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## Insuring Next Year's Wheat Crop

By I. J. MATHEWS

IN the various farm surveys that have been conducted in different parts of the United States by farm bureaus and others interested in more profitable farming, it has been proven beyond a shade of doubt that every stock farm must produce some so-called cash crop in order that a reasonable profit be insured. Warren found that dairying was most profitable when the price received from the sale of a cash crop equalled about one-third of the total income. Wheat has been found to be a most satisfactory cash crop on both stock and stockless farms because it fits very well into a three-year rotation and because it does not conflict with corn or oats. Each year many of these wheat fields return no profit and others do not break even and there are usually just three or four reasons that may be assigned for the failure. Chief among the causes of a failure of a wheat crop are: 1. Wheat is planted on a field whose soil is not adapted to it or whose fertility is so low that the crop cannot thrive. 2. The seed bed is poorly prepared and the plants do not get a good start in the fall. 3. Seed planted is unacclimated, full of weed seeds and put so far below the surface that all its strength is dissipated in getting to the surface. 4. The wheat is planted too early and the Hessian fly gets in its destructive program.

### Fertility Requirements of Wheat.

It is not always possible for us to know exactly how much fertility there is in a given soil but we do know how much a crop of wheat removes from the soil and it cannot remove something that isn't there. It is known definitely through analyses that an acre producing thirty bushels of wheat borne on one and one-half tons of straw loses 48 lbs. of nitrogen, 9.2 lbs. of phosphorous, 23.9 lbs. of potash and 6.5 lbs. of calcium or lime if the entire crop is removed. It will be noticed that a comparatively small amount of lime is removed so that this element is not often the limiting factor in wheat production. The comparison may be made more striking by the statement that a four-ton crop of alfalfa removes a little more than twenty times as much lime as does the above mentioned crop of wheat.

As to wheat soils, wheat can grow on almost any soil provided it contains the right fertilizing elements and in justice it may be said that fine grades of wheat are often grown on light as well as heavy soils; thus it will be seen that type of soil does not affect either quantity or quality of wheat so long as plant food and moisture abound. It will be seen that the wheat crop removes considerable amounts of

nitrogen, phosphorous and potash but since most soils contain adequate quantities of potash and the straw, being largely potash, usually remains on the farm this element is rarely wanting in such quantities as to cut down the wheat yield. On a stock farm where legumes are grown and the fields manured, wheat may be grown for many years without the addition of commercial fertilizers but grain farms face an altogether different situation. On these farms it ultimately becomes necessary to replenish the waning supply of natural fertilizing elements with commercial fertilizers.

The element most likely to be lacking is phosphorous since so much of this is lost through selling the grain

be had, some wheat raisers prefer to use it as a top-dressing rather than plowing it under.

### A Firm, Moist Seed Bed Essential.

On farms where a four-year rotation of clover, corn, wheat and oats is used, the wheat is often put in after the corn with only a disking of the corn land. That this cuts down the labor in the short run, but cuts down the crop in the long run, is the opinion of many who have tried it, as well as the sowing of wheat on land that has been plowed. The idea in putting a wheat field into condition for seeding is to pulverize the soil and conserve the moisture.

Where the field is plowed, no consideration should be turned over-

is dependent upon the food that can only get in in solutions, makes us solicitous about every means of conserving the ground water.

In some soils it would be folly to plow three days and then smooth the field down, for by that time it would be very dry. The better way is to plow until about three or four o'clock in the afternoon and then hitch onto the harrow or roller and compress the soil that has been turned over during the earlier part of the day.

After plowing, the clods must be broken up and a fine mellow seed bed prepared. If the soil was rolled immediately after plowing, the smoothing harrow will make the seed bed required and it may do better work if preceded by the disk harrow. Once with the disk and twice with the smoothing harrow will put the seed bed in good condition if it was not too dry and cloddy on the start.

### Planting the Seed.

Better results have been secured through drilling as compared with broadcasting the seed. The drill will cover all the seed, putting it at the depth desired rather than at various depths. Right here the question might be asked, "How deep should wheat be planted?" It is surprising to find that more than half of the wheat sown is put down twice as far as it should be to make the most of its opportunities. It is no uncommon thing to see wheat sown three and four inches deep, yet while three inches may be justified in a light soil that is very dry, four inches is a depth that none but the strongest wheat kernels will be able to rise up through. Where the seed bed is moist and mellow, from one-half to three-

quarters of an inch is plenty, but where the soil is lighter and dryer, it may be sown one and one-half inches deep.

The point is this: The wheat kernel contains enough stored food to start the tiny plant, enable it to reach the surface of the ground and maintain itself until it has a root system started. If we compel it to go through three or four inches of soil before it reaches the light, we have cut down the root system that can be pushed out. In so doing, we eliminate all

possibilities of that quick early growth that is so desirable when wheat is planted as late as it must be to avoid attacks of the Hessian fly.

### Plant Only Good Wheat.

A prominent farmer hereabouts always says when addressing a gathering of his fellows: "There is nothing that will get a farmer as quick as to plant poor seed." The more I reflect on that statement, the more I am of the opinion that it is strong, but not (Continued on page 171).



The Only Difference in Treatment of the Soil is that on the Right a Light Application of Commercial Fertilizer was Used.



One of the Essentials in Successful Wheat Growing is the thorough Preparation of the Seed Bed.

into which it largely enters. Either raw or acid rock phosphate is used with good results where it can be applied with stable manure or when a green crop is turned under. Where neither of these practices are pursued, the best results have been obtained by applying at seeding time from two to three hundred pounds of a fertilizer containing of available elements, two per cent nitrogen, eight per cent phosphoric acid, and two per cent potash. Where well rotted stable manure is to

er without using the harrow. When the soil is so dry as it usually is when wheat land is plowed, unless the harrow is used soon, the furrow slice is aslant and this allows both the soil and the sub-soil to dry out. The soil in the furrow slice dries out and becomes cloddy with the consequence that it cannot be packed until the freezes and thaws of winter have broken down the large clods of dirt. This means a great loss of moisture and the knowledge that all growth taking place in a plant



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DETROIT, AUGUST 26, 1916

### CURRENT COMMENT.

**County Agent Work.** The state report of county agent work for the period from June 5 to July 1 shows that in the twenty-five counties in which county agents are working there is a constantly increasing demand for their services. During this period the county agents spent a total of 137 days in their offices and receive 820 personal calls from farmers, besides answering 1,057 telephone calls and writing 1,735 letters. They also spent a total of 389½ days in the field, making 1,334 farm visits and conducting 176 demonstrations at which there was a total attendance of 906 farmers. One hundred and five other meetings were attended by the county agents, at which there was a total attendance of 5,632. During this period the county agents also wrote 77 articles on local problems which were published in the local papers, and distributed 1,908 bulletin on subjects of local interest.

The activities of the county agents cover a wide field. Aside from the answering of calls, the making of farm visits, the holding of demonstrations and other activities above mentioned, meetings have been held looking toward the federation of existing farmers' organizations to work with the farm bureau. In some counties considerable time is spent in testing samples of soils for lime requirements. In a number of counties the county agents have spent some time looking up marl deposits and in making arrangements with owners to make them available for those needing this soil amendment in nearby territory.

Crop demonstrations are being conducted alongside public highways in several counties, the crops being grown under the direction of the county agent. In some cases crops which are new to the community are used in these demonstrations, and in other cases, notably with potatoes, demonstrations are being conducted to show the comparative value of good and poor seed, to determine the fertilizer requirements of the crop on given soils, etc. In fruit counties some time is being spent by the county agents in investigating orchard diseases and conducting orchard demonstrations.

The matter of the improvement of live stock is being investigated by the county agents in as practical a manner as possible in the different sections. Farm management is being emphasized, particularly in calls on men who have not before sought the aid of the county agent and are not familiar with the demonstration work which has been conducted along this line by county agents and state leaders. Conferences are being held with the officers of the farm bureau and of the county institute societies with the idea of out-

lining a more profitable line of work for the farmers' institutes during the coming season. Marketing problems are being given attention in all counties where county agents are working, and investigations are being made regarding the cost of various farm operations, such as drainage for example.

These examples taken from the report in a single county illustrate in a general way the scope of the work which the county agents are doing in the twenty-five counties now organized. In every county other local problems are included and given such a share of the county agent's time as their importance seems to warrant. These facts relating to county agent work in Michigan are here presented, to the end that farmers in counties not now organized may become familiar with the work as it is being developed in the state, and thus be prepared to make the greatest use of the county farm bureau when the opportunity is theirs.

**Our Live Stock Possibilities.** One cannot travel the length of Michigan's two great peninsulas without being deeply impressed with the great possibilities of the state in the matter of live stock production. Large areas of fertile cut-over lands are lying unimproved which might at a comparatively small cost be made available and profitable for live stock production. Wherever an enterprising owner has brushed and burned and seeded these cut-over lands of the better quality, whether pine or hardwood lands, they produce pasture in abundance and furnish the best of summer feed for either cattle or sheep. In most cases where these lands have been so treated the owners or operators have depended upon purchasing feeding stock from the western ranges, running them through the summer and selling them to southern Michigan feeders for finishing in the fall. While this has been on the whole a profitable method of procedure, yet where a portion of these lands are brought under the plow and some winter feed is grown, flocks of breeding ewes and herds of cows could be cheaply run and the net receipts from live stock greatly increased.

Conditions surrounding the live stock industry have undergone great changes during the memory of our older generation of farmers. The western ranges have been developed to their maximum capacity within that period. These ranges are now being rapidly broken up, and the available supply of feeding stock from this source is yearly becoming smaller. The great area of unimproved land within our state could easily be made to take the place of the western ranges so far as our live stock industry is concerned. Unquestionably these lands could be made to produce the feeders to be finished on the improved farms of southern Michigan, and with profit to those who develop them to this extent.

Present indications point to a continued era of high prices for meat products. A recent investigation made by the Department of Agriculture indicates that the high prices everywhere prevailing for meat products are due to the fact that meat production has failed to keep up with the demand. The primary reason given for this apparently great shortage in meat products is that the economic level of the average citizen has been raised to a point where he demands a large amount of meat in his diet. This fact—and it undoubtedly is a fact—coupled with the fact that our population is increasing more rapidly than is our live stock production, would seem to insure that prices for meat animals of all kinds will continue to be high for a long period, in fact, it is probable that cheap meat as we now understand the term, will never again be the rule in this country. Of course, with meat production returning a greater profit than ever before, farm production along this line will naturally be increased in the readjustment of the live stock industry

so that present high prices may not always obtain, but it is comparatively certain that meat prices will never again be low.

There is undoubtedly opportunity for an increase in this department of production upon the average Michigan farm, but there is a still larger opportunity in the great area of undeveloped lands which could be cheaply improved to the point where they could produce an abundance of pasture, and thus take the place in the economy of meat production in Michigan which the great free ranges of the west have formerly occupied and with great profit to the state's agriculture.

### THE MICHIGAN STATE FAIR.

(Continued from last week).

