@20; heavy mixed, \$17@19 per ton.

Straw.—Detroit.—Steady. Rye, \$8@9; wheat and oat straw, \$7@7.50 per ton. Chicago.—Quotable as follows: Rye, \$7.50@8; oat, \$6.50@7; wheat, \$6@6.50. New York.—Dull. New, rye straw, \$17 per ton.

DAIRY AND POULTRY PRODUCTS.

Butter.—So far local values have been little affected by the marked rise at other points. Elgin figures came a day late because of the holiday, and they reveal an advance of 2 1/2c over last week. A firmer feeling is in evidence in all markets. Extra creamery, 27 1/2c per lb; firsts 26c; dairy, 21c; packing stock, 19c.

Elgin.—Market firm at 30c; a 2 1/2c advance over last week's price.

Chicago.—All grades in good request at figures averaging 1@1 1/4c higher. Fancy stock is scarce and occasional draughts on storage supplies are being made. Quotations: Extra creamery, 29c; extra firsts, 27 1/2@28c; firsts, 25@26c; seconds, 24@24 1/2c; ladles, 23c; packing stock, 22c.

New York.—This market cleaned up well at last week's advanced figures and all kinds and grades have made a further gain this week. Marketing very firm. Creamery extras, 30@30 1/4c; firsts, 27 1/2@29 1/4c; seconds, 25 1/2@27c; state dairy, finest, 28 1/2@29c; good to prime, 26 1/2@28c; common to fair, 23@26c; packing, 20@23c as to quality.

Eggs.—Offerings continue variable in quality, dealers finding difficulty in securing enough good stock and storage supplies are being drawn upon at some points. The local quotation on current receipts is 1c higher than a week ago. Current offerings, candled, quoted at 22 1/2c per dozen.

Chicago.—This market is reported steady with an unusually large proportion of the offerings unsuited to trade requirements. Quotations run about as follows: Miscellaneous lots, cases included, 14@20c, according to quality; do., cases returned, 14@19 1/2c; ordinary firsts, 18 1/2@20c; firsts, 22 1/2@23c. Refrigerator stock in good demand at 21 1/2@22c for April firsts.

New York.—Somewhat irregular; values practically unchanged. Fresh gathered extras, 28@30c; extra firsts, 26@27c; firsts, 24@25c; western gathered whites, 22@29c per dozen.

FRUITS AND VEGETABLES.

Apples.—Values are down a little this week. Now being quoted at 50@75c per bu., and \$2@3 per bbl.

Huckleberries.—Not plentiful. Quoted at \$4.25@4.50 per bu.

Peaches.—Supply increasing and market is becoming more active. Prices range from \$1@2.50 per bu.

Potatoes.—Supplies show no material increase and many of the offerings are small and undesirable. Imported tubers are quoted at \$2.50@2.60 per 2 1/2 bu. sack. Per bushel, 85c@1.

Tomatoes.—Increased offerings has put values on a lower basis. Home-grown 75@90c per bu.

Cabbage.—Steady. Good quality quoted at \$2.25@2.50 per bbl.

Poultry.—The range between springs and hens is gradually narrowing, the former having an advantage of only 2c this week. Ducks are quoted higher. Offerings greater than last week and market for fresh stock in a healthy condition. Quotations are: Live.—Springs, 17@17 1/2c per lb; hens, 15@15 1/2c; No. 2 hens, 11@12c; old roosters, 10@11c; turkeys, 17@18c; geese, 11@12c; ducks, 14@15c.

Chicago.—Market steady under fairly liberal receipts. Some loss on shipments due to hot weather. Quotations on live are: Turkeys, good weight, 19c; others, 12c; fowls, general run, 15c; spring chickens, 16 1/2c; ducks, 14c; geese, 8@11c; guinea hens, \$4@5 per dozen.

New York.—Dressed poultry quiet with prices unchanged. Fresh dressed western chickens, 17@23c; fowls, 15@19 1/2c; turkeys, 18@20c.

Cheese.—Easy. Wholesale lots, Michigan flats, 13 1/2@14c; New York flats, 15 1/2@16c; brick cream, 15 1/2@16c; Limburger, 15 1/2@16c.

GRAND RAPIDS.

An attendance of 700 people was reported on the city market Tuesday morning and there were 425 loads of fruit and farm and garden produce in sight. Fruit brought the following prices: Peaches, \$1.75@2.50; plums, 75c@1; apples, 50c@1.25; crabapples, 50@75c; grapes, \$1.75@2. Potatoes ranged from 30@70c; tomatoes, 90c@1; muskmelons, \$1@1.75; watermelons, 50c; corn, 10@12c; cucumbers, 40c. Hay is selling at \$17@19 per ton, which is almost double the prices of a year ago though the quality is far better. Jobbers are quoting 22c for eggs and 23c for dairy butter.

THE LIVE STOCK MARKETS.

Buffalo.

September 1, 1913.

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

Receipts of stock here today as follows: Cattle, 140 cars; hogs, 90 double decks; sheep and lambs, 70 double decks; calves 1,150 head.

With 140 loads of cattle on our market here today, and only 18,000 reported in Chicago, our market was strong on all grades and from 15@25c per cwt. higher than last Monday. The market was active at the advance, and everything was closed out before 2 p. m.

We quote: Best 1300 to 1500-lb. steers, \$9@9.25; best 1200 to 1300-lb. do., \$8.75@9; best 1100 to 1200-lb. do., \$8.50@8.75; coarse and plain heavy steers, \$7.75@8.25; choice handy steers, \$8.25@8.50; fair a

to good 1000 to 1100-lb. steers, \$7.75@8.25; grassy 800 to 1000-lb. steers, \$7.25@7.75; best cows, \$7@7.25; butcher cows, \$6@6.25; cutters, \$4.50@5; trimmers, \$3.75@4; best heifers, \$7.75@8; medium butcher heifers, \$7@7.50; stock heifers, \$5.25@5.50; best feeding steers, \$7.25@7.50; fair to good do., \$6.75@7; common light stockers, \$6@6.25; best butcher bulls, \$6@6.50; best bologna bulls, \$5.40@5.75; stock bulls, \$5.15@5.50; best milkers and springers, \$7@8; common to good do., \$5@6.

Our hog market today suffered a severe break in prices owing to a liberal supply, about 90 double decks, and close to 60,000 reported in Chicago. Buyers and sellers were apart for some time owing to mean bids by packers, and it was quite late in the day before the market got fully leveled away. When basis of trading was established, about 9c took the best mixed grades, with some ordinary heavies at \$8.50@8.75; yorkers up to \$9.10 and a few at \$9.15; pigs extremely dull at \$8.50@8.75; light pigs from \$5@6.50; too many of this kind here today; roughs, \$7.25@7.75; stags, \$7@7.50.

The sheep and lamb market was active today, with prices about 25c lower than the close of last week; most of the choice lambs selling from \$7.65@7.75; yearlings, \$5.75@6.25; look for little better prices the balance of the week with moderate receipts.

We quote: Choice lambs, \$7.65@7.75; cull to fair lambs, \$6@7.50; yearlings, \$5.75@6.25; bucks, \$3@3.50; wethers, \$5@5.25; handy ewes, \$4.50@4.75; heavy do., \$4@4.25; cull sheep, \$3@3.50; veals, choice to extra, \$12@12.25; fair to good, \$10@11.50; heavy calves, \$5.50@8.

Chicago.

September 1, 1913.

A widening spread in cattle values, long expected, is developing. This is the result of growing demand for choice to prime heavy and yearling steers, and their shortage in the supply and range competition against medium and plain natives. Marketings have been liberal recently and in the west showed the biggest volume in years, Kansas City establishing a record for one day, on Monday, August 25, with a little over 37,000 head. More than half this enormous crop was only feeder stuff, however, and Chicago continues, the chief fat cattle center. Locally it was a firm and higher market last week for choice goods, tops advancing to \$9.25 for prime 1,105-lb. Illinois yearling steers and heavies to \$9.15. A big quota of choice heavies went at \$8.85@9 and spread of \$8.25@8.65 took medium to good yearlings and heavy beefs. Stuff ranging down in value from \$8.25 felt western competition and failed to show gains. In fact, some sales below \$8 were a few points under the previous week. Common and medium grassers and warmed-up natives sold at \$7.40@8. Range run was liberal, about 7,000 arriving and these sold steady to strong, tops at \$8, bulk of beef rangars \$7.10@7.35 and range feeders at \$6.25@7. Prime corn-fed cows and heifers held firm, yearling heifers selling up to \$8.65 and cows at \$7.25@7.50 where they possessed prime finish. Grass heifers went at \$6@7.25 and common stock heifers down to \$5.50. Cows off grass sold at \$5@6.40 and cutters at \$4.25@4.85 with canners at \$3.25@4. Bulls made largely \$5.50@6.60, tops \$7.50@8 and canners \$4.75@5.15. Calves advanced to new record prices, vealers selling at \$12.25 and medium to choice \$11@12. Heavy calves went at \$5.25@7.50 and fat 250 to 300-lb. weights brought \$7.50@8.50. Feeding cattle supplies were largest in weeks past, many coming from the west and comprising just plain light grades. Values declined 15@25c from the week previous. Big demand continued to be shown by Illinois, Indiana, Michigan and Ohio buyers while there was also a lot of buying of light stock steers by Pennsylvania farmers. Feeders of good kind sold at \$7@7.75, choice stockers up to \$7.60 and a common to fair sort at \$6@6.85. Common feeder steers went down to \$6.25 and poor tailing stock heifers at \$5.25@5.60, while good feeding heifers cost \$6.50.

Hogs were marketed much more freely than the week before and average prices showed declines but choice light and butcher grades held well up to recent strong levels. In fact, tops at \$9.35 were higher than for some weeks past. Wide price spread continued a trade feature, the big lard hogs selling down to \$7.25@7.50 while a good sort of heavy packing grades went at \$7.75@8, heavy shipping at \$8.25@8.80. Selected butchers sold at \$8.90@9.20 and mixed packing at \$7.65@8.15, while smooth light bacon types brought \$9.10@9.35. Heavy sows off grass and fed a little corn were numerous among supplies since these grades are not profitable to feed now that corn has risen fast in value during recent weeks. Sick pigs were frequently seen but there was a fair portion of sound ones, these finding good outlet at \$8@8.60 and poor conditioned kinds sold down to \$4.50@5.50.

Stronger prices for sheep, gains of 10@20c being noted and a little lower tendency of the lamb market were features in ovine trade. Increasing proportion of lambs in range receipts caused decline for them. Supplies from Montana, Wyoming and Idaho however, were shy of a good quota of feeding sheep and lambs and these brought firm prices. Feeder buyers in fact fell short of their orders and there is small prospect of liberal supplies of feeding stuff being had for several weeks later this season. Feeding lambs sold up to \$7@7.10, and merely a plain sort at \$6.75 while fat native and range lambs topped at \$8.15 with a common kind down to \$5.50@6.25. Fat wethers topped at \$4.75, ewes at \$4.65, and a common kind sold down to \$3@3.50. Feeding wethers sold up to \$4.50, feeding ewes at \$3.70 and range breeding ewes at \$4.50@4.75 while a choice kind of native breeding ewes went at \$5@5.25.

Horse market shows no signs of renewed activity in demand. It has been a poor trade all summer and gives pros-

pect of continuing so until eastern demand from big commercial concerns shows growth. Speculators from the east have been chief buyers recently. Very little demand was shown from the country and northern lumber camps are thus far calling for few horses. Drafters went up to \$300@325 but not many above \$235 and plain to fair grades at \$175@235. Loggers and feeders sold at \$125@230 and farm workers mainly at \$180@220, while common light city horses were a drug down to \$75@125.

LIVE STOCK NEWS.

Kansas City record for one day's cattle receipts was established Monday of last week when 37,000 arrived. Three-fourths of the supply comprised feeding cattle from dry pasture sections of Kansas and Oklahoma, as well as Colorado. Grazers in these states held on resolutely during the worst period of the recent drought, and when a few light showers finally fell there was hope of being able to run cattle on grass a few weeks longer at least. It appears, however, that pastures in those states are gone for this season and forced liquidation is now a case of necessity. Tremendous movement of thin steers from dry pasture quarters enables feeders in other parts of the country and especially Missouri, Illinois, Iowa, Indiana and Ohio getting a generous crop to run on prospective good fall grass.

Wide range of hog prices still continues to feature the trade. Markets are getting a big proportion of grassy sows which having weaned their litters were fed a little grassy corn and hurried into killing condition. Rise in corn cost recently has compelled growers to cash in, since big hogs now fail to pay their board bill.

Range cattle condition is poor and probably will continue so another month. Early gathering on many ranges of the northwest is declared to have been compulsory because of the encroachment of settlers. This means a cutting down in numbers of the few remaining good sized herds in Montana and South Dakota. A 23 load consignment of Matador Land & Cattle Company steers from South Dakota which averaged 1,225 lbs. and sold at \$8 showed best range quality of the season thus far. Where feed on the ranges is abundant the cattlemen are showing no haste to round up shipments. Shortage in range supplies this season, it is confidently predicted, will necessitate a strong price basis up until the close of the range season.

Chicago market is getting a larger run of thin steers of feeder kind and a broad trade with the east is developing. Pennsylvania, Virginia and Maryland buyers are becoming more active in the market, although current high cost of 550 to 700-lb. stockers is holding demand below volume shown at this season in recent years. Packers' quest for cheap cattle is keen and they are buying a good many in the southeast. South Carolina and Georgia owners have recently sold several thousand head to Chicago packer representatives who shipped them to New York. Most of the purchases in southeastern territory are scrub stock which goes into the cheap beef trade of the east. Last fall packers brought thousands of canner cows from Georgia, South and North Carolina and even from Florida, into the Chicago market. This stuff was used for canned beef trade, the European orders at that time being of heavy volume. Some of the southern cows which had just a little "kill" to them, however, yielded loins for fresh meat demand.

A good many people have been taken by surprise on account of the remarkable boom that has taken place in hogs in recent weeks, although experienced men like Patrick Cudahy, the well-known Milwaukee packer, had many weeks earlier in the year made predictions of very much higher prices. Mr. Cudahy placed himself on record by predicting a rise later in the year to \$10 for prime hogs, and in all probability prices have not yet attained their highest limit. The Chicago market can absorb many more hogs than are offered there, and similar conditions exist in other important packing cities of the west and east. One extremely important factor in the market is the greatly increased demand for fresh pork products, such as chops and pork for roasting, this being due in great measure to the unusual dearthness of beef and other meats, for fresh pork is decidedly cheaper than any other meats. With such conditions existing, owners of healthy pigs will undoubtedly realize the importance of giving them the very best care and making them weigh up well when ready for marketing. Eastern packers are forced by lack of sufficient supplies of hogs in their home territory to make considerable purchases from day to day in the Chicago market, usually selecting the choicer lots of light and medium butcher weights, and this creates competition for these offerings.

The Interstate Commerce Commission announced a ruling affecting express companies that will be of great economic interest to the country. Express rates will be reduced by about 16 per cent of the gross income of the several companies. This reduction will amount to about \$260,000,000. The Commission also prescribes a so-called block system to be used by the companies. This system will divide the United States into 950 blocks, each of which averages about 2,500 square miles of territory. By this means the 900,000,000 different rates now published by the express companies will be reduced to less than 650,000. It is the belief of this Commission that this change will affect a simple solution of the existing maze of freight rates. The new order is to become effective October 15 and will continue for a period of two years, this provision being made to give the commission a chance to study the effect of the arrangement.

THIS IS THE FIRST EDITION.

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

DETROIT LIVE STOCK MARKETS.

Thursday's Market.
September 4, 1913.

Cattle.

Receipts, 997. Market steady at Wednesday's prices.

We quote: Extra dry-fed steers and heifers, \$8; steers and heifers, 1000 to 1200, \$7.25@7.75; do. 800 to 1000, \$7@7.25; grass steers and heifers that are fat, 800 to 1000, \$7@7.25; do. 500 to 700, \$5@6; choice fat cows, \$6; good do., \$5.50@5.75; common do., \$4.50@5; canners, \$3@4.25; choice heavy bulls, \$6.50; fair to good bolognas, bulls, \$5.75@6.25; stock bulls, \$5@5.50; choice feeding steers, 800 to 1000, \$6.75@7.25; fair do., 800 to 1000, \$6.25@6.75; choice stockers, 500 to 700, \$6.50@6.75; fair do., 500 to 700, \$5.50@6.25; stock heifers, \$5@5.50; milkers, large, young, medium age, \$6@8.50; common milkers, \$4@5.50.

Spicer & R. sold Sullivan P. Co. 4 butchers av 980 at \$6, 1 cow weighing 950 at \$4; to Breitenbeck 1 bull weighing 870 at \$5.75; to Deck 18 feeders av 736 at \$7.10, 6 stockers av 590 at \$6.50, 4 do av 480 at \$5.12; to Rattkowsky 3 cows av 960 at \$5; to Kamman B. Co. 12 butchers av 832 at \$6.25; to Mich. B. Co. 25 do av 922 at \$6.65, 3 steers av 900 at \$7; to Kull 1 steer weighing 710 at \$6.75; to Clough 4 do av 772 at \$6.50; to Rattkowsky 1 cow weighing 570 at \$5.50; to Sullivan P. Co. 1 bull weighing 480 at \$5.25, 2 do av 1485 at \$6.25, 1 do weighing 1120 at \$6, 2 do av 660 at \$5.50, 4 cows av 1012 at \$5.75, 1 do weighing 850 at \$4.50, 2 steers av 635 at \$5.75, 3 cows av 876 at \$4.50, 4 do av 980 at \$6, 1 do weighing 950 at \$4.

Roe Com. Co. sold Breitenbeck 5 cows av 974 at \$5, 1 do weighing 1000 at \$4.25; to Rattkowsky 5 do av 1040 at \$5.50; to Mason B. Co. 1 bull weighing 900 at \$6, 3 cows av 1053 at \$5.75; to Torrey 10 stockers av 456 at \$6; to Kulow 9 do av 446 at \$6; to Goodwin 3 cows av 873 at \$4.50; to Mich. B. Co. 2 bulls av 910 at \$6.

Bishop, B. & H. sold Fish 1 stocker weighing 540 at \$6.50, 3 feeders av 783 at \$7; to Sullivan P. Co. 1 bull weighing 640 at \$5.50, 5 cows and bulls av 1020 at \$6, 4 do av 1140 at \$6.25, 1 cow weighing 910 at \$5, 2 do av 985 at \$5.25, 1 bull weighing 480 at \$5.25; to Mich. B. Co. 7 steers av 900 at \$7.40, 2 cows av 1185 at \$6, 2 do av 935 at \$5, 6 do av 985 at \$5.75; to Spencer 6 do av 926 at \$4.50; to Breitenbeck 8 butchers av 764 at \$6.75, 4 do av 657 at \$6, 4 steers av 920 at \$7, 4 cows av 900 at \$4.50; to Cooke 4 steers av 1090 at \$8; to Sullivan P. Co. 5 bulls av 482 at \$5.75; to Goose 5 butchers av 430 at \$5.35, 2 do av 640 at \$6; to Parker, W. & Co. 1 steer weighing 1020 at \$7.75; to Duff 2 stockers av 500 at \$6.50, 4 do av 675 at \$5.45; to Mason B. Co. 6 butchers av 700 at \$6.50; to Hirschleiman 7 do av 750 at \$6.65; to Sullivan P. Co. 8 cows av 785 at \$5, 7 butchers av 631 at \$5.75, 3 cows av 866 at \$4.75, 1 steer weighing 900 at \$7.25, 6 butchers av 750 at \$5.85, 3 do av 800 at \$6.50, 3 do av 923 at \$5.50; to Kull 22 steers av 820 at \$7.10; to Marx 3 do av 677 at \$6.25; to Bresnahan 12 butchers av 530 at \$5.90; to Austin 3 stockers av 777 at \$5.35; to Parker, W. & Co. 4 cows av 895 at \$4; to Thompson Bros. 3 do av 797 at \$4.50.