The Michigan State Fair has received an average of \$1,562 annually in state aid since its organization.

In comparison, the Illinois State Fair has received state aid during the last ten years totaling \$425,207; Indiana State Fair \$200,000 in last ten years; New York State Fair \$47,500 in 1914; Ohio State Fair \$300,000 in 15 years, and Wisconsin State Fair \$270,000 in ten years.

The Michigan State Fair was held in Detroit in 1849, at Ann Arbor in 1850 and in Detroit from 1851 to 1863. The fair was held at Kalamazoo in 1863 and 1864, Adrian in 1865 and 1866, Detroit in 1867 and 1868, Jackson in 1869 and 1870, Kalamazoo in 1871 and 1872, Grand Rapids in 1873, East Saginaw in 1874 and 1875, Jackson in 1876 and 1877, Detroit in 1878, 1879 and 1880, Jackson in 1881 and 1882, Detroit in 1883, Kalamazoo in 1884 and 1885, Jackson in 1886, 1887 and 1888, Lansing in 1889, 1890, 1891 and 1892, no fair in 1893, Detroit in 1894, Grand Rapids in 1895, 1896, 1897, 1898, 1899 and 1900, Pontiac in 1901, 1902, 1903 and 1904, and at Detroit since 1905 when the Michigan metropolis was made the permanent location.

#### Some New Educational Features.

The Michigan State Fair each year is enlarging upon its educational work, and an effort is made to offer helpful information to all who attend the exposition. A Better Babies' Contest is held annually and mothers are instructed as to how best to care for their children. Lectures are given by men who are authorities in foods, health and physical culture. Body building contests are an innovation which are expected to result in the improved physical condition of hundreds of residents of Michigan.

The Michigan State Fair's "Short Course in Agriculture," which is conducted annually and is absolutely free to boys from every county in the state, has proved to be a success. This free trip to the fair enables our future citizens, both tillers of the soil and townsmen, to get a better insight into the many problems they will face later on in life.

This broadening influence gained in a visit to the fair for a growing young man cannot be overestimated. He sees the advance made in the scientific construction of automatic machinery, not only sees it, but what is more interesting to him and more profitable, he has its principles explained to him. The boys of the State Fair school are also shown the various methods known to science for the improved care of live stock. Soil management is demonstrated to them so that they may get an early perception of the possibilities of scientific agriculture. Good roads lectures are also given the boys so that they may grow up with an appreciation of what improved highways mean to the country. In short, if the boys are to be agriculturists they will be better ones for their trip to the fair; if they take up city callings they will have a better idea of what constitutes good citizenship.

Forthwith are outlined some of the limitations under which this free trip to the fair can be gained. From those so qualifying at the regular county

eighth-grade examination, five are selected by the commissioner of schools to come before a further board of examiners, consisting of the county commissioner of schools, the master of the Pomona Grange of the county, and the president of the farmers' institute society. Fifty per cent is counted on the best eighth grade examination and 50 per cent on the best examination on the other subjects submitted by the latter named board.

It is becoming more apparent every year that state fairs are carrying a work which is of great value to thousands and thousands of people. A state fair is far more than a place to decide between the relative merits of this and that sample of the state's products. A state fair is not merely a catalogue; it is an advertisement of the state, a symbol of its greatness and an illustrated lecture on the variety of its resources and the quality of its enterprises.

### HAPPENINGS OF THE WEEK.

#### Foreign.

**The European War.**—Active fighting progresses on all fronts. The French and British forces have made further advances on the west, the Russians are fighting desperately but successfully in the east, the Italians are moving forward in the campaign to capture Trieste and in the Balkan States the central powers are to be attacked from Salonika. The Germans are making desperate efforts to regain territory lost to the British and French in the west. But the fierce attacks in the Somme region and before Verdun have all been repulsed with heavy losses and the line of the Allies has been pushed forward a short distance in the former theatre, enabling the British to gain further advantages in the attack upon Martinpuich. In the east the Russians are now apparently centering their efforts upon the new drive toward Kovle. Berlin admits that the Czar's troops have crossed the Stokhod river while Petrograd reports that they have pushed beyond the stream and taken important heights on the road to their objective. In the Carpathians the Russians are in sight of the Hungarian plains and the contest for the crest of the mountains is now on. The offensive outside Salonika is now developing along a front of 150 miles from Lake Presby to Lake Doiran. Both sides claim minor advantages but no effort of first importance has been made. The Italians are organizing their forces on the new territory recently captured and are pushing forward preparations for the campaign against Trieste. It is reported that the Austrian garrisons in Albania and Montenegro are in a weakened condition and that roving bands are robbing the natives, taking life and destroying property. British troops have demoralized the Turkish forces that recently made attacks east of the Suze Canal. Two British light cruisers, and a German submarine were sunk and another submarine rammed and possibly sunk in the North Sea Sunday night.

#### National.

The great railroad controversy which for the past fortnight has been hanging as a cloud over the country, remains unsettled. The brotherhoods and the employers have both sent delegations to Washington to confer with President Wilson regarding their grievances and the chief executive has asked that the men be granted their eight-hour day and that the other questions in dispute be left to an impartial commission to consider and report later. The representative of the railways have refused to accept this arrangement after which the President notified the roads that if the strike was called the government would operate the lines by retaining members of the brotherhood after the present officers are removed. It is believed that the railway owners will offer a counter settlement plan.

Grange campaign throughout the state international institute of agriculture at Rome places the estimates of the world's wheat crop 25 per cent below the crop of last year.

As an offset to the order granting college men the privilege to return to their respective colleges from military duty on the Mexican border, a plan has been suggested of having schools for the soldiers at the camps. As the requirements for drill include only the morning hours, there will be ample time for study and classes.

On Sunday the churches of Oakland county opened the centennial celebration of the settlement of the county. The first settlement was made on the present site of Rochester in 1816.



## Improving a Rundown Soil

By L. R. LUTHER

FEW people realize the value of lime in run-down soil. It is easy for them to see and understand the need of clover and many practical farmers know that they are having a hard time to get a good stand. This is usually blamed on the weather, the farmer saying: "Oh, well, the season was not right." As a matter of fact, in many of these cases the soil is not right. It is true that the season may have much to do in causing the failure of any crop, but usually a poor stand of clover is due to sour ground, or, as we say, acidity of the soil. There is but one means of quickly correcting this acidity, and that is by the addition of lime. Most land here in northern Indiana which has been run down needs at the least two tons of lime per acre. That lime is needed in many fields is evidenced by the growth of sorrel. Where clover does not catch and sorrel springs up, the soil is undoubtedly sour and needs lime. These fields which are deficient in lime should not be planted to a crop which requires lime, such as wheat or legumes.

The farm which the writer has kept in close touch with, for several years, offers a good illustration of what lime and clover will do for a run-down soil.

A man in the banking business secured 330 acres of land in northern Indiana. This land was previously owned by his father who had rented the farms to tenants. The crops was the only source of income to the owner as no stock was kept on the farms. Any person who has seen this plan worked out on any farm will know the result before reading farther. There can be but one result if this plan is followed continuously for a number of years; poor soil and run-down land is inevitable. Well, this farm was no exception to the rule. After continuous cropping for a number of years, the land came into the possession of the present owner. He was a young business man and his experience in banking had taught him to expect good interest on an investment. He began applying business methods on the farms to make them pay interest on the investment. The farms were connected, and two sets of buildings were on the land. The farms being close to town, the banker spent his time before and after banking hours managing them. He made a study of how to improve the soil and finally decided on liming the ground and then sowing clover. Furthermore a good rotation was decided on as that was realized as important. Lime and clover, with a good rotation, was his slogan and it brought results.

The rotation of a certain field which the writer has watched closely has been: 1, corn; 2, corn; 3, clover, (sowed in corn at last cultivation). This hay was made and the fall clover plowed under for wheat, then the field was limed and seeded down again to clover. This year we made that hay, and it could hardly be cut with a common mowing machine. I should be afraid to estimate the tons per acre harvested off that field, for my readers might not believe it. This was a rotation which was not studied out from any scientific standpoint, but it added something to the soil and brought results. There was just enough timothy sown in this last crop to hold up the clover nicely. The hay was as thick as it would stand and about eighteen inches high.

The building up of this land is brought more forcibly to one's notice because an adjoining farm has been allowed to run on in the old way. This farm, just over the line fence, is a splendid example of what steady cropping with no stock will do for the land. The maiden lady owning this farm lives there alone. Although the farm can hardly be paying the taxes, she continues to keep it because it is

the old home place. This is the same sentimental reason why many old run-down farms are kept at an expense. This one has been continuously cropped for about fifty years. During this time there has been very little clover raised and absolutely no manure put on the land. In the opinion of the writer, it speaks exceptionally well for the land that it will now raise anything.

An old farmer living near rents this wornout place by the field. He has several boys of good size, and by extremely hard work, he manages to make a little money. However, he has finally come to realize the folly of trying to raise crops continuously where nothing is added to the soil. He has said that this will be his last year trying to take something from land which has nothing to give.

In conclusion, then, let me insist that to get big crops we must have

ing, the quack grass in the fence row stands nearly waist high.

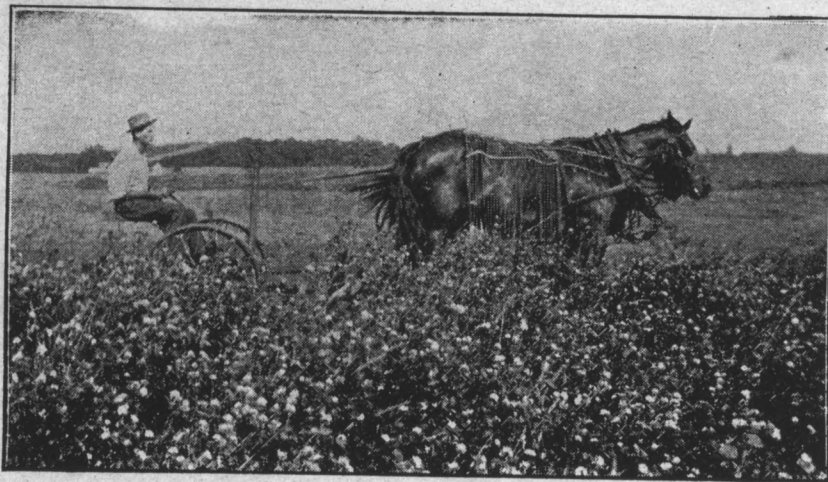
Mr. Armstrong says that he has done this before and his method never fails; there are several other bad spots of quack grass on the farm and he promises us another demonstration next year.

Since all methods for the destruction of quack grass require more or less time and labor, we are of the opinion that the method above outlined is especially desirable as the unusual crop of wheat is ample reward for the effort expended in preparing the seed bed. Different soils may require different treatment, but on this class of soil we have an example that is most convincing.

Otsego Co. G. F. DE LA MATER.