Haley & M. sold Breitenbeck 2 heifers av 845 at \$6.50, 1 cow weighing 910 at \$4.50; to Grant 9 butchers av 536 at \$5.90, 3 do av 666 at \$6.35, 2 cows av 1005 at \$6.25; to Sullivan P. Co. 4 bulls av 482 at \$5.25, 10 butchers av 820 at \$6.65, 2 cows av 1075 at \$6.25, 1 bull weighing 960 at \$6.25, 2 butchers av 575 at \$5.25, 8 do av 576 at \$6, 1 cow weighing 1100 at \$5.60, 2 bulls av 610 at \$5.25, 2 do av 700 at \$5.50; to Applebaum 2 cows av 1040 at \$5.65, 3 do av 907 at \$4.75; to Goose 6 butchers av 408 at \$5.50; to Fish 1 steer weighing 880 at \$6.75, 2 stockers av 645 at \$6.75, 3 do av 680 at \$6.75, 2 do av 665 at \$6.65; to Kull 7 steers av 814 at \$7, 1 bull weighing 920 at \$6, 5 heifers av 632 at \$6.50; to Hammond, S. & Co. 2 cows av 925 at \$3.75, 2 do av 955 at \$4.25; to Mich. B. Co. 1 bull weighing 1050 at \$6, 12 do av 562 at \$6.50, 12 do av 530 at \$6.30; to Mich. B. Co. 1 steer weighing 920 at \$7, 1 bull weighing 1760 at \$6.50; to Applebaum 1 heifer weighing 710 at \$6.50, 2 cows av 770 at \$5.15; to Cooke 7 butchers av 736 at \$6.40; to Snow 24 stockers av 448 at \$6.25.

Allington sold Ludwig 18 stockers av 700 at \$6.

Weeks sold Newton B. Co. 13 butchers av 807 at \$6.

Same sold Bresnahan 6 heifers av 505 at \$6.

Allington sold Marx 3 cows av 937 at \$5.60, 5 steers av 780 at \$6.65.

Veal Calves.

Receipts, 385. Market steady. Best, \$11@12; others, \$6@10.75.

Spicer & R. sold Parker, W. & Co. 1 weighing 250 at \$10, 2 av 135 at \$12, 4 av 150 at \$12, 3 av 206 at \$10, 3 av 156 at \$11, 1 weighing 170 at \$12, 2 av 160 at \$12, 2 av 205 at \$11.50; to Mich. B. Co. 1 weighing 340 at \$8; to Goose 2 av 290 at \$10.25.

Haley & M. sold Applebaum 3 av 325 at \$8; to Newton B. Co. 3 av 185 at \$11, 5 av 160 at \$11.50; to Parker, W. & Co. 1 weighing 300 at \$8, 9 av 180 at \$12; to Goose 7 av 210 at \$10; to Mich. B. Co. 4

av 220 at \$9, 2 av 240 at \$10, 5 av 165 at \$11.

Weeks sold Burnstine 4 av 155 at \$12, Bishop, B. & H. sold Ratner 1 weighing 370 at \$6.50, 3 av 210 at \$9.50; to Parker, W. & Co. 13 av 160 at \$12, 6 av 210 at \$11.50, 1 weighing 160 at \$12, 5 av 165 at \$11.50, 1 weighing 130 at \$11.50; to Goose 14 av 250 at \$6.75, 7 av 225 at \$9.75, 6 av 165 at \$11.50; to Thompson Bros. 6 av 155 at \$12; to Mich. B. Co. 1 weighing 220 at \$9, 4 av 155 at \$11; to Sullivan P. Co. 9 av 150 at \$11.50.

Receipts, 5995. Market steady with Wednesday. Lambs 50@75c lower than last week; sheep 25c lower. Best lambs, \$7; fair to good lambs, \$6.50@6.75; light to common lambs, \$5@6.25; fair to good sheep, \$3.75@4.25; culls and common, \$2@3.

Spicer & R. sold Hayes 13 sheep av 60 at \$4, 41 lambs av 60 at \$6.50, 16 do av 65 at \$5.50; to Sullivan P. Co. 52 do av 75 at \$7, 37 do av 60 at \$6.25; to Costello 24 do av 50 at \$6; to Hayes 8 do av 45 at \$5.25; to Mich. B. Co. 27 sheep av 100 at \$4.25, 88 do av 76 at \$6.75; to Thompson Bros. 40 do av 65 at \$6.25; to Young 85 do av 70 at \$6.65, 10 do av 45 at \$5.50.

Haley & M. sold Bray 143 lambs av 75 at \$7, 96 sheep av 105 at \$3.75; to Mich. B. Co. 17 do av 125 at \$4; to Newton B. Co. 62 lambs av 73 at \$6.65, 60 do av 65 at \$7, 18 sheep av 80 at \$3.75, 4 lambs av 80 at \$7, 25 do av 58 at \$6, 91 do av 75 at \$7, 34 sheep av 115 at \$4.

Bishop, B. & H. sold Sullivan P. Co. 22 sheep av 100 at \$4, 14 do av 90 at \$3, 12 lambs av 48 at \$5, 31 do av 67 at \$6.50; to Newton B. Co. 147 lambs av 65 at \$6.65, 4 sheep av 105 at \$3.75; to Hayes 31 lambs av 55 at \$6, 32 do av 57 at \$6; to Thompson Bros. 61 sheep av 90 at \$3.60; to Calkins 37 do av 85 at \$3; to Nagle P. Co. 26 do av 100 at \$3.75, 69 lambs av 65 at \$6.75, 17 do av 75 at \$7, 39 do av 75 at \$7, 6 sheep av 115 at \$4; to Mich. B. Co. 28 do av 90 at \$4, 24 do av 100 at \$4, 62 lambs av 73 at \$6.50, 19 do av 60 at \$7, 14 do av 50 at \$6, 40 do av 65 at \$6.75, 15 sheep av 110 at \$4; to Sullivan P. Co. 15 lambs av 55 at \$5.75.

Roe Com. Co. sold Barlage 40 lambs av 60 at \$7, 15 sheep av 90 at \$2.50, 41 do av 105 at \$4; to Hammond, S. & Co. 30 lambs av 85 at \$7.

Hogs.

Receipts, 2491. None sold up to noon, prospects as follows:

Range of prices: Light to good butchers, \$8.75@8.80; pigs, \$8@8.25; mixed, \$8.75@8.80; heavy, \$8.50; stags one-third off.

Bishop, B. & H. sold Parker, W. & Co. 600 av 180 at \$8.80, 310 av 170 at \$8.75, 475 av 180 at \$8.70, 210 av 150 at \$8.50.

Roe Com. Co. sold Sullivan P. Co. 250 av 190 at \$8.80, 100 av 160 at \$8.75.

Spicer & R. sold Hammond, S. & Co. 64 av 190 at \$8.80, 120 av 160 at \$8.70.

Haley & M. sold same 210 av 190 at \$8.80, 140 av 165 at \$8.70.

Friday's Market.

August 30, 1913.

Receipts this week, 1441; last week, 1316; all grades steady.

We quote: Dry-fed steers and heifers, \$8@8.25; steers and heifers, 1000 to 1200, \$7.50@7.75; do. 800 to 1000, \$6.15@7.50; grass steers and heifers that are fat, 800 to 1000, \$6.75@7.50; do. 500 to 700, \$5.50@6.50; choice fat cows, \$6; good do., \$5.50@5.75; common do., \$4.50@5; canners, \$3@4.25; choice heavy bulls, \$6@6.25; fair to good bolognas, bulls, \$5.50@5.75; stock bulls, \$5@5.25; choice feeding steers, 800 to 1000, \$6.50@7.25; fair do., 800 to 1000, \$6@6.50; choice stockers, 500 to 700, \$6.25@6.95; fair do., 500 to 700, \$5.25@5.75; stock heifers, \$5@5.25; milkers, large, young, medium age, \$6@8; common milkers, \$4@5.50.

Veal Calves. Receipts this week, 633; last week, 539; market steady. Best, \$11@12; others, \$8@10.50.

Sheep and Lambs.

Receipts this week, 4693; last week, 5559. Market steady at Thursday's opening. Best lambs, \$7.75; fair to good do., \$7.25@7.50; light to common lambs, \$5.50@6.50; fair to good sheep, \$4@4.50; culls and common, \$2.50@3.25.

Hogs.

Receipts this week, 3229; last week, 2633. Market steady. Range of prices: Light to good butchers, \$9@9.10; pigs, \$9; light yorkers, \$9@9.10; heavy, \$8.75@9; stags one-third off.

D. B. Zimmerman, of Pennsylvania, the largest individual operator in cattle in the United States, whose purchases in recent years in Mexico and in Texas have run upwards of 100,000 head, is a leading bull on the future of the market. That probably explains his extensive purchases. He bought 60,000 Mexican cattle last spring and dipped them in Texas to kill the splenic fever tick and later shipped them to pastures in Kansas and South Dakota, bulk to the latter state. "Cattle are not going to be cheap in the United States for another decade at least," Mr. Zimmerman remarked at Chicago the other day. "In my home state, Pennsylvania, hardly a farmer raises a steer calf but every fall and spring thousands of them go into the markets to buy thin steers to feed. They're the fellows, along with tens of thousands of other farmers east of the Missouri river, who are creating high cattle prices. They will not raise a few cattle of their own. The western range production is short. It's going to be shorter this year than last and another year we will see the most acute beef shortage this country has ever had. Free meats from South America are not going to affect the American cattle growers' market. South America has not the surplus supply which would be required in face of our growing population, to effect a decline in the prices for our range and corn-fed beefs."

Veterinary.

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

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

Indigestion—Impure Blood.—I have a five-year-old horse that I bought last spring; he was thin and out of condition; our local Vet. treated him and he thrived nicely, but he has three bunches on hind quarters as large as my hand, one on each hind leg, situated about six inches above hock, and one on hip. These bunches are not tender, do not appear to bother him, but I would like to know how to remove them. G. F. B., Kibbie, Mich.

—Apply tincture iodine to bunches three times a week, give him 1 dr. potassium iodide and 2 drs. Donovan's solution of arsenic at a dose two or three times a day. It is possible that the bunches should be cut out.

Partial Dislocation of Stifle Joint—Spinal Paralysis.—I have a three-year-old colt that is wrong in both hind legs. When backing out of stall drags feet on floor and appears to be partially paralyzed. When traveling on road makes false motions and when stepping over in stall blunders and staggers. This ailment, whatever it is, has been gradually developing for the past three or four weeks. D. S. H., Kibbie, Mich.—The colt may have spinal paralysis developing or it may be the stiffness in stifle joints. Apply equal parts turpentine, aqua ammonia and olive oil to stifle and spinal column three times a week. Also give 1 dr. ground nux vomica and 1 dr. potassium iodide at a dose in feed two or three times a day. If you were sure that there is no partial slipping out of place of stifle cap, it would be needless to treat stifle joint.

Navicular Disease—Stifle Lameness.—I have a mare 18 years old that has been lame 12 months in right fore foot. By reading books and studying symptoms I am led to believe she has navicular disease; besides, our local Vet. says she has. Have blistered her twice. I also have a four-year-old colt that has stifle lameness. He shows it most when stepping over in stall or backing. M. S. G., Vassar, Mich.—Apply equal parts tincture cantharides, aqua ammonia, turpentine and raw linseed oil to stifle every two or three days, and you may use this same liniment for coronet every four or five days.

Sidebone.—I would like to know what can be done to relieve a horse of lameness which is caused by sidebone. I am quite sure this bunch on quarter is causing lameness. W. S. R., Freesoil, Mich.—When I meet with a case of this kind in my practice, I cast the horse, give him an anesthetic or apply cocaine and remove the lateral cartilage with as much care as possible, then allow the wound to heal. This operation, if well done, is usually successful. If you have not already done so, apply one part red iodine mercury and four parts fresh lard to bunch once a week.

Indigestion.—I have a horse that is thin and weak, caused, I believe, on account of his having poor teeth. K. S., Scottville, Mich.—Your horse suffers from chronic indigestion and will be benefited by giving him a tablespoonful of ground ginger and a tablespoonful of bicarbonate soda at a dose in feed three times a day.

Barren Mares.—I have two mares which are about 10 and 12 years of age that I wish to raise colts from, both of them come in heat regularly, remain in heat several days, but fail to get with foal. These mares have been bred several times to a horse that is a fairly sure foal getter. P. H., Bellaire, Mich.—It is possible that neck of womb is closed, which if opened just before she is mated, will get with foal. I would also suggest that you inject her with a solution made by dissolving 2 ozs. of cooking soda in three pints of tepid water and wash her out when she comes in heat, or at least a few hours before she is served.

Rheumatism.—I have several pigs three months old that commenced going a little lame in hind legs four weeks ago; their joints swell, they walk stiff and their nearly all have good appetites. Can you tell me what this ailment is and what to do for them? F. L. J., Charlotte, Mich.—Feed your pigs less corn, more oats, oil meal, tankage, etc. Give each of them 5 grs. sodium salicylate at a dose twice a day. Rub their joints once a day with the following liniment: Mix equal parts aca ammonia, turpentine and olive oil together. Your pigs should be kept dry, allowed to exercise and kept out in the fresh air and sunshine, at least a part of the day, especially morning and evening.

Chronic Garget.—I would like to know if garget is an infectious ailment, if allowed to go on and become chronic is it curable? W. E. T., Rockford, Mich.—Congestion of the udder (garget) is met with in heavy milkers before and after calving and is greatly aggravated by exposure to storms or the udder meeting with bruises or such exciting causes. Garget is also brought on by infection through teat opening or from sudden changes of food fed them soon after calving.

ing. Give her 2 drs. potassium iodide at a dose night and morning and apply one part carbolic acid and 15 parts olive oil. It is needless for me to say how much it benefits a case of this kind to foment the udder with hot water 30 or 40 minutes three times a day. The cow should be milked clean. Bacterial infection through teat opening produces garget and the ailment is communicated from one cow to the other, usually by the milker.

Hog Cholera.—We have had some young pigs die in the last week and are at a loss to know the cause. First symptoms are stiffness, walking lame and before they die have a rash on belly. Our local Vet. was at a loss to know what ailed them and wrote to Lansing, giving symptoms, and they replied, stating it was cholera. Having had several sick ones I am inclined to believe it is a contagious or infectious trouble and I am anxious to know what to do. N. Y. E., Clarkston, Mich.—You had better place this matter in your Vets. hands and he will no doubt give them vaccine serum treatment, which is the best.

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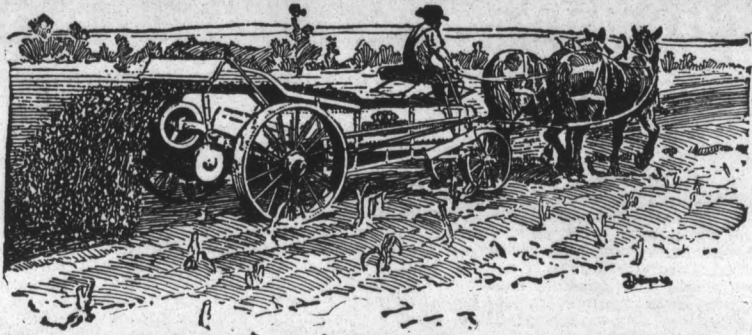
We get the top price on consignments, make liberal advances: ts and prompt remittances.

Daniel McCaffrey's Sons Co. PITTSBURG, PA.

Reference, Washington Trust Company, or any bank in City

FARMERS—We are paying 5c above the Official Detroit Market for new-laid eggs shipped direct to us by express. Write us for information. It will pay you. American Butter & Cheese Co., 31-33 Griswold St., Detroit, Mich.

HAY Potatoes, Apples. We pay highest market price for car loads. The E. L. Richmond Co., Detroit, Mich. Responsible representatives wanted.



Best-Hated of Farm Tasks

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

Compare that old-fashioned method with the spreader way. You pitch the manure into the spreader box, only waist high, drive out and the machine does all the rest.

And, far more important, if you buy an I H C spreader one ton of manure will go as far as two tons spread by hand, with the same good effect on the soil, and it will all be spread evenly.

I H C Manure Spreaders

are farm necessities. The man who uses one will get the price of it back in increased crops before its newness has worn off.

I H C spreaders are constructed according to plans in which every detail, every feature, is made to count. They are built to do best work under all circumstances, and to stand every strain for years. They are made in all styles and sizes, for small farms and large, low and high machines, frames of braced and trussed steel. Uphill or down, or on the level, the apron drive assures even spreading, and the covering of corners is assured by rear axle differentials. In all styles the rear axle is placed so that it carries near three-fourths of the load. This, with the wide-rimmed wheels with Z-shaped lugs, makes for plenty of tractive power. Winding of the beater is prevented by large diameter and the beater teeth are long, strong and chisel pointed.

A thorough examination of the I H C spreader line, at the store of the local dealer who sells them, will interest you. Have him show you all these points and many more. Study the catalogues you can get from him, or, write the

International Harvester Company of America

Chicago

(Incorporated)

U S A



BEST EVER SULKY AND GANG PLOWS



Do the Best Work at the Least Cost Per Acre

The above illustration shows the BEST EVER SULKY completely turning under a large crop of weeds.

The bottoms of the "BEST EVER" are so hung and the frame so perfectly balanced that an even furrow is maintained at all times.

The moldboards are so shaped that every furrow is completely turned over and thoroughly pulverized.

LIGHT DRAFT The "BEST EVER" is the lightest draft plow built. The wheels and tongue run straight down the furrow like a wagon. The wheels do not dig into the furrow walls nor does the pole run at an angle as on other plows.

EASE OF OPERATION The bottoms are raised and the frame leveled, all by one easy footlift operation. All landside friction can be quickly overcome by eccentric washer on rear furrow wheel. No bolts to bother with.

DURABILITY THE BEST EVER PLOWS are made of the best steel and malleable iron. Wheels are of steel with dust proof caps. Oil but once a season. All shares of our famous ACME STEEL.

ACME STEEL is the only perfect plow steel made. It makes the only steel shares that are positively guaranteed against breaking in the field or in retreating. Anybody can easily retemper them any number of times. Keep them hard and sharp all the time. They scour perfectly, lighten the draft, plow more acres per day and plow them better.

"Acme Shares Don't Break"

Write today for FREE ILLUSTRATED BOOKLETS on BEST EVER PLOWS and ACME STEEL SHARES

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Please mention the Michigan Farmer when you are writing to advertisers and you will do us a favor.

The Destructive Raspberry Anthracnose.