### THE GOOD FARMER.

A good farmer should never depend upon his neighbor for what he can, by care and good management, raise on his own farm. He should not beg fruit when he can plant or graft. He should



Heavy Crop of Hay Grown on Limed Field.

clover and to get big clover we must add lime to the soil. Also let us remember that it is not enough to raise clover and take off the hay but we must turn a crop under occasionally.

### ERADICATING QUACK GRASS.

Quack grass is one of the worst pests that the farmer of Michigan has to contend with in the shape of weeds; it is to be seen in nearly every locality, and where it grows a full crop of anything else is denied the farmer, consequently its destruction is of paramount importance and while many farmers have successfully subdued it a new triumph is always of interest.

We have in mind the experience of Mr. A. W. Armstrong on a farm in Otsego county, owned by Mr. A. B. Comstock. When Mr. Armstrong took charge of this farm a little over a year ago, the quack grass had a pretty good start, one small field being abandoned because of it. The soil being clay loam and fertile, the grass grew very rank entirely smothering anything else that was planted. When the grass had a good start in the early summer of 1915 it was plowed under, thus serving the double purpose of catching it when its strength was in the top and at the same time supplying a crop of green manure; following this, as fast as it showed signs of life it was worked thoroughly, first with the disk and then with the spring-tooth harrow.

As a result of this relentless working, by the first of September the quack grass was pretty sick and an excellent seed bed had been prepared for wheat; this was sown as thickly as was consistent with a good crop of grain; the wheat put forth a luxuriant growth and this spring it had the ground completely covered before the grass could get a footing.

A week ago the wheat was harvested and a better crop we never saw produced. We went over the ground carefully and found that there is absolutely no quack grass left; and as a monument to the success of the undertak-

not borrow tools when he can make or buy them, for among the many wastes on the farm, this waste of time is about the worst. In the first place, he has to take time in going to borrow them, and often take valuable time in returning them. Then, there is a waste of the neighbor's time and money by keeping the tools in repair for someone else to wear out, and the only benefit that the lender gets out of it is being called a good neighbor, for, if he has tools to lend he does not need to borrow. Now, we cannot all be independent, but a good farmer will, as fast as he is able, provide himself with suitable farming tools.

A good farmer will never undertake to till more land than he can thoroughly cultivate. It is the aim of many to get as many acres as possible into crops, giving no attention to the way they are put in. For instance, one man will put in 50 or 60 acres of wheat, while his neighbor will put in 30 acres and get as many bushels, and perhaps more. Every farmer should bear in mind that well tilled land is constantly improving, while half-tilled land is getting poorer every day. Among those farmers who strive for the greatest number of acres are mostly found the inveterate tool borrower, for in their strife and worry to get over a large extent of ground they break and use up their own tools, and then apply to the good farmer for the loan of his tools, often returning them, (if as, in many cases the owner does not have to go after them), in a very dilapidated condition. Then the owner must spend his time and money in getting them repaired. The old adage, "A man is known by the company he keeps," may be construed in this case, "A man may be known by the tools he keeps."

Now it must not be inferred that a farmer must not borrow any tools of his neighbor, for sometimes one man does not have the same kind of tool that his neighbor has, and an interchange may be of benefit to both parties at times. But at the time of borrowing have it understood for what length of time you need the tool and

then return it as agreed, and if it is broken or otherwise damaged while you are using it, make it as good as it was at the time of borrowing; and this will cause no ill feeling between the borrower and the lender. The man that returns tools in as good repair as he gets them may be called a just and good neighbor.

D. H. M.

### INSURING NEXT YEAR'S WHEAT CROP.

(Continued from first page.)

strong enough to express the whole truth. Only think of it—the fertilizer in the soil, the work of hauling manure, the care of preparing the seed bed, the lifting, the tugging, the sweating—all these are put at naught by the single false economy of planting poor seed. The best is none too good.

This year I paid five dollars for a bushel of seed corn, the product of years of constructive breeding of a corn grower. My neighbors said I was foolish but when my field is compared with theirs, a different version of the transaction is possible. In exchanging work with one of my neighbors, I have cultivated a field of corn that will be a losing proposition with a single cause—poor seed.

The moral needs no statement. Wheat that has been run through the fanning mill and containing nothing but the choicest and fattest kernels and these entirely free from weed seed is the only kind that is fit to plant. Weeds are poor property, therefore, avoid them. Doesn't it seem ridiculous, however, to find a man saying that he hasn't time to run his seed through a fanning mill to sift and blow out the weed seeds? Economy of the old order that? Wheat produced nearby usually yields better than that imported a considerable distance from a locality where rainfall and climate may be much different. It is good business to patronize the man not far away who secured a good yield this year.

When the English government hired the Hessian troopers to aid her in a fruitless attempt to force into submission the rebelling American colonies, she cursed our land far more by sending the Hessian fly than she did by sending the Hessian soldiers, if the report be true, as history has it, that these soldiers brought this troublesome fly concealed in bales of straw. The foreign soldiers long since departed but the Hessian fly remains to harass the wheat grower by causing the wheat to tremble and lop over before it ripens.

The small fly lays her eggs in the warm part of the early fall. The eggs hatch out and the maggots burrow down on the inside of the leaf sheath where they prepare a nice resting place for winter. This resting place so weakens the wheat stalk that in the spring, the stalks bend over, growth ceases and thus much loss is entailed.

Repeated experience demonstrates that for average years, wheat planted after September 1 in northern Michigan will escape the attack of this fly. Wheat planted after September 20 in southern Michigan, northern Ohio and Indiana usually escapes the ravages of this insect. From this one standpoint alone, planting after the above dates is desirable in most seasons.

Outside of uncontrollable conditions of weather and moisture, the wheat crop depends upon but comparatively few factors. Good seed planted in a firm yet moist seed bed containing ample fertilizing elements almost unfailingly returns an adequate profit if it dodges the attacks of the Hessian fly.

### ALWAYS SIGN YOUR NAME.

Frequently inquiries are received from subscribers who neglect to sign their name or give their postoffice address. Such inquiries are not replied to under our rules. To receive prompt attention the enquirer must sign his name and give his postoffice address. The name will not be published if request for this omission is made.



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Ratkins Seed House, Shenandoah, Iowa

## Farm Notes

### Ground Phosphate Rock and Lime..

What are the advantages and disadvantages of using finely ground raw rock phosphate? Would it be wise to use both the raw rock phosphate and ground limestone on ground to be sown to wheat this fall? Which would be the better to use, magnesian lime rock or the so-called all-lime rock? Lapeer Co. C. H. K.

Finely ground phosphate rock has been quite widely used in connection with stable manure for the maintenance of fertility in soils deficient in phosphorous. Its use has been particularly large in Illinois where this soil fertilization has been found to be efficient in the maintenance of soil fertility on the prairie soils of that state devoted to a crop rotation adapted to the needs of corn belt farmers.

Ground raw phosphate rock is the cheapest source of phosphorous, but the phosphorous content of ground phosphate rock is very largely unavailable for the use of growing plants. When applied to the soil in combination with stable manure or upon plowing down green manure crops on open soils especially rich in their content of vegetable matter, the natural processes of nitrification or decay of vegetable matter gradually converts the phosphorous in the raw phosphate rock into a form which is soluble in the soil water, and it is thus made available for the use of growing plants.

Where immediate results are desired a more soluble form of phosphorous will yield a larger share of results than will the use of raw phosphate rock, and for application to wheat ground a soluble phosphate fertilizer would be more suitable unless the phosphate rock could be applied in connection with stable manure, or as supplementary to a green manure crop.

The important function of lime on most Michigan soils is the correction of an acid condition of the soil which is very common upon the older soils of the state, particularly those of an open character. Lime is also essential as a plant food for many crops, particularly legumes such as clover and alfalfa, but the main reason why clover and alfalfa grow better upon a soil to which lime has been applied is the fact that its use corrects the acid condition into which many soils have gotten, and encourages the growth of the nitrogen-fixing bacteria for which these legumes are host plants, and without which they will not give maximum yields. As to the best analysis of lime used for this purpose, there is a difference of opinion, the consensus of opinion probably favoring a high calcium lime, although a magnesium lime is claimed to be as efficient in neutralizing an acid condition of the soil as is a high calcium lime. On any soil where clover does not grow with uniform success, an application of lime will certainly be profitable, and there would be no better time nor place to apply same than when the soil is being prepared for the wheat crop, since for the best results the lime should be applied upon the plowed surface and thoroughly mixed with the surface soil.

### A SILO ON EVERY FARM.

Practically every farmer has planted crops this year which will furnish more feed if put into the silo than if handled in any other way. In most cases they will also make more money, particularly if the season should be wet, or late, or both, as last year was.

A few statements from farm letters will help tell why our slogan should be "A silo on every farm." Some of them say:

"I never fed any other feed as cheap as silage."

"I wouldn't be without a silo. Mine paid for itself in two years."

"I practically wintered 20 head of stock on 13 acres of silage, and would not have had nearly enough if fed from the field."

A well-built silo of any type will

keep silage well, so the cost of different materials will in many cases decide whether to buy or build, and what type of silo to select. In choosing, low first cost, cheap maintenance, durability, and smooth air-tight wall should be demanded. Ordinarily the more permanent silo should be built.

### LILLIE FARMSTEAD NOTES.

I can now report that my experiment in sowing alfalfa on growing wheat early in the spring is practically a total failure. This was seeded in the spring of 1915 just as we do common red clover. We mixed the seed two-thirds alfalfa and one-third red clover. There was a splendid catch of red clover, also alfalfa. Both plants were in good condition last fall. I expected to have a crop of red clover the first cutting with a good sprinkling of alfalfa, but this spring there was very little alfalfa to be seen. A strange thing happened, however, worlds of alsike clover came in, where it came from I do not know. Take the alsike and the red clover together, we had a wonderful crop, as much or more than two and a half or three tons per acre.

I thought perhaps the alfalfa might come on for a second crop. It has in some instances for other people, but there is no alfalfa except in patches on some side hills. In a few places here the stand is good enough to leave, but over the most of the field there is no alfalfa at all. I must try over again. We will put this field into corn next seeding again with alfalfa in the oats, and if this fails to catch them into wheat and try the whole experiment over again.

We now have three fields of alfalfa, one of them is the Grimm variety and it is the best we have. June grass, etc., don't seem to get into this as it does into other varieties, but this is only two years old, perhaps it is too soon to judge, but it looks as if this variety is best for our soil and other conditions.

If we have any corn this year it has got to grow with the weeds. Now, August 12, it is too late to take the weeds out of corn. Of course, it could be done if we had the help but I do not think it would pay. What I mean is, that the improvement of the corn, if any, would not pay for the labor. It is a case of taking what you can get and hope that next year will bring better returns. This cool weather causes one to doubt somewhat if this corn will mature enough even for the canning factory, but it may. Even if it does there can not be more than half a normal crop. Oats and hay are good. Wheat only fair, the rest of the crops I rather not think about.

Now this abnormal year would hit us hard if it were not for the cows. They go on as if nothing had happened out of the ordinary. They were not discouraged when it rained so last spring that we could not get the corn planted, or the beans. They never noticed that the peas drowned out, but have kept doing business right along as usual and are the one factor that will save the day and keep us from making a sad failure as a business proposition out of the year 1916. That is why I like cows. If crops fail you can buy feed and not be put out of business. They are lots of work but they help to make a more stable proposition out of farming. Dairy farming is the most stable kind of farming one can tie to. I do not except anything. Our cows must eat some poor ensilage this winter that is weedy but they will do it and say nothing, and they will help make both ends meet in a bad year. Many times they will turn loss into profit. They did last year by eating hay that was made unmarketable by getting wet in harvesting. It would have been a total loss had it not been for the cows. Good cows well handled will pull you through many times when there is no hope from any other source.

COLON C. LILLIE.



## Meeting of State Fruit Growers

(Continued from last week.)

OVER seventy sat down at the sumptuous dinner that the ladies of the Grange had prepared and after the dinner another informal meeting was held in the Grange hall. Here as at the other meetings, the subjects of marketing methods and scab spraying prevailed.

Mr. C. B. Cook told the farmers to get right after their problems in both cultural methods and marketing. He said the best way to bring about the solution of these problems was through determination and co-operation.

In answer to a query with reference to the comparative fungicidal value of lime-sulphur and Bordeaux, Prof. Taft said that while Bordeaux was slightly the better fungicide of the two, the economy and ease of use of the lime-sulphur made it the most preferable to use. Thorough and frequent sprayings so as to insure the thorough covering of the foliage and fruit with the spray material would give good results in the control of the scab, even in unusual seasons like the present.

Mr. John Tracy, in charge of the seed distribution department of the U. S. Department of Agriculture, happened to be in Traverse City at the time of the meeting. He was born at Old Mission but left there when three years old. This was his first visit there since 1879. The trip of the State Horticultural Society to the Old Mission peninsula was therefore a sort of home-coming event for him. When called upon for a talk he told of the care he used in getting seed for distribution. Some of it was bought outright and others was contracted for. Samples of seeds were sent in to the department and were thoroughly tested several times before they were finally accepted for use, the tests including germination and growing trials. We can therefore feel assured that the much discussed congressional free seeds are selected with great care and any that our congressman feels fit to send us are real high-grade, fit-to-use seeds.

At the invitation of the Niagara Sprayer Company, five members of the society were appointed to go to New York and inspect the work of the Cornell Experiment Station in dust spraying. These members will report the result of their observations at the annual meeting in December.

After a session of about two hours the meeting adjourned and the return trip to Traverse City was made. The return trip was via the west road and past Bowers Harbor and various points of interest.

The peninsula is about twenty miles long and from one to three miles wide. The land is quite rolling and this, with the great amount of water protection makes numerous excellent fruit-growing locations. The principle crop grown is, of course, the cherry, although there is also a fair acreage of apples. The best orchards are on the upper half of the peninsula and the western side is better developed than the east. While the peninsula is well set to orchards there are still a number of good orchard sites available.

As there is no railroad on the peninsula all of the fruit and other farm products are either hauled to Traverse City by auto trucks or taken by boat. The cartage charge from any point on the peninsula is five cents per crate, whether taken by boat or truck.

While the attendance at this meeting was not as large as at the summer meetings in former years, the meeting was of great value to those who attended. The summer meetings are especially valuable because they give one an opportunity to find out what the other fellow is doing and that the problems and troubles of fruit growing have to be shared alike by all.

The suggestions gained for better orchard management and the realization that all are working for greater perfec-

tion in fruit growing gives one the ambition to tackle the job with new energy.

### TROUBLE DEPARTMENT.

#### A Fungous Disease of Oak Trees.

What shall I do for my oaks? One is three-fourths, one is one-fourth and two others show some leaves withering. This tree began to show signs of withering leaves in the spring and has become seriously affected. I find nothing on them. Is it blight?

SUBSCRIBER.

The sample of oak leaves you enclosed was attacked by a fungous disease called "taphrinose."

This disease is somewhat similar to the peach leaf curl. If the trouble becomes serious several years in succession it may cause the death of the tree but as in the case of the leaf curl, it may be quite serious one year and be practically extinct the year following. This year has been a bad one for curl leaf, and therefore weather conditions have undoubtedly been favorable for the development of this disease on your oak trees.

Where the disease is very serious and the trees valuable, the treatment should consist of spraying as for the peach leaf curl, which is an application of concentrated lime and sulphur diluted at the rate of one gallon to eight gallons of water, or copper sulphate used at the strength of two pounds to 50 gallons of water. The spraying should be done early in the spring before the buds begin to swell.

There is no method of treatment which can be used successfully at this time of the year. As is usually the case with the curl leaf, you will undoubtedly find that hot dry weather will check the disease to a considerable extent.

#### Diseased Snowball Bush.

I have a snowball bush set out in spring of 1915. This did finely in 1915 and so far this summer, but now the leaves are turning black and dropping off. It seems much worse since a recent shower. In action and appearance it resembles potato blight. Is there any remedy?

Washtenaw Co.

C. A. C.

The common snowball bush is extremely susceptible to aphid or plant lice. This insect causes the leaves to curl up and afterwards fall, especially if the plant suffers any from the dry weather. It is probable that this has been the cause of your trouble. Of course, the recent shower would prove more or less beneficial in such a case, but probably it arrived too late and would be beneficial only as it would tend to reinvigorate the plant to overcome the weakness caused by these insects.

Leaves are sometimes also troubled by sun scorch, although not usually the case with the snowball. Rainy weather causing the development of new shoots with tender succulent foliage, followed by a very bright day inducing a rapid evaporation of moisture from the plant causes the leaves to scorch or burn the portion at the tips of the leaves showing this trouble.

Cultivation, watering or any such measure to help the bush replenish the loss of moisture in the leaves will prove beneficial.—C. P. HALLIGAN.

In an investigation made of means for the prevention of lime-sulphur injury it was found that it could be prevented to some extent by a considerable dilution of the solution or by the use of substances that would render the sulphids insoluble. Among those tested were iron, copper, and zinc sulphates, sulphuric acid, and carbon dioxide. It was conceded that self-boiled lime-sulphur is a mixture rather than a combination of lime and sulphur, and that much of the injury attributed to lime-sulphur sprays are due to other causes, particularly to sunburn.

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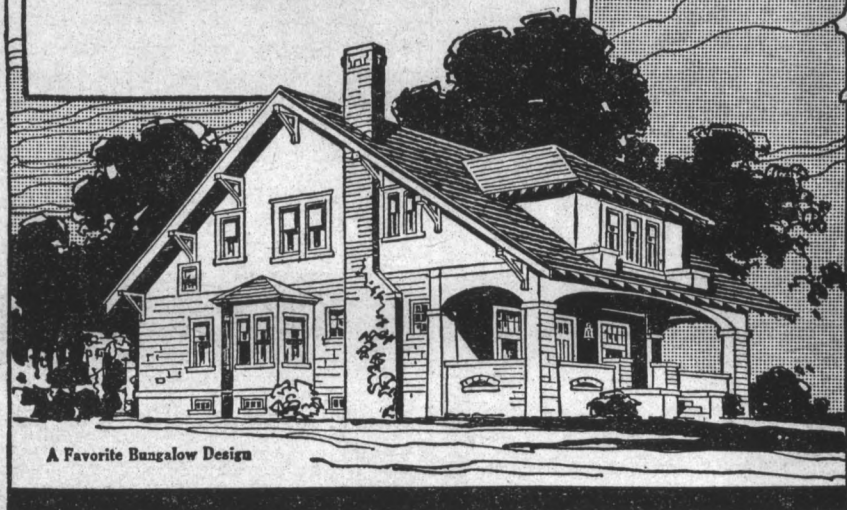
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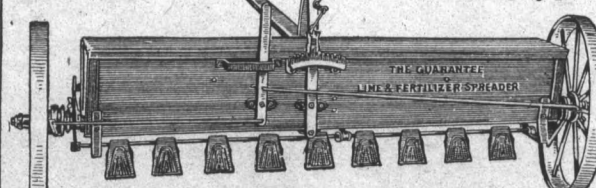
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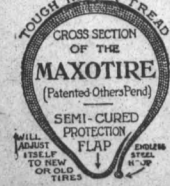
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# Hogs in Midsummer

By N. A. CLAPP

**B**UT very few seem to realize the real magnitude of the swine business in America. Although the prices have been advancing and have reached a very high point, the numbers have been increasing during the last year. At the present time the government reports indicate that there are 68,000,000 of hogs in the country. If those could be fed to an average of 200 pounds each and sold at present prices, at \$10 per hundred, it will be seen that they would bring the enormous sum of \$1,360,000,000. To wipe out this industry would be a national calamity, as the amount of value represents about \$13 for each man, woman and child in the country. At the present time the pork meats are looked upon as a positive necessity, being more economical and palatable than some of the other meats offered in our markets. In order to maintain the swine business at its high point it is a matter of necessity that we devise all the means possible to promote the health of the animals, and thereby insure the perpetuation of the increase and the maintenance of large quantities to meet the demands of the people, not only in our own country, but in those countries which are looking to us for a supply of pork meats.

## Make the Hogs Comfortable.

Under present conditions, after having had a prolonged period of very warm weather, which has not only injured in some places, but destroyed in others, the green feeds which supply a partial subsistence for the pigs, we begin to realize the importance of making the hogs comfortable during midsummer. It is certainly cruel to not provide shade in order that the hogs can be sheltered from the direct rays of the sun. When we consider that the hog carries four-fifths of its entire weight in meat and bone, and that three-fourths of that meat is made up of adipose membrane, which carries a large amount of heat within itself, we begin to realize the necessity of furnishing comfortable conditions for the pigs. It is more cruel to compel the hogs to endure the direct rays of the burning sun in midsummer than to expose them to cold in winter, either of which is not conducive to their health, or not likely to enhance the profits in the business. The largest profits can only be secured by making the hogs comfortable at all times of the year.

Only those who give the matter close attention fully realize the necessity of furnishing the hogs a wallow, or a place where they can get in the water or moist dirt. In order to maintain a low degree of temperature which will enable them to endure the very warm days of midsummer, the wallow should not be exposed to the burning rays of the sun, but should be shaded in one way or another. If it can be furnished under the shade of a tree with over-reaching branches, where there is a chance for circulation of air and the wafting of cool breezes, where the hogs can spend a large portion of the time during the day, such would be an ideal spot. Let us remember that the hogs enjoy roaming in the pasture and picking the fresh grasses and the green feeds early in the morning during the cool of the day when the dew is on the grass, and again at night when the dew is falling and the feed is fresh and tender. They do not venture away from their resting places during the middle of the day.