THE raspberry anthracnose is a disease which attacks most all of the bramble berries, and is just as big a proposition in the raspberry business as its name. When translated into common, everyday language this trouble is called raspberry scab, and it is probably the scabbiest scab a-going because there is nothing that man can do which will eradicate it. It is of such importance in the raspberry business that it is the limiting factor in the age of the raspberry plantation and is also a most proficient destroyer of good crops of fruit.

The disease is of a fungus nature but can not be controlled by spraying. Spraying apparently has no effect on it at all. It manifests itself by the whitish spots or blotches so commonly seen on the canes of raspberries and blackberries. Where each one of these blotches are the cambium layer of the cane, the part through which the sap flows, is entirely destroyed. Therefore an anthracnose spot acts as so much restriction to the sap and when the spots become numerous the restriction becomes so great that the top starves and the fruit and leaves dry up. The anthracnose is the most common cause of the fruit drying up just before ripening time. At that time there is a great demand for moisture to properly ripen the fruit, and the cane in this diseased condition cannot supply it. In moist seasons the trouble is not as great because in such times, especially if there is plenty of rain at ripening time, the canes are more sappy and are able to supply enough sap, in spite of the anthracnose, to mature the crop.

The methods of control are only palliative ones. They just delay the final conquering of the plantation by the disease. Cultivation and pruning are the main methods of control. Cultivation will serve to keep the moisture in the ground and in that way help to prevent the drying up of the fruit and foliage. Cultivated plantations seldom suffer as badly as from the effects of this trouble, although they may have it as badly as those not cultivated. Pruning out the old canes immediately after fruiting and burning them up will take away a great source of infection to the remaining new canes. The old canes are generally pretty well covered with the anthracnose, often quite badly at the lower part of the cane. It is also good policy to cut out the weak and spindly new canes so that all of the sap and food material will go to the remaining canes. This disease has made the old practice of leaving the old canes until spring a thing of the past when efficiency in raspberry growing is considered. The good it does by keeping the new canes from being broken down by the snows is more than overcome by the infection they get from old canes.

The black raspberry is more seriously troubled by this disease than any of the other brambles. It has limited the average life of a black-cap patch to about seven or eight years, and in most of the places where this fruit has been grown for canning purposes it has been discarded and one of the purple caps grown instead. Some varieties of black-caps are more susceptible to it than others. Cumberland, one of the best black-caps grown, has as its chief objection its susceptibility to this trouble. Gregg is also quite susceptible to it, while Black Diamond seems to be fairly immune to it. Kansas and Eureka are also good in that respect.

While the red raspberries, blackberries and purple-caps are attacked by this trouble they are more immune to it than the black-cap, and it is not often that the fruit will dry up before ripening on account of it. However, the disease will greatly shorten the lives of plantations of these fruits and will often cause the fruit to be small.

The only way to grow black raspberries now is to renew the plantation about every eight years. If possible put the new planting in a place not occupied by raspberries before and have them as far from old patches as possible. In many places where black raspberries have been grown extensively it is hardly possible to get a good patch started. The suggestions regarding cultivation and pruning should be diligently followed throughout the life of the patch. In many cases an application of manure will help considerably. Grow the varieties most resistant to the disease in your locality.

The purple-cap, the substitute for the black-cap for canning purposes, is a cross between the red raspberry and the black raspberry. It is a very vigorous

grower and prolific bearer. The fruit is large but somewhat soft and therefore will not do for shipping purposes. It is, however, the ideal berry for home and canning purposes. It resists the anthracnose quite well. The most popular variety is the Columbian. Cardinal and Haymaker are also good varieties.

Van Buren Co. FRANK A. WILKEN.

RENOVATING THE STRAWBERRY BED.

Mowing and burning of the vines is recommended by many growers as the best method of treatment for an old strawberry bed that is to be held over for another year. There may be conditions where this method may be advantageously followed. This is especially true where there are insect pests to contend with, for many will be destroyed in the fire. Moreover, the treatment will leave the ground nice and clean and free from all refuse that might interfere with cultivation.

To secure a good job conditions must be favorable. The material must be dry, and a brisk wind blowing to make quick and effective work, that the plants may not be injured by the fire. But ideal conditions for effective work are not often to be had and this is one reason why I have never made this method a practice. Another reason is that I object to the destruction of so much material that can be turned to so good an account by returning it to the soil to increase the humus therein.

The method followed by us is to mow off the vines and then give the field a good raking with a horse hay rake. This will remove the greater share of the rubbish—leaves, runners, and straw, or whatever material was used for a mulch. This is drawn off and stored in piles to be used again as a winter protection for the strawberry plants. This done, the ground is given a good working with a horse cultivator, the ground being made fine and mellow to a depth of several inches. Where the hedge row plan of culture is practiced, practically the entire surface of the field may be treated in this manner; but with the matted row plan the ground between the plants that comprise the row must be loosened and firmed with a hoe. Under proper conditions the old plants will send out new roots in abundance and likewise leaves and runners. These last should be removed as they appear if the best results are to be secured. With right care, good tilth and abundant fertility in soil, a strawberry bed will often give nearly as good results the second year as the first. But where grass and weeds are allowed to creep in and rob the plants of sunlight, moisture and plant food, it is not often that the second crop pays.

In maintaining the earth mulch over the entire surface of the field, the horse weeder may be made to play an important part. A mere scratching of the surface soil is all that is necessary to prevent the crust formation; this the weeder teeth will do to perfection, working close up to the base of the plants. This tool is especially serviceable where the method of planting is other than the hedge row system. Since a large area may be covered quickly with this tool a considerable saving of time and labor is effected.

M. N. EDGERTON.

NEARLY FOUR MILLION TREES IMPORTED.

According to figures compiled by the federal quarantine board of the Department of Agriculture, 3,779,041 growing trees and 15,040 pounds of tree seeds were imported into the United States during the past fiscal year. The trees include valuable species that do not grow in this country and stock which can at present be bought more cheaply abroad than at home. The tree seeds imported are largely for the purpose of reforesting land, though in a number of cases they are used in ornamental planting on individual estates.

Besides more than seven tons of tree seeds, many thousands of pounds of seed of perennial and annual plants, bulbs, and fruit stock, as well as ornamental shrubs, are imported. The greater part of the tree seeds, or more than 7,000 lbs. comes from Germany. France led in the number of growing trees sent here, with a total of 1,782,255, Germany second with 849,245, and Holland third, with 690,632. Thirteen other countries, including India, Japan, and Australia, also sent trees to the United States.

Practical Science.

LABORATORY REPORT.

Applying Lime After Plowing Clover Sod.

I have a few acres on which there is just a fair stand of clover that I am turning under, but believe that the soil is slightly acid and that I can get a better future crop of clover by correcting this acidity by sowing from 300 to 500 lbs. of air-slaked lime per acre. In turning under the clover the roots are at or near the surface and what I want to know is, will the lime sown on this plowed ground and harrowed in have any detrimental effect on the clover or the nitrogen stored in its roots? I want to sow the lime but hesitate to do it for the reason that a large part of it will be harrowed right in with the clover roots and a considerable portion reach the clover. Advice on this subject through your paper will be appreciated.

Jackson Co.

P. A. M.

Regarding the question above, will say that we do not anticipate any undesirable results from the treatment with air-slaked lime as proposed. The clover plants will be able to stand quite a severe treatment in this respect and we should not hesitate to go ahead and harrow the lime into the soil.

Ropy Bread.

I am inclosing a bit of bread and some of the flour from which it was made. This bread was baked yesterday. It gets sticky and salve and we cannot eat it, and can smell it all over the house. I have wondered if the flour was not adulterated in some way. Can you analyze it and tell me what the trouble is?

Huron Co.

Mrs. O. T. J.

Regarding the sample of flour, we are unable to find any evidence of any adulteration whatever therein, but we have located the trouble and it is in the bread; not in the workmanship but somehow or other a culture of bacteria has become started therein which causes the condition commonly known among bakers as "ropy" bread. This occasionally happens in a bakery and when it does happen it causes, as you may imagine, very serious annoyance for it spoils the taste of the bread. You can imagine that in a bakery which is supplying the people of a large city to have anything like this happen means not only an inconvenience but serious financial loss as well. In some instances it has become serious enough to completely ruin the trade of a bakery. The only way to remedy the condition is to have a thorough renovation of the bakery and we would suggest in this instance that you thoroughly renovate your pantry and kitchen where you make your bread, that all of your tins be not only washed thoroughly as is your custom, but that these bread tins and bread knives be put into a large boiler, covered with water and thoroughly boiled. It is well to have these utensils, being careful that every single utensil which is used by you in making bread, put into the boiler and boiled for a half hour. The bread board may be included in this treatment if it is small enough so that one side of it may go down into the boiler. Then when this end has been boiled long enough turn it over and allow it to boil on the other side in such a way that the whole bread board becomes thoroughly treated with the boiling water. Remember that simply scalding these utensils will not do. They must be boiled for a half-hour. Then in another pan place all of your dish towels and dish cloth, cover with water and boil in a like manner for a half hour. Then the shelves where your pans are kept and all of the kitchen table and other places where you do your baking and cooking should be thoroughly cleaned and scoured once more. We have no doubt that these conditions are now, as far as the cupboard and tables are concerned all that could be expected but it is our position to leave no stone unturned to cover thoroughly the field and so without any exception we should follow thoroughly the treatment we have herein advised.