## External Parasites.

One of the means of producing discomfort with the hogs in the summer time is being infested with external parasites. Some of the teachers and writers of a score of years ago were prone to tell us that lice only infested hogs that were compelled to live in filth and were fed on inferior feeds. At the present time we know full well

that hogs will only have lice when they have been brought in contact with hogs that have them, or are compelled to sleep in nests where those infested have been sleeping. In other words, the hog lice are caught and multiply on the animals in precisely the same manner that they do on other farm animals; therefore, it is a matter of necessity that we watch matters closely and use precaution in preventing our hogs from coming in contact with those which are infested, or compelling them to sleep where they are likely to come in contact with those little tormentors, which not only sap the blood through the skin of the animal, but they cause such an irritation and restlessness which will prevent animals from thriving well when infested with them.

Those external parasites can be got rid of very handily by a little thorough work. It is not necessary to buy expensive patent medicines in order to free the hogs of these little tormentors. If the nests have become infested, clean them out and disinfect with a solution of carbolic acid made of one gallon of water, two ounces of the carbolic acid, well mixed and stirred, and do thorough work in applying the mixture. Then to rid the hogs of the lice and gnats it is not necessary to buy expensive lice powders, but if the hogs are easily handled, take equal parts of kerosene oil and some solid oil like castor oil, mix thoroughly, take a stiff brush and apply the mixture to all parts of the body, and especially around the ears, neck and jaws, sides and flank of the animal; but it is better to go over the animal in order to get rid of stragglers that may be away from their usual feeding point. A thorough application of this mixture will not only destroy the lice, but there will be a sufficient amount of oil remaining on the hair to destroy all the gnats that are likely to appear after the mixture is applied.

## Internal Parasites.

It is well known by good authorities, and those who have given the subject a reasonable amount of study, that the hog is a host for a variety of intestinal worms, for the internal portions of the body seem to furnish breeding places for a great variety of worms. It is doubtful if more than a small percentage of swine growers realize the extent to which hogs are ordinarily infested with worms, or the menace these parasites are to the health, thrift and lives of their animals. Some very intelligent observers have declared that from 50 to 90 per cent of the diseases which affect swine are traceable, directly or indirectly, to worms. A hog afflicted with worms cannot grow or thrive to best advantage, because of being in an abnormal condition, and in such condition must further be more susceptible to attacks of disease.

I am willing to venture the assertion that there are at least a dozen different kinds of worms which afflict the hogs in one way or another, and the present prolonged hot weather has brought to my mind the fact that the present conditions are favorable for the propagation and development of worms in the different internal portions of the hog. In this great variety of worms there are those which can only be produced under certain degrees of temperature. If the hog is subjected to unusually warm weather, their internal condition is such as will hatch the eggs that produce worms which would not be hatched if it were not for the unusual condition of the hogs. I will not mention all of the worms that infest the hog, but will state in the beginning that there are two kinds that cannot be reached with medicine, the lung worms and the kidney worms. When they get hold of the pig, they must be endured, or if they are so active that they destroy

the hog's life, it cannot be helped. Among those which can be reached by remedies we will mention the pinworm, the long thread worm, the stomach worm, the round, smooth worm, the thorn-headed worm, the hook worm, the horn worm, and a few which are not so injurious, but if they were named and were given their Latin name, would require an expert in pronunciation of long words to pronounce them.

It is safe to assert that the individual who thinks he can by the use of one or two, or three simple remedies known as worm destroyers and sold at a high price, free the alimentary canal of these internal parasites, which have much to do in producing the unthriftiness, the slow growth noticed with hogs, and the condition which makes it impossible sometimes for the pigs to exist, will be greatly mistaken. There are worms, like the hook worm and the thorn worm, which imbed their peculiar instruments with which they maintain their position, which cannot be dislodged by ordinary remedies. There must be something which is carried along with the food which will have a direct influence upon those worms which for the time will paralyze them, cause them to release their hold on the membrane, and thereby bring about their being expelled. A worm remedy which will reach all of those internal parasites must be made up of a large number of ingredients, which will not only reach and kill all of those worms, but in order to get rid of them it must stimulate the appetite of the animal and bring about an improved condition of the body which will enable the individual hog to expel those little enemies and get rid of them.

In order to keep the pigs free of worms it is necessary to keep up a continuous method of warfare throughout the whole summer season. It may be interesting to some to know that there are many different ways in which the eggs of those little animals get into the stomach of the hog. Some of the eggs are taken with green feeds, the eggs having been laid upon the blade of grass by a fly. The hog takes it into the stomach, and favorable conditions hatch it and it becomes an abid-producing from an egg that is laid by injection in the grubs, which are favorite feed for hogs. They seem to relish them as food. They are taken into the stomach, when the grub is eaten it is hatched there and remains until some means are provided by which it is destroyed and is expelled. Space forbids our following this part of the swine business in detail, but it is sufficient to say that pigs under the best of conditions are liable to have worms, and it is by far safer and better to procure a worm compound which has within it the ingredients necessary to expel all the worms.

## Variety of Feeds.

Knowing the requirements of the hogs in the summer time as well as we do, we realize the importance of furnishing a variety of feeds. The hogs should not only have pasture feeds made up of a variety of grasses, but if during midsummer the grasses become dry and unpalatable, it is by far better to provide some green feeds that can be thrown to them regularly each day. If one has on hand sweet cornstalks, the hogs will relish them, and they will also relish the leaves of rape, which will also be beneficial and helpful in ridding the alimentary canal of the pests which we have been discussing. Instead of depending on corn feeds alone, it is by far better to use a variety of grain feeds made up of oats, wheat middlings, either high or low grade, and if there is an indication of the presence of worms, it is well to use some wheat bran in the feed, which will produce a condition which will aid in expelling those internal parasites. Feed regularly, make the animals comfortable, and at present prices we may anticipate large profits in the swine business.



## Keep Up the Milk Flow

**A**BOUT this time of year short pastures, insect pests and the natural tendency to go dry in the fall form a combination that cuts seriously into the milk flow, and so into the profits of the dairyman. It is not only an immediate loss to have the cows dry early in the fall, but it stops the milk for the whole winter, or until the cows come fresh again.

The only way to overcome the difficulty is to begin feeding as soon as the milk flow begins to shrink, for if the cows once shrink on their milk no amount of feeding or care will bring them back to full flow again. If the cows can be kept milking until along in December they will get the habit, and then with good feeding will keep right on milking all winter if they are properly fed. They will pay for their feed and should give some profits over it if they are worth keeping at all. I know of many dairymen in my own neighborhood who do not agree with me, and I presume there are such in all neighborhoods. They argue that it never pays to feed a cow anything but pasture, straw and hay. Their cows milk from six to seven months in the year and then the feed for the rest of the year is a dead loss.

We think silage is the best feed if we have it. We begin feeding just as soon as the milk flow begins to shrink, and add a little feed such as bran or ground oats, feeding as much of this as the cows make a good return for. In this way we get a better flow of milk right along and at the same time keep the cows up so that they will not go dry as soon as cold weather comes.

Corn cut green, or any other soiling crop will answer if the silage is not on hand. Roots are good, too. But we find that the cheapest way of all is to have our fields fenced so that we can turn the cows on fresh pasture as soon as the crops are off. We usually have a field of new clover to pasture off, and here in the clover country there is no danger to the clover in doing this. There is some danger from bloat, but by keeping a supply of salt about the fields where the cows can get to it at will we avoid all of this trouble. We have never had a case of bloat from this cause among our mature cattle, but occasionally have had a little trouble with young stock.

We have used many kinds of fly repellants, but have adopted the plan of providing a night pasture for nights and a brush pasture for days as the best thing to get around the torments of the flies. As the nights grow cool and the flies begin to seek out warm places on the cows in which to roost we daub a little grease of some kind on the frequented places about the roots of the tail, flanks and lower part of the legs. For this purpose we know of nothing better than axle grease. It is cheap, easily applied, lasts a long time and does not run with the heat and blister the skin unless applied in excess. Twenty-five cents worth will answer all the fall for a large herd of cows.

Wisconsin. R. E. DIMICK.

### DAIRY COWS LACK IN MINERAL NUTRIMENT.

Dairy cows fed the usual winter rations cannot produce large milk yields without loss of minerals from their skeletons, says Dr. E. B. Forbes, of the Ohio Experiment Station, basing his statement upon recent investigations of the Department of Nutrition. From his results he advises dairymen to give the high-producing cow feeds rich in minerals, especially calcium, magnesium and phosphorous. A gradual shrinkage in milk yield or a failure to breed may be due to mineral depletion, he continues.

In his experiments different rations varying in mineral content were fed to

heavy-milking Holsteins. More calcium magnesium and phosphorous were given off in the milk and excreta than were present in the feed, although the cows maintained their live weight during the experiment, and stored sulphur and nitrogen.

Dr. Forbes says that the cow must draw upon her bones to supply this deficiency, because her capacity to produce milk is much greater than her ability to digest minerals. The farm foods which are richest in the minerals are the legumes, especially clover and alfalfa. Grain feeds are all deficient in the most important mineral nutrient, lime. Lime may also be added to the ration in the form of bone flour or as calcium carbonate.

### A GOOD GRADE COW.

A cow of unknown breeding owned by A. L. Spafford, Kent county, produced in the month of June 1,350 lbs. of milk and made 60½ lbs. of butter. No account was kept of milk used in the family, which was from one to two quarts per day.

This cow is jet black and about eight years old, and freshened May 15 but was taken with milk fever and came near dying, but quickly recovered and has the following to her credit:

In eight weeks she has produced butter to the value of \$33.86 and the skim-milk made into cottage cheese and sold in Grand Rapids amounted to \$33.20, making a total of \$67.06. This cow has been milked three times each day and has received no special care, as the owner works away from home and returns at noon just long enough to milk and eat his dinner. The grain ration has been two parts bran, one part corn meal and one part ground oats. The pasture has been just ordinary farm pasture.

The expense for feed and pasture for the eight weeks was \$17, leaving a net balance of a little over \$50 for the eight weeks.

### DAIRY PROBLEMS.

#### Milking a Heifer Before She Freshens.

I have a heifer that is due to freshen about December 15 and she has developed a good-sized udder and gives milk from all teats. Seems as if she would give about a quart or more if milked. What would you advise as to the proper care to give her? A. J. L.

Sometimes a heifer will develop a good udder several months before she is due to freshen, and then this development will disappear almost, then it will appear again, etc. Nothing should be done in such a case, but if from any cause the milk secretion is started then the heifer must be milked. We once had some younger calves running in pasture with bred heifers early in the season. Finally they were separated and we found they had been sucking one of the heifers. So much milk was secreted that the heifer was in extreme pain the second morning. We got her up and milked her. She gave nine pounds of milk the first milking. This was in July and the heifer did not freshen until December. We milked her right along.

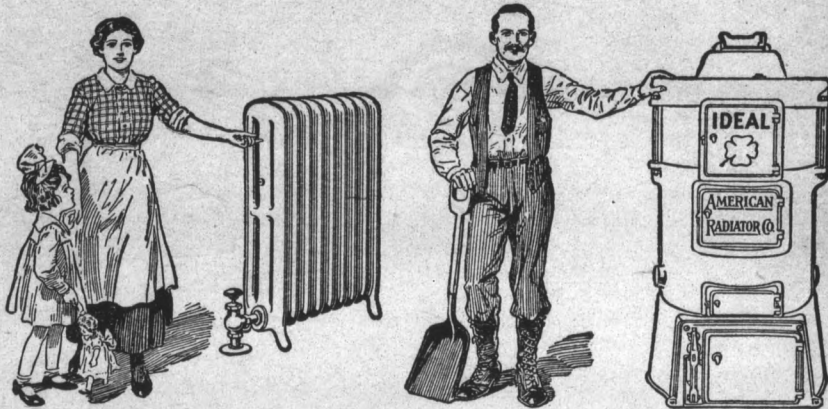
I would advise that if your heifer has been giving milk, to milk her regularly, but if not let her alone.

COLON C. LILLIE.

### THE NATIONAL DAIRY SHOW.

It is worth while to note that the enterprise and spirit back of this great "return to agriculture movement" by the dairy route in the east, has caused to be erected at Springfield, the largest and best equipped set of buildings for the purpose in the United States. A lot of our big dairy friends from the west have been here lately and have expressed considerable astonishment, and "we never imagined such an array of buildings were to be built for the show," is the common expression. If you have not already made your hotel arrangements, write to the Convention Bureau, Board of Trade, Springfield, Mass., and it will see that you are cared for in a most up-to-date manner. All you have to do is to say what you want and it will do the rest.

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## Public Utility Bonds

By J. R. MILLIGAN

In previous articles we have enumerated the fundamental characteristics of municipal bonds, railroad bonds and industrial bonds. You will recall that for our purpose we made these three divisions, together with the fourth, namely, public utility issues; and this article will deal briefly with the last-named class.

Public utility bonds are the newest of the four classes. The rapid development of cities and small communities in the middle west and the western sections of the country have brought into prominence the operation of those companies providing the necessities and serving the ever increasing population. I refer to the street railway systems and electric light companies, the great power properties located in the mountains, in waterways which transmit their current to the more densely populated districts. The water works systems embracing power distribution and serving domestic and commercial requirements, and telephone companies, all come under this class, and all possess very much the same characteristics. The merit of these bonds consists in the fact that:

First. The business of the companies is one that deals with an economic necessity.

Second. Increased revenue and consequently, increased value of the properties may be expected, with a further development of our country.

In view of the fact that these bonds are comparatively fresh as considered in comparison with some of the other forms of investment, the laws regulating the investments of eastern savings banks and trust funds have not been kindly to public utilities, although considerable pressure has been brought to bear to effect their acceptance. Consequently, a higher yield may be secured in the purchase of these bonds than in municipals and rails, from those investors who are not hampered by such restrictions and recognizing this fact, consequently favor public utilities to a very great extent. This same condition holds good with trust companies and national banks and a good many insurance companies. In fact, statistics show that the increase in bond investments by the various banks all over the country is more marked in public utilities and municipals; whereas rails shows a decrease.

One of the most important things to consider in investigating the public utility bond is to first learn the efficiency of the management; second, the relations that exist between the company and the public—its customers—and third, the character and duration of the franchises.

The consolidations which have been affected, putting the smaller companies in the hands of a large holding company, thus providing trained and expert management, have been a great step forward in furnishing efficiency to the smaller properties all over the country, and in fact, it may be said that probably 75 per cent of our public property embracing gas and electric power properties, etc., is owned and controlled by four or five large groups whose securities enjoy a broad and active market and are very highly regarded. In their dealings with the public these large companies recognize the necessity of supplying cheap and efficient service, and have made every effort to retain the good will of the public in their dealings with it. While the bugaboo of municipal ownership hangs over these companies, it becomes very essential that the public be satisfied with the price at which they obtain the character of service rendered.

Three or four years ago there was a great deal of discussion all over the country favoring municipal ownership of various public utility plants, but with the gradual campaign of enlight-

enment which the private companies started, this agitation has assumed less important proportions. However, it is a situation which is liable to reoccur at any time and will bear close watching by those more directly interested.

Closely connected with this last phase of this question comes the franchise problem. The policy which prevailed in this country years ago, to grant extended franchises of a long period of years with few restrictions to the public utility companies, has now changed to a condition whereby short franchises are given under more onerous conditions, and more particularly during good behavior. This has tended to rectify certain conditions obtaining before, and will doubtless make for better service, better management and a more equitable price.

As compared with the other three classes of bonds, public utilities enjoy a less active market, and consequently are usually bought for the purpose of holding them until maturity, whereas the physical value of the property in industrial bonds is two or three times the amount of the mortgage, in public utilities, we find that the properties are very often bonded up to 80 or 90 per cent of their cost. This may be accepted as sound finance in view of the fact that in established companies the earnings are much more stable and much less subject to fluctuations in business conditions. As a rule, long time bonds are more usually found in public utility issues, although of late the holding companies have issued short-time collateral notes with the long-time bonds of their constituent companies as security.

As a class, this type of investment is very highly regarded, and when purchased by the larger houses specializing in public utilities may be considered a desirable investment. The yield is greater than municipals and railroad bonds, and, in the opinion of experts, the security is just as good. The earnings should continue to increase from time to time as our country gets older and as the bonds become more established, and increased value should obtain in the securities themselves. The stocks of these properties have in a great many instances shown splendid gains and considerable profit has accrued to the investors. The advertisers in this paper are well equipped to serve the needs of any investors desiring public utility issues, and your editor recommends correspondence with them or with him direct if you desire any specific information along these lines.

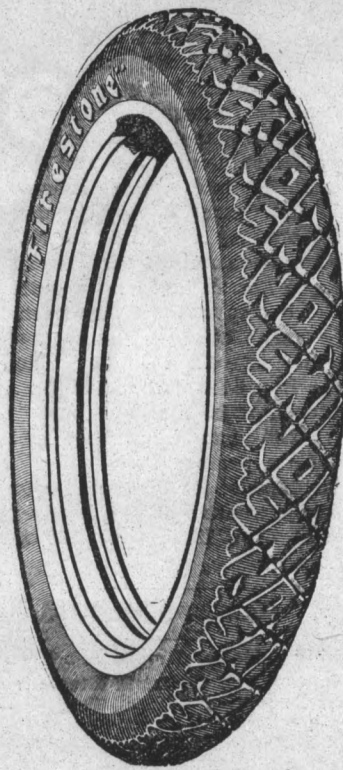
### INVESTIGATION OF SHIPPING PACKAGES.

The Office of Markets of the Department of Agriculture has been making an investigation of the handling of various crops and of the packages and containers used. It was found that in connection with almost every commodity a very large number of types, shapes, and sizes of containers are in use in the various states. It is believed not only that many of these types are unnecessary and undesirable, but that the standardization of types and sizes is greatly needed. Data are being secured from the several hundred factories which make fruit and truck packages concerning the types, specifications, capacity, and cost of these containers. This information is available for use in connection with the legislation which growers, shippers, dealers, and package manufacturers are working for looking toward the standardization of fruit and truck packages. The office collection of these containers for examination, testing, and demonstration, now amounting to over 200 different types and sizes, is constantly growing.

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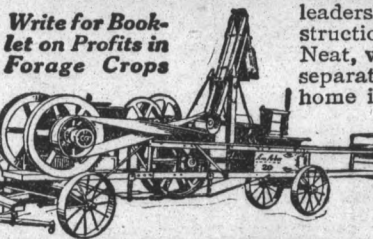
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# Magazine Section

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POETRY  
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INFORMATION

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*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

IT may be very doubtful whether our attitude toward the English sparrow, and our legislation making it an outlaw, are well founded in the economy of the farm.

From personal observations I can assert that it is an active and efficient enemy of the army worm. I have watched the army-like advance of the worm, and the numerous sparrows of this species, hovering above that rank and destroying the worms until the army was lost by the destruction of its units and ceased to exist as a menace to the vegetable food upon which its destruction fell.

## An Offset to the English Sparrow

By W. V. SMITH

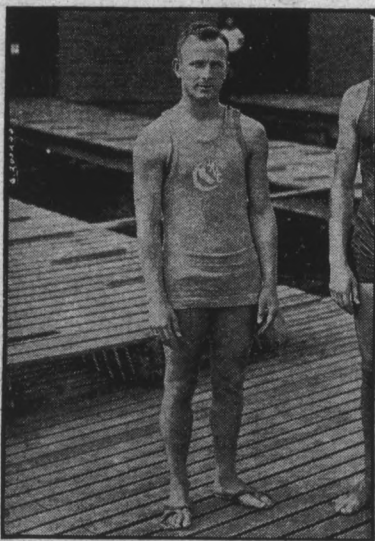
Our feeling towards this bird is largely a matter of prejudice, because of its alien origin; an outgrowth of our patriotism, which cannot brook the attacks made by it on our native birds, all of which have stirred us to a pitch of warlike ardor, resulting in these various acts of the legislature, aimed to its extermination, which, however, seems to be as far ahead now as when we first began to persecute it.

When we indulge in this sentiment, however, let us also see if we ourselves, and our land, have in any way sinned; let us for instance, take into consideration an emigrant from our own land to England. After the Great Fire," as it is still called, by which London was nearly all burned in 1666, so great was the destruction, that in rebuilding the city, the people were driven to America for sufficient lumber

and timber to meet the great demand caused by the reparation of the fire's destruction. The forests of England had been already too much depleted to meet this drain, so from America went the logs to rebuild London, and with them as a stowaway under the bark of certain of these logs, went an American friend, who found in London a congenial climate and a most favorable home, a land of plenty.

In a short time it had spread out over the city and country and the other cities of the island, and crossed to Ireland, climbed the rugged hills of Scotland, and in fact so far made it-

## WORLD EVENTS IN PICTURES



Ludy Langer, Pacific Coast's Crack Swimmer.



Dr. John R. Mott Visits Prisons of Warring Nations.



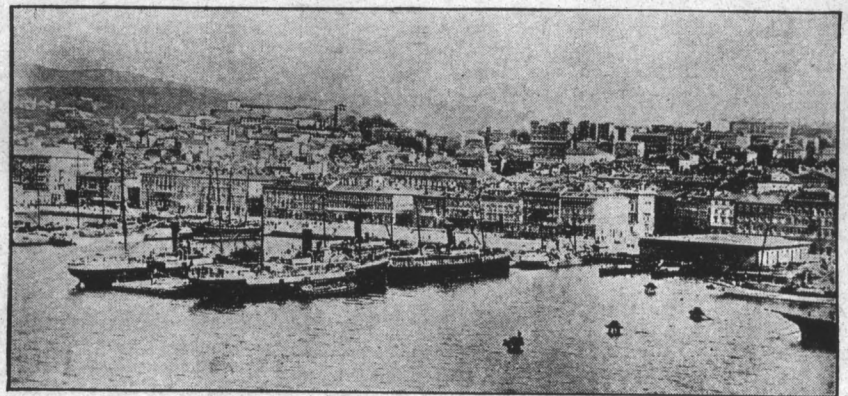
China's New President Orders New Trial of Monarchist Leader.



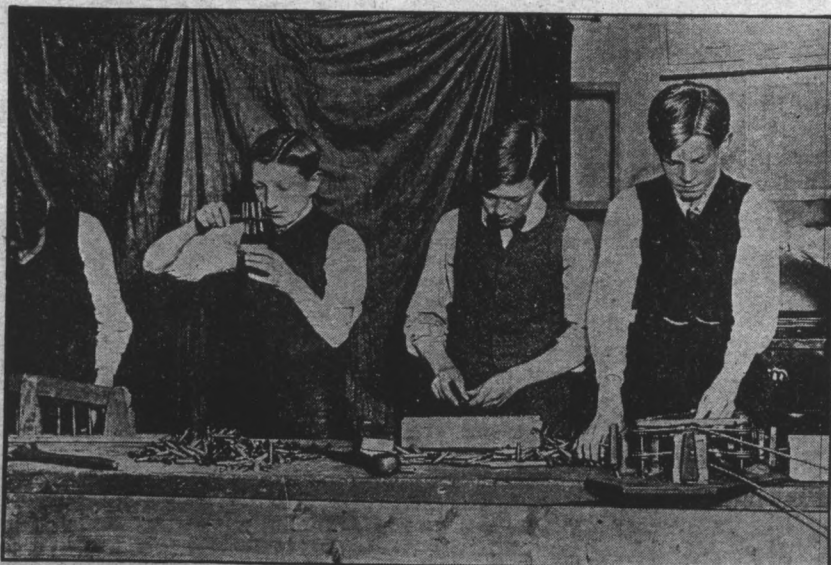
Women Training to Become Dental Hygienists.



American Soldiers in Mexico are Enjoying a Keenly Contested Tug-of-War.



Trieste, Austria's Adriatic Port, which the Italians are now Threatening.



English Boys Sacrifice Holidays to Increase the Output of Munitions.



Australians in the Trenches Use a Modern Catapult to Hurl Bombs.

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self at home as to have none of the usual homesickness of the emigrant, no longing for its homeland. It hobbled with nobility, made free with the yeomanry, mixed on terms of familiarity with the peasant class. It knew no race, no religious prejudice, no political barriers; the amiable Irishman, the persistent Scotsman, the exclusive Welshman, the farmer, the professional man, each and all of these were meal tickets to our American friend.

Its name? Why, it has various; the scientific name, in pedantic Latin, is the Cimex lectularius, but to the unscientific multitude it is best known by its more plebeian name, the bed bug.

So, when we think of the pestiferous sparrow, when we see it arrogantly chasing our native birds, when we feel cussiferous because of its multitudinous shortcoming, let us as a paliative, as a sort of sedative to our indignation, at the same time think of our contribution to the entomology of the old country, and let us remember our own American migrant has evened up all matters, by its activity and energy, typical American energy, for we may safely say that this American has shed more English, Scotch, and Irish blood in the land of our fathers, than all the soldiers of the British Empire ever spilled on all the fields of the Revolution, and later war.

## The Biggest Business

By ZONA GALE

(Concluded from last week.)

"No, no, Mis' Beach! Don't you make that mistake. You ain't doing nice. As long as you think you are, this world is being held back. It's you that's got to help folks to know that you aren't doing nice. And to make folks wonder why."

But I didn't say it to her. I s'pose I haven't got that far—yet.

She said she'd like to come to the club that Silas proposed, and Mary, she said she'd come. They didn't question much about it—they merely accepted it and said they'd come. And I went out into the April after-supper light, with a bird or two twittering sleepy, and an orange and lemon and water-melon sunset doing its best to attract my attention, and I says out loud to April in general:

"A club. A club. So we're going to help that house with a club."

Then I stopped to Mis' Cripps's boarding house. Mis' Cripps's boarding house faces the railroad tracks, and I never went by there without seeing her milk bottles all set out on her porch, indelicate, like some of the kitchen lining showing. Bettie Forkaw and Libbie Collins and Rose Miller and Lizzie Lane, pickle factory girls, lived there. They were all home, out on the smoky porch, among the milk bottles, laughing and talking and having a grand time. They had sleeves above their elbows and waists turned in at the throat with ruffles of cheap lace, and hair braided in bunches over their ears and dragged low on their foreheads, and they had long, shiney beads round their necks, and square, shiney buckles on their low shoes. Betty was pretty and laughed loud and had uncovered-looking eyes. Libbie was big and strong and still. Rose was thin, and she had less blood and more bones than anybody I ever see. And Lizzie—Lizzie might have been a freshman in any college you might name. She'd have done just as good work in figures as she did in pickles—only cucumbers come her way and class-rooms didn't.

"Hello, girls," I says, "how are you tonight? Do you want to be a club?"

"To do what?" says they.

"Have a good time," says I. "Have music—eat a little something—dance—read a little, maybe. And ask your friends there. A club, you know."

After we'd talked it over, all four of 'em said yes, they wished they had some place to go evenings and wouldn't it be fine to have some place give to 'em where they could go, I didn't discuss it over with 'em at all—but I done the same thing I'd done before, and that I cannot believe anybody has the right to ask, no matter how rich the questioner or how poor the questionee.

"Girls," I says, "you all work for Silas Sykes, don't you? How much do you get a week?"

They told me ready enough: Five and Six Dollars apiece, it was.

"Gracious," I says, "how can you use up so much?" And they laughed and thought it was a joke. And I went along to the next place—and my

thoughts come slowly gathering in from the edges of my head and formed here and there in kind of clots, that got acted on by things I begun to see was happening in my town, just as casual as meat bills and grocery bills—just as casual as school bells and church bells.

For the next two days I went to see them on my list. And then nights I'd go back and sit on my porch and look over to Red Barns that was posting itself as a nice, hustling, up-to-date little town, with plenty of business opportunities. And then I'd look up and down Friendship Village that was getting ready for its business meeting in post office hall on Friday night, and trying its best to keep up with its "business reputation." And then I'd go on to some more homes of the workers that was keeping up their share in the commercial life of Friendship Village. And then my thoughts would bring up at Silas's club house, with the necessary old furniture and magazines and games laid out somewhere, tasty. And the little clots of thought in my brain somehow stuck there. And I couldn't think through them, on to what was what.

Then something happened that put a little window in the side of what was the matter with Silas's plan. And I begun to see light.

The second night I was sitting on my porch when I heard my back gate slam. My back gate has a chain for a spring, weighted with a pail of stones, and when it slams the earth trembles, and I have time to get my hands out of the suds or dough or whatever; and it's real handy and practical. This time there come trotting round my house David Beach. My, my but he was a nice little soul. He had bright eyes, that looked up quick as a rabbit's. And a smile that slipped on and off, swift as a frisking squirrel. And he had little darting movements, like a chipmunk's. There was something wild about him, like the wind. Silas's pickle factory did seem a queer place for us to have put him.

"Look, Miss Marsh," he says. And he was holding out his clock. "I got it all together," he says, "and it'll go. And it'll go right."

"Did you now?" I says. And it was true. He had. It did. That little alarm clock was ticking away like a jeweller-done job. Yes, Silas's pickle factory did seem a queer place for us to have put him.

When the little lad had gone off through the dusk, with his clock under his arm, I looked down the street after him. And I thought of this skill of his. And then I thought of the \$2.50 a week Silas was giving him for shelling corn. And I thought of this club that was to keep him and the rest of 'em contented. And I begun to see, dim, just the particular kinds of fools we was making of ourselves.

There was yet one thing more happened that wasn't so much a window as a door. The next night was to be the business men's meeting, and just before supper I went to pay my last

visit on my list. It was out to the county house to see the superintendent's niece that had just resigned from Appleby's store, and that they were afraid was going to Red Barns to work.

The county house. Ain't that a magnificent name? Don't we love to drape over our bones and our corpses some flying banner of a word like sarcophagus? The county house sets on a hill. A hill is a grand place for a county house. "Look at me," the county house can say, "I'm what a beneficent and merciful people can do for its unfit." And I never go by one that I don't want to shout back at it: "Yes. Look at you. You're our biggest confession of our biggest sham. What right have we, in Nineteen Hundred Anything, to have any unfit left?"

Right in front of the county house is a cannon. I never figured out the fitness of having a cannon there—in fact, I never can figure out the fitness of having a cannon anywhere. But one thing I've always noticed: When public buildings and such do have cannon out in front of them, they're always pointing away from the house. Never toward the house. Always going to shoot somebody else. That don't seem to me etiquette. If we must keep cannon for ornament, aren't we almost civilized enough to turn 'em around?

Seems the superintendent's niece wasn't going to Red Barns at all—she had merely resigned to be married and had gone to town to buy things—a part of being married which competes with the ceremony, neck and neck, for importance. In the passageway, the matron called me in the office. She was a tall, thick woman with a way of putting her hand on your back to marshal you, as mothers do little children in getting them down an aisle. Yes, she was a marshaling woman.

"Look here," says the matron, proud like.

They'd put a glass case up in the office and it was all hung with work—crocheted things, knit and embroidered things, fringed things. "Did by the inmates," says she, proud. That word "inmates" is to the word "people" what the word "support" is to the word "share." It's a word we could spare.

I looked at the things in the case—hours and hours and hours the fingers of the women upstairs had worked on 'em—intricate counting, difficult stitches, pretty patterns. And each of them was marked with a price tag. The county house inmates had got 'em hung out there in the hope of earning a little money. One was a bed-spread—a whole crocheted bed-spread. And one—one was a dress crocheted from collar to hem, and hung on all sorts of crazy crocheted ends and tassels so—I knew—to make the job last a little longer. And when I saw that, I grabbed the tall, thick matron by the arm and I shook her a little.

"What was we doing?" I says, "that these folks wasn't taught to do some kind of work so's they could have kept out of the poor house?"

She looked at me odd and cool.

"Why," she said, "my dear Miss Marsh, it's being in here that gives 'em the leisure to make the things at all!"

What was the use of talking to her? And besides being unreasonable, she was one of them that you're awful put to it to keep from being able not to right down dislike. And I went along the passage thinking: "She acts like the way things are is the way things ought to be. But it always seems to me that the way things ought to be is the best way things could be. For the earth ain't so full of the fullness thereof but that we could all do something to make it a little more so."

And then the thing happened that opened the door to all I'd been thinking about, and let me slip through inside.

Being I was there, I dropped in a minute to see old Grandma Stuart. She was one of the eighty "inmates." Up in the ward where she was sitting, there were twenty beds. And between each two beds was a shelf and a wash-

basin, and over it a hook. And old Grandma Stuart sat there by her bed and her shelf and her hook. She was old and white, and she had fine wrinkles, like a dead flower. She drew me down to her, with her cold hands.

"Miss Marsh," she said, "I got two-three things."

"Yes," I says, "well, that's nice," I says. And wondered if that was the right thing to say to her.