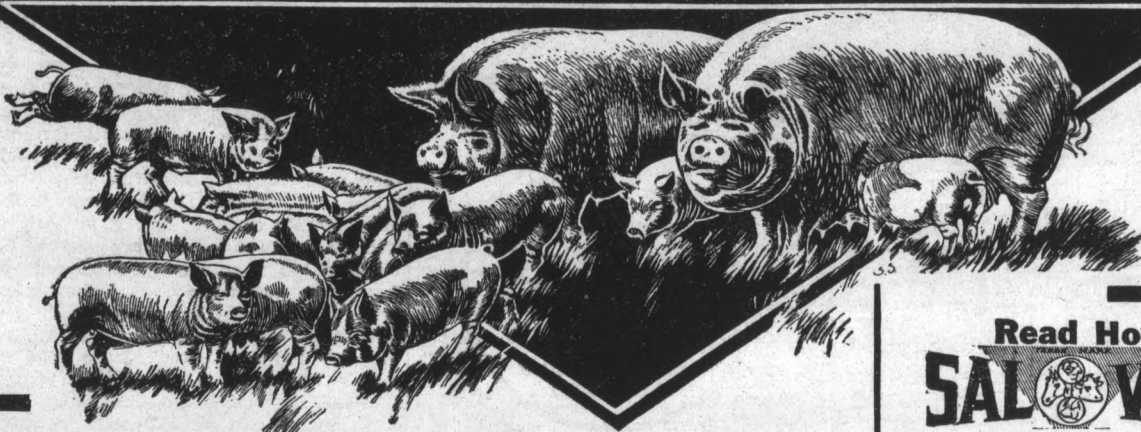
CORRECTION IN FAIR DATES.

The Cheboygan County Fair will be held at Wolverine Sept. 24-25-26, instead of September 17-19, as previously announced.

WANTED.

At once, a few men who are hustlers, for soliciting. No experience necessary. Good salary guaranteed and expenses paid. The work is dignified, healthful and instructive. In writing give references and also state whether you have a horse and buggy of your own. Address Box J. F., care Michigan Farmer, Detroit, Mich.

PROTECT YOUR HOGS FROM DISEASE



I'll Help You Prevent Your Losses

I'll Get Rid of the Worms in Your Stock

I'll Prove It Sixty Days Before You Pay

NOW is The Time for you to get rid of the deadly stomach and free intestinal worms—the pests that sap the strength and vitality of your farm animals, making them easy victims of cholera and other diseases.

Read these Letters. They prove that "a stitch in time saves nine."

"A lot of hogs died in this county from swine plague or cholera. Some of them were within three miles of me, but I have been feeding Sal-Vet and have not lost a single hog."—D. A. ROSS, Kingman, Kans., Breeder of Pure Bred Poland Chinas.

"As the hog cholera is prevalent all through this section, I have been feeding Sal-Vet to my hogs. Since then, I never saw them in better condition, in spite of the fact that all around me the cholera is carrying them off by the hundreds."—W. J. BROOKS, Diggs, Va.

Hogs free from worms are best protected against Cholera and Swine Plague and most apt to recover when attacked. Read the letters in the next column. **Worms are your greatest enemies**—worse than cholera—they are everlastingly stealing your stock profits—weakening your farm animals and keeping them from putting on flesh. And worst of all in times like this when cholera breaks out in your neighborhood, you may lose hundreds of dollars in a few days just because your animals have been robbed of their fighting strength and vitality by worms.



The Great Worm Destroyer and Conditioner

will drive out these pests quick. I'll prove it on your own farm with the money in your pocket. Worms can't live where Sal-Vet is used. It is the best kind of cholera insurance you can find. It will put every animal on your place in a thrifty condition. They'll gain faster—grow into money quicker, make you more profit. Read my offer.

Don't Send Any Money—Just Send This Coupon



S. R. FEIL, Pres.

I'll Feed Your Stock 60 Days Before You Pay

If you will fill out the coupon below—tell me how many head of stock you have—mail it to me, I will ship you enough Sal-Vet to last them 60 days. You simply pay the small freight charge when it arrives. Let your stock run to it freely according to directions and at the end of 60 days, report results. If Sal-Vet does not do what I claim, I'll cancel the charge. You won't owe me a cent.

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THE S. R. FEIL COMPANY, Mfg. Chemists
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ROCK PHOSPHATE

Is endorsed by the leading agricultural experiment stations as the best and most economical source of Phosphorus. It appeals to the intelligent farmer who utilizes nature's abundant supply of Nitrogen by growing legumes and keeping his soil alive with humus.

Increased yields worth \$22.11 was obtained at the Maryland Experiment Station from the use of \$1.96 worth of Rock Phosphate per acre. In the last 5 years of a 10 year experiment at the Massachusetts Experiment Station the use of Rock Phosphate increased the crop yields 45 per cent.

Write us for literature and prices. Mention this paper.

FEDERAL CHEMICAL CO.
GROUND ROCK DEPT. COLUMBIA, TENN.

FARMERS TAKE NOTICE

Be sure and see our exhibit at the Michigan State Fair. Main Building.
THE WING SEED CO., Mechanicsburg, Ohio.

A Watch to Be Proud of for Every Boy Who Wants One



neighbors that you are after a watch you start right away, the sooner you start the sooner you have the watch ticking in your pocket and telling you at a glance the hour, the minute, and the second of the day.

Boys, here is the best chance that ever was offered to get a good time-keeping watch without it costing you a cent. Read this over and then get busy, if you haven't got the watch as good as in your pocket in a couple of hours, it's because you don't want it bad enough.

The watch is the real thing, 16-size, nickel case, stem-wind and set, second hand, fine watch movement, and keeps absolutely correct time. It's fully guaranteed and if you don't hammer tacks with it or take it apart, in fact, if you will treat it as the friend it will prove to you, the manufacturer will keep it in repair for one year without charge. That's fair, isn't it?

Go to three of your neighbors who are not subscribers to The Michigan Farmer, or whose time has run out, tell them that you will have sent to them the Michigan Farmer (the best farm paper in America), every week for a year (52 copies) for only 50 cents. Collect 50 cents from the three of them and send us the \$1.50 you collect, together with the three names and addresses, and the watch will be sent to you at once, post paid.

Easiest thing you ever did. The Michigan Farmer used to be \$1.00 a year and now you only charge 50 cents, (less than one cent a week), and by telling the neighbors that you are after a watch you will likely get the first three you ask. Start right away, the sooner you have the watch ticking in your pocket and telling you at a glance the hour, the minute, and the second of the day.

The Michigan Farmer, Detroit, Mich.

Read How SAL-VET

Stops Losses Among Farm Animals.

"Hog cholera has been all around me and I have not had one sick hog. I cannot praise 'Sal-Vet' too highly, and I do not hesitate to recommend it to all hog raisers." A. O. Kellogg, Troy Grove, Ill.

"Last year I lost all of my hogs from cholera. This fall and winter I have been feeding 'Sal-Vet' and lost none." Cleveland Rice, Secot, Ohio.

"My neighbors, who have NOT fed 'Sal-Vet' have all kinds of trouble with their hogs—many of them getting lame and stiff, and would not eat. I think 'Sal-Vet' is great stuff." Harry E. Townley, Cambridge Springs, Pa.

"I have fed 'Sal-Vet' to my sick hogs and found it very beneficial. Before your remedy arrived nine of my hogs died. Since feeding the preparation I lost but one more and the balance are in fine hearty condition." (Signed) Joseph Walter, Route No. 2, Box 33, A, Freeburg, Ill.

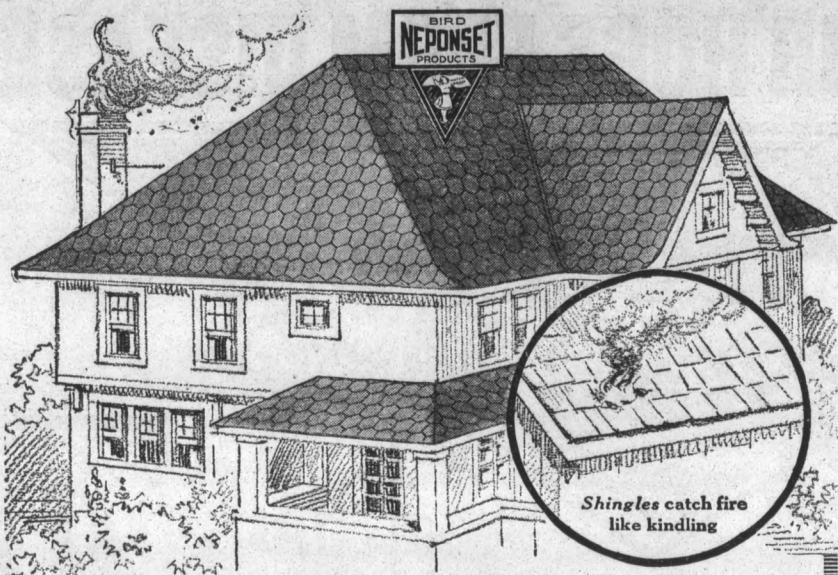
"I have just finished feeding the 200-lb. barrel of 'Sal-Vet.' My hogs are the only ones left in this immediate locality. I haven't lost one." James F. Martin, Little York, Ill.

"When I received your SAL-VET my hogs were very unthrifty—but they did not stay that way long after feeding SAL-VET. I never had pigs do so well. They were soon in top condition. My horses also improved on it fine. It sure does get rid of the worms. Please send me another barrel at once." D. P. Copp, Carrol, Iowa.

"I had a lot of sick hogs and I lost five of them. I began feeding them SAL-VET, my losses stopped and the hogs soon got into a fine, healthy condition. 'SAL-VET' did the same for my sheep and horses and several of my neighbors have had the same experience with it." V. P. Underwood, Roachdale, Ind.

PRICES:

40 lbs., \$2.25; 100 lbs., \$5.00; 200 lbs., \$9.00; 300 lbs., \$13.00; 500 lbs., \$21.12. Special discount for large quantities. No order filled for less than 40 lbs. on 60 days offer. Never sold in bulk; only in Trade-Marked 'Sal-Vet' Packages. 60 day trial shipments are based on 1 lb. of Sal-Vet for each hog or sheep and 4 lbs. for each horse or head of cattle as near as we can come without breaking regular packages.