"But I ain't got any box," she says. "They keep the things and bring 'em to us clean every time. And I ain't got any box."

"That's so, you ain't," says I looking at her shelf.

"I put my things in my dress," she says, "but they always fall out. And I've got to stop to pick 'em up. And she don't like it."

No. The matron wouldn't like it. I knew that. She was one of them that the thing was the thing even if it was something else.

"And so I thought," says Grandma Stuart, "that if I had a pocket, I could put my things in that. I thought they wouldn't fall out if I had a pocket. She says she can't be making pockets for every one. But I keep thinking if I had a pocket. It's these things I've got," she says.

She took from her dress three things: A man's knife, a child's ring, and a door-key.

"It was the extra key to the house," she said. "I—erred—And I thought if I had a pocket—"

I sat there with her till the lights come out. I promised to come next day and bring her a little calico pocket. And then I set and let her talk to me—about how things use' to be. When at last the matron come to take 'em away to be fed, I went out, and I ran down the road in the dark. And it was one of the times when the world of life is right close up, and you can all but touch it, and you can almost hear what it says, and you know that it can hear you—yes, and you almost know that it's waiting, eager, to hear what you are going to say to it. For one force breathes through things, trying to let us know it's there. It was speaking to me through that wrecked home of Grandma Stuart's—through the man's knife, the child's ring, the

### CRADLE SONG.

BY T. G. MORRIS.

Sleep, oh, baby of mine,  
Rest thee, heart of my heart;  
The violets peep from thy starry eyes,  
Thy smile is sweet and thy glance is wise,  
Thou wert fashioned by sculptor  
Divine,  
His masterpiece of Art!

Sleep, oh, baby of mine,  
Let naught thy slumbers mar;  
Dream sweet dreams of childhood's joys,  
Garner thy strength, my boy of boys;  
Thy mother holdeth thee safe and close,  
And God keepeth watch from afar.

Sleep, oh, baby of mine,  
Rest, sweet burden of love;  
Thou art life of my life, oh, little one,  
My star of stars—my only son!  
Sleep bideth near thy drowsy head,  
And angels bless from above.

Sleep, oh, baby of mine,  
Rest full well this night;  
Sleep, and waking know no sorrow,  
God gave thee today—may He grant a good morrow;  
My little blossom of life and love,  
Rest thee well—good-night, good-night!

### TO OUR STORY READERS.

To the hundreds of Michigan Farmer story readers who have sent us letters of appreciation we take this means of thanking each and all of them for their consideration.

In our next issue will appear the first installment of Caroline Crawford Davis' historical sketch which will continue through the September numbers. Besides its intensely interesting characters and commanding climaxes the story sheds light on some important history of Michigan. After that a gripping serial by E. J. Rath, entitled "The Man with the 44 Chest" will start.



door-key; and through the pitiful, clever, crocheted stuff in the glass case in the county house; and through David, and through all them that we were trying to fix up a club for—like a pleasant plaster for something that couldn't be touched by the remedy.

Out there in the soft night the world looked different. I donno if you will know what I mean, but it was like the world I knew had suddenly slipped inside another world—like a shell; and the other one was bigger and better and cut in a pattern that we have not grown to—yet. In the west a little new moon was showing inside the gold circle of the big coming full moon. And it seemed to me as if the world that I was in must be just the little thin promise of the world that could be—if we knew. Sometimes we do know. Sometimes, for just a minute, we see it. That night was a night when I know that I saw. After you see, you never forget.

"Life is something else than what we think it is," I says to myself as I ran along the road in the dark: "It's something better than we think it is."

As I ran, I stopped in to Mis' Beach's house and asked for something. "Oh, Mis' Beach," I says, "Oh, David! Will you let me take something? Will you let me borrow the clock you put together without anybody telling you how? Just for this evening?"

They said they would and they didn't question that, particular, either. And I took the clock. And being David was going for the yeast, he came out with me, and we went on together. He ran beside me, the little lad, with his hand in mine. And as I ran, it seemed to me that I wasn't Calliope Marsh any more, but that I was the immemorial woman, running with the immemorial child, toward the hope of the better thing, always the better thing.

Past the post office hall I went, already lighted for the business meeting, and on to Abigail Arnold's Home Bakery.

Abigail was sitting, dressed and ready, with her list in her hand. But when she saw me she burst out with some strange excitement in her face:

"Calliope!" she says. "Silas has been here. He said you hadn't handed in your report. I—I don't think he expects you to go to the meeting. I know he didn't expect me."

"Didn't he now?" I says. "Very well then, he didn't. Are you ready?"

"But, Calliope—" says she.

"Are you a business woman in this town, or are you not?" I asked her.

Abigail has had her bakery for twenty years now, and has paid off its mortgage that her husband bequeathed her.

"Come," says I. And she did.

We went down the street to the post office store building, all lighted up. We went up the stairs, and slipped into some seats by the door. I don't think Silas, the chairman, see us come in. He can't of, because he failed to explode. He just kept on conducting the meeting called to consider the future prosperity of Friendship Village and balancing on his toes.

While they talked, I set there, looking at them. Sixty men or so they were—the men that had made Friendship Village. Yes, such as it was, these men had made it. It was Silas that had built up his business and added to it, till he employed forty-two folks. Timothy Toplady had done the same and had encouraged three-four others to come in to open up new things for the town. It was he who stood back of Zittelhof when he added furniture to his undertaking business, and that started the agitation for the cheese factory out in the hills, and that got the whole country excited about having good roads. And it was these men and Eppleby Holcomb and some others that had got the new bridge and the water works and more than these. And while I set there looking at them, it come flooding over me the skill and the energy and the pa-

tience and the dogged hard work that it had meant for them sixty men to get us where we were, and from my heart I was thankful to 'em. And then I put my mind on what they were a saying:

"An up-to-date, hustling little town," I kept hearing. "The newer business methods." "Good openings." "Opportunities for hustlers." "Need of live wires." "Encourage industry." "Advance the town, advance the town, advance the town." And the thoughts that had been formed in no account clots in my head suddenly took shape in one thought, with the whole of daylight turned on to it.

So, as quick as the business part seemed to me to be done, I rose up and told Silas we had our reports to make, Abigail and me, about the Evening Club.

"Well," says Silas, "this whole thing is being done irregular. Most irregular. But you go on ahead, and we'll be glad to listen if you think you have anything to say, bearing on to—er—what we're up to."

And that was all right, and I took it so, because it was meant right.

I donno what there was to be afraid of. All of those men we'd known for years. We'd worked with 'em shoulder to shoulder in church affairs. We'd stood equal to 'em in school affairs, and often agreed with 'em. We'd even repeatedly paid one of 'em our taxes. And yet because it was a business men's meeting, we felt kind of abashed or askant or something, Abigail and I.

Abigail reported first, about the thirty odd she'd been to see. "But," she winds up, "Calliope's got something to say that I agree to, over and above the report. We've talked it over, her and me—" she adds with her nice dignity, "as a Friendship Village business woman, I'm going to leave her to speak for me."

So I said what I had to say about them I'd been to see, and what they had said about the club. And then I come to the heart of it, and I held up David's little clock. I told 'em about it, and about him. I suppose everybody else has stories to tell like David's, about the folks, young or old, that is living graves, little or big, of the kind of skill and energy and patience that they've never had the chance or the courage or the little will-power inside 'em—to develop. And there it stays in 'em, undeveloped, till they die. I believe it's truer of all of us—of you and me—than we've any idea of. And this is what I tried to say to 'em that night, when I showed 'em David's little clock. I didn't say anything about the girls to Mis' Cripp's boarding house—I kept them, and the rest of 'em, in my heart, along with that crocheted dress up to the county house, and Grandma Stuart's wreck of a home—the man's knife, the child's ring, the door-key. And I says:

"Now, we've visited all these folks that the Evening Club was thought of for. And we've found most of 'em in favor of having the club. I'm free to confess that I hoped some of 'em would say they'd rather be paid better wages than to be give a club. But perhaps it's all right. Mebbe the club is one step more we've got to take before we can get down to the big thing underneath it all. But it ain't the last step—and I'd almost rather not bother with it—I'd almost rather get on to the big thing right away."

"May I ask," snaps out Silas, clean forgetting his chairmanship and acting like he was talking to me in the post office store beside the cheese, "may I ask what you mean by the 'big thing'?"

"Oh," I says, "that's what I've been thinking about while I set here. Oh," I says, "you men—you've made the town. You've done everything once. Do it again—now when the next thing is here to do. You've done your best with your own property and your own homes. Now do your best with folks!"

"Ain't that the purpose of this here (Continued on Page 192)



## Engineering the Telephone

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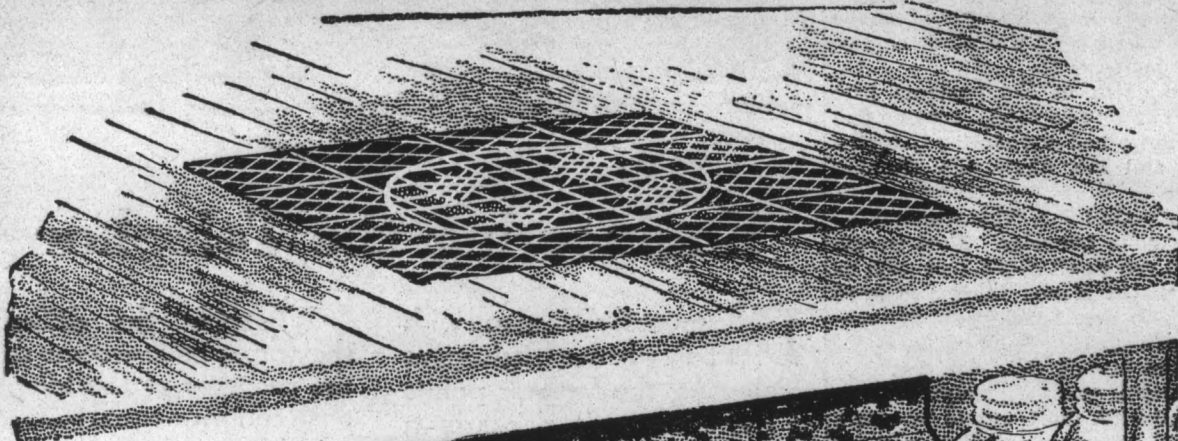
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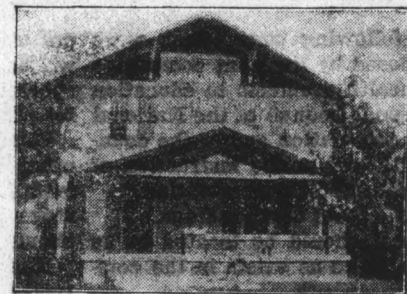
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your house may be or how difficult to heat,  
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We have had a long cold winter  
and spring but have burned only five  
tons of soft coal in your Caloric fur-  
nace. The rooms have been well  
warmed and the coil furnishes an  
abundance