This Roof is an Insurance against Fire

Yes—it is very attractive. And it's "spark-proof" too.

Stained shingles "look" nice—but no better than NEPONSET Proslate Roofing. And here the comparison ends. Let burning embers fall on a shingle roof and your house—your home—goes up in smoke. NEPONSET Proslate resists fire—there's no danger of the roof catching fire from flying sparks—if your roof is NEPONSET Proslate.

It's the acknowledged standard high-grade prepared roofing. In attractive shades of red and green. Costs less than shingles. Its protection from fire alone is worth its entire cost.

NEPONSET

Waterproof Building Products

Roofings

NEPONSET roofings are a fire protection, leakproof and long lived. Anyone can lay them. NEPONSET Paroid Roofing is for general use. NEPONSET Proslate Roofing is an ornamental roofing for dwellings. Attractive colors.

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If NEPONSET Waterproof Building Papers are built into walls and floors, the building will be warmer, will cost less to heat and will last years longer. Recommended by architects, engineers and building owners everywhere.

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ROOF-FIX Cures Roof Troubles

and keeps them cured. Cost slight. One coat does the work. In black and red. Ready for use. Absolutely guaranteed to do the work. Write at once for the free Roof Book. Address G. E. CONKEY CO., 3339 Woodland Ave., Cleveland, Ohio.

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BARGAINS. Best strains S. O. W. Orpington reduced prices, also half grown cockerels and pullets. Mrs. Willis Hough, Pine Crest Farm, Royal Oak, Mich.

Prize Winning Barred Rock, R. I. Reds, Mammoth Pekin and I. Runner ducks. Stock for sale. Eggs \$1.25, \$3. per set. Utility \$5 per 100. ELMWOOD FARM, R. R. No. 13, Grand Rapids, Mich.

COLUMBIA Wyandottes, Winners at Chicago, Grand Rapids, South Bend and St. Joseph. Stock and eggs. RICHARD SAWYER, Benton Harbor, Michigan.

SILVER LACED, golden and white Wyandottes. Eggs for hatching at reasonable prices; send for circular. Browning's Wyandotte Farm, R. 30, Portland, Mich.

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E. P. Rocks, R. I. Reds, and S. O. W. Leghorn eggs for sale. 15 for \$1.35, for \$1.50; 50 for \$2.50. OOLON C. LILLIE, Coopersville, Mich.

White Wyandottes—Noted for size, vigor and egg production. 1913 circular ready in February. A. FRANKLIN SMITH, Ann Arbor, Mich.

DOGS,

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

FOX AND WOLF HOUNDS

of the best English strains in America; 40 years experience in breeding these fine hounds for my own sport. I now offer them for sale. Send stamp for Catalogue. T. B. HUDSPETH, Sibley, Jackson Co., Mo.

30 Days FREE TRIAL
Full Set of Empire Steel Wheels
Let us send you a full set of Empire Steel Wheels for a month's trial free. Just send us measure of wagon skids—we'll send wheels to fit. Put them to every test, for every kind of hauling; prove for yourself that they are better, stronger, easier running than any wheels you ever used—they are!

End Drudgery of High Lifting and Save 25% of the Draft
Will make your old wagon good as new. Soon pay for themselves in saving of repair bills. If not all we say, return—trial costs you nothing. Get our big free book and free trial offer; also special offer on Empire Farmers' Handy Wagons—20 styles. **EMPIRE MFG. CO., Box 89A Quincy, Ill.**

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At a Saving of \$25 to \$40
Phelps exceeded all previous efforts with his classy Split Hickory Storm Buggy. You can ride in comfort—free from wind, cold, or storm. Double strength glass windows—rubber cushioned—can't rattle—can be opened on four sides quickly. Guaranteed 2 years—30-Day President Road Test Free. 157,000 Phelps customers to date. Mail postal today for money saving offer. Address **H. C. Phelps, Pres., The Ohio Carriage Mfg. Co., Station 89 Columbus, Ohio**

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Wood Mills are Best. Engines are Simple
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THE FREELAND CORN CRIB
is absolute proof against rats, mice, birds and fire. Made of perforated galvanized sheet steel, is practically indestructible. Cures corn perfectly. Easy to erect. Write for illustrated catalog of sizes, prices and all details. **Pioneer Manufacturing Company, Middlebury, Indiana.**

Poultry.

SELECTING AND CONDITIONING WINTER LAYERS.

Careful selection of the fowls that are apt to be kept for winter egg producing, and getting them into condition to produce a maximum yield of eggs, will more than repay one for the time and trouble taken. Not only is it advantageous from many points of view, but it is necessary if one expects a satisfactory yield of winter eggs. The principal reason for making early selections is to get uniform fowls of the right age at the right time, but it is also necessary that they be properly fed and cared for so that they will be brought to the laying point at the earliest possible date.

No pullet can be expected to mature at an early period if she is improperly fed and cared for. If the pullets are given free range they will gather bugs, worms and green food and get sufficient exercise to keep them healthy, but it is a serious mistake to think that because a young chicken picks up a great deal while roaming about the farm it does not need other food. Animal foods and succulent green food must be supplemented by some form of grain to produce satisfactory results.

It is surprising the quantity of food that young pullets will consume. It is almost impossible to overfeed them, for, unlike the hen in laying condition, they take on fat very slowly. If, however, they are improperly fed and do not obtain a proper variety of food they will not grow, either in size or weight, and will be very slow in coming to the laying point.

On the farm where pullets have plenty of range, hopper feeding gives very satisfactory results; that is, certain food is put into a self-feeding hopper where it is always available. In this way the chicken can choose at various times the kind of food it prefers, and eat as much as it wants at any time of the day. This method of feeding saves a great deal of time—an important item when other farm work is pressing. If, however, there are several large hoppers, but little attention now and then is needed to keep them thriving.

Experience in Feeding.

Various rations have been found satisfactory for these young fowls. Of course, these rations must be regulated in quantity and variety to suit local conditions, and changes may be necessary as the supply of natural foods on the range increases or diminishes. It is the writer's experience with White Plymouth

side. Frosts and chilling winds retard their development and cause a serious setback from which they are slow to recover. The habit of roosting outside can easily be broken up by chasing them into the coop just at dusk and shutting them in until morning. With this repeated for a few nights the majority of them will give no further trouble.

As cold weather approaches they must have plenty of nourishing food and must be pushed in every possible way so that they will begin laying before severe weather begins. Any pullet that does not begin laying before the first extremely cold weather will seldom lay many eggs during December and January. It is better to get the pullets in condition early in the season if we are working for a supply of eggs when top-notch prices are ruling.

New York.

W. MILTON KELLY.

POULTRY FEEDING.—III.

No one ration is best for all feeders, but some may be considered more economical than others—more easily obtained or more palatable to the fowls.

The ration may be considered in three separate parts, because it is usually fed in these parts, viz., the grain, the green feed, and the mash.

Green stuff is chiefly valuable as a medicinal food. It greatly aids digestion and keeps the fowls in a healthy state. Some green food must always be given if the best results are to be expected.

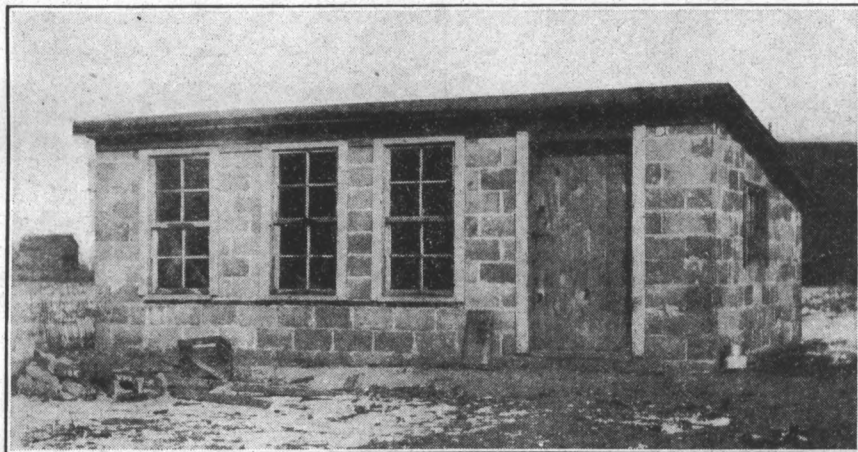
Concentrated foods should mainly be fed because of their richness in protein, which element is generally lacking to a greater or less extent in the common feeds raised on the farm.

About four gallons of water is used by 100 hens per day. This, coupled with the fact that a large percentage of a fowl's body is water, likewise the egg, shows the great necessity of supplying chickens with plenty of water.

Grit is absolutely necessary for the proper grinding and assimilation of the food eaten by chickens, especially all kinds of grains.

In order to have your chickens do their best it is of prime importance that you supply them with some kind of mineral matter, since mineral matter is needed for the formation of bone and egg shells. It is to supply this need that bone meal is added to most rations. About one pound of oyster shells contains sufficient lime for the shells of seven dozen eggs.

The following are a few sample rations for the feeding of fowls for egg production or growth. They have all been thoroughly tried out and have always given the best of results: The grain portion consists of 20 lbs. cracked corn and 20 lbs. wheat. The dry mash portion of 6 lbs. corn meal, 6 lbs. wheat middlings, 3 lbs.



A Snug and Substantial Poultry House of Cement Block Construction.

Rocks that equal parts of wheat and cracked corn, thoroughly mixed together, makes an ideal ration for pullets that have free range. If the range is small or overcrowded at times when bugs and worms are not plentiful, it is advisable to supplement the corn and wheat with a dry mash composed of 5 lbs. of beef scraps, 2 lbs. bonemeal, 1 lb. charcoal, 5 lbs. corn meal and 5 lbs. wheat bran well mixed and fed in hoppers.

An abundant supply of fresh, clean water must always be available, and kept in a place where the sun cannot shine upon it. An impure water supply is a frequent source of disease. As the pullets approach the laying point a plentiful supply of oyster shells must be kept before them. Ordinarily fowls on a farm will be able to pick up sufficient grit, but when they are not able to get outside it is well to supply some sharp, clean grit.

As the weather changes in the fall it is poor policy to let the pullets roost out-

wheat bran, 5 lbs. beef scrap and 1 lb. of oil meal. This ration has a nutritive ratio of 1:4.8. Some kind of green food should be fed in connection with it.

A balanced ration for 100 hens, weighing about 400 pounds, is the following: 6 lbs. cracked corn and 6 lbs. wheat for the grain portion. For the dry mash, 2½ lbs. bran, ½ lb. alfalfa meal, 2½ lbs. corn meal, 1 lb. oil meal, 1½ lbs. shorts, ½ lb. beef scrap and 1 lb. coarse bone meal.

Here is another good one: 2 lbs. of cracked corn, 2 lbs. wheat and 2 lbs. oats. For the dry mash, 3 lbs. bran, 2 lbs. shorts, 2½ lbs. corn meal, 1 lb. alfalfa meal, ½ lb. beef scrap and 1 lb. coarse corn meal.

It is advisable to always feed some green food in connection with these rations.

New York.

F. W. KAZMEIER.

Ducks are seldom troubled with lice, neither do they have cholera or roup.

Farmers' Clubs

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

THE CLUB VACATION.

This is vacation season for many of the local Farmers' Clubs, a considerable number of which do not hold meetings during the midsummer months. Much of the future success of the Clubs which observe this practice depends upon the zest with which the members return to the work after this vacation period. If the members of every Club which has taken a vacation during the midsummer months return to the work with the determination to make the remaining months of the year more profitable from a Club standpoint, than those of the previous year, then that Club is bound to be benefited rather than harmed by this vacation period.

One of the very best ways of making the work of the Club more progressive and valuable is to broaden its scope, interest more members, particularly the younger people of the community, and if practicable do a little missionary work in the surrounding community by way of promoting the organization of other Clubs.

Such a determination on the part of not only the Clubs which have missed meetings during the summer months, but all others as well would give the Club movement a new impetus in Michigan. May we hope for such results this year.

CLUB DISCUSSIONS.

A "Home-Coming" Meet.—The home-coming meeting of the Columbia Farmers' Club met at the spacious home of Mr. and Mrs. C. H. Hewitt with a good attendance. In spite of the heat a good time was enjoyed by all, guests being present from Detroit, Lansing, Jackson, Napoleon. The meeting was called to order by President Palmer and all joined in singing from the Club song book. Roll call was responded to by "Reminiscences." Mrs. Flora Vining read a paper, "Social Reciprocity Between City and Country," discussion led by Miss Mae Crego and many others. A recitation, "Her Sermon," by Mrs. Diana Palmer was enjoyed by all. "How and Why of Crop Rotation," by Walter Reading, discussion led by Sumner Ladd and George Friedrich was interesting to all. A recitation entitled, "Company," by little Donald Rece, was enthusiastically received. Miss Charlotte Koch, of Jackson, rendered an instrumental solo, "Arbutus," and responded to an encore. The guests were welcomed in a pleasing manner by Dr. Palmer, who was responded to by Mrs. W. F. Raven, of Lansing. The Club was then entertained by a reading by Mrs. Mattie Lowry, "The Deacon's Story," with encore "The Old Oaken Bucket." All joined in singing some old songs led by the Loomis-Ball quartet with Mrs. Sumner Ladd at the piano, closing by singing "Home Sweet Home." The Club adjourned to meet with Mr. and Mrs. Frank Ball, September 13.

Have Talk on Co-operation.—The August meeting of the Wixom Farmers' Club was entertained by Mr. and Mrs. Charles Kinney at their home in Milford. A large crowd gathered there, over 200 being present. Dinner was served on the shady lawn; also the program was given there, which was very interesting. The vocal and instrumental music was fine, and much enjoyed. Mr. N. A. Clapp, of Northville, gave an interesting and instructive talk along the lines of co-operation. He spoke of the beneficial influence the Club had in a community, also gave the number of Clubs now doing good work and their membership.—Mrs. R. D. Stephens, Cor. Sec.

The Retired Farmer.—The August meeting of the Charleston Farmers' Club, held at the home of Mr. and Mrs. Olin Bera, was very largely attended. The usual picnic dinner was finished with ice cream making such a bountiful feast that there was a pleasing discomfort felt among the guests for a part of the afternoon. The gentlemen spent a part of the afternoon playing baseball, while the Junior members took an interesting trip to the Galesburg creamery. Mrs. A. P. Simpson occupied the chair for the meeting in the absence of both the president and the vice-president. Marion Barber and Ella-bell Talbot each gave a recitation and William Anderson read an interesting and appreciative story. The Club also sang a couple of songs from the Club song books. Two topics were discussed, the first, "What a retired farmer and his wife may do," was under the leadership of O. F. McClary, who gave a very interesting talk. Mrs. J. L. Bateman, who was to have led the subject, "Some Common Inconveniences of the Farm Home," turned it over to her daughter, Miss Erdie Bateman, who read a very well prepared paper on the subject. The Club will have their September meeting at the Palmier home. The topic chosen for discussion at that time was, "Meals for Threshers." A number of ladies were appointed to discuss the question.

Grange.

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

THE SEPTEMBER PROGRAMS.

State Lecturer's Suggestions for First Meeting.

Opening music.
Fall handling of crops: 1. Corn. 2. Potatoes. 3. Beets. 4. Fruits.
Music.
My favorite poem with some account of its author.
What can a farm boy do, while attending school, to earn money toward a high school or college education?
What can a farm girl do, while attending school, to earn money toward her high school or college fund?
Summary of good points made in this program.

AMONG THE LIVE GRANGES.

Another Union Rally.—Trent Grange, of Muskegon county, and Ashland Grange, in Newaygo county, have a good habit of holding their summer rallies together. This year it was at Sand Lake, in Muskegon county—a gem of a blue-eyed sheet of water, set down in native woods which contains so many varieties of trees and such an abundance of choice plants that it would constitute a veritable botanist's delight. The atmosphere of the day was most happy in every way; children abounded on every hand and were attentive listeners during the program in the pavilion; the dinner was standard Grange fare—what more could one ask? After the short program all repaired to a nearby open pasture where two games of ball were played amid close following and increasing enthusiasm by the crowd of spectators. In the men and boys' game, Ashland won at a game of "indoor ball," but in the game of "hard ball" which followed, the Trent girls won in a closely fought contest which stood 19 to 20 at the last. It was very exciting and surely no "champions" on famous diamonds ever put more energy and devotion into their playing than did the Trent and Ashland girls.—J. B.

Oneida's Fourth Annual Picnic.

The annual picnic of Oneida Grange, of Eaton county, held on the Spiritualist camp grounds at Grand Ledge, Aug. 19, was a success in every way. Good weather, a great picnic dinner, an excellent program and clean, wholesome recreation were contributing factors. The outstanding feature of the program was State Master Ketcham's address in which he spoke for better farming, better roads and better living. Marketing table supplies by parcel post, direct to the consumer, he urged as the best way for the farmer to secure the profit to which he is entitled and for the consumer to reduce the cost of living. He held that the great problem of the American farmer is to stop waste, and that we must wake up if we would save the fertility of the soil. The new law requiring that all goods be marked true to name, he declared, will give Michigan products the high standing they deserve. Our business life, however, must not interfere with the best work we have to do, that of raising better boys and girls. Too often they are left to just "grow up," thus falling into undesirable company, contracting bad habits and lacking the strength to overcome them. He appreciated the presence of the young people and pronounced them of the right kind for postponing rowing on the river until the completion of the program.

Near the close an intermission was called to clear the floor for two drills. In the first of these 16 young men put on P. of H. and emblematic characters in a creditable manner. Their Grange "yell" let all know that Oneida patrons have plenty of life. A fancy drill was then given by young ladies dressed in white and wearing blue bonnets and aprons. This was immediately followed by a parasol drill in which the parasols bore the stars and stripes.

The remainder of the afternoon was given over to visiting, rowing and the enjoyment of refreshments at the bazaar. The dance in the evening was attended by a large crowd of refined people and was declared the most enjoyable and successful of these annual affairs.

The entertainment committee did some effective advertising of the lyceum course which this Grange will conduct during the coming winter. A course of five numbers has been arranged for at a cost of \$1 for season tickets or \$1.35 by single admissions. The Grange is putting on this course for the benefit of the community and hopes to have it well supported.—Mrs. Claude H. Barton, Cor.

Massachusetts Defends Birds.—For four years Massachusetts State Grange has had a committee on the protection of wild birds, whose duties have been the support of legislation and proposed legislation for their protection and to oppose such measures as seek to extend the open season and to remove protection in any way. The committee has been active and exerted strong influence in behalf of the recently enacted McLean-Weeks law passed by Congress. In seeking to arouse public sentiment in various ways, the committee has urged that bird study be given a place on the literary program of every Grange at least once a year and as much oftener as circumstances will permit, recommending that stereopticon views which in most states can be procured through the state ornithologist, be utilized wherever possible.

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| ☐ Plan Book of Houses & Barns | ☐ Roofing, Siding and Ceiling |
| ☐ Wire and Fencing | ☐ Plumbing & Heating |
| ☐ | ☐ Paint |

My Name is _____

My Address is _____

County _____ State _____

R.R. _____ P.O. _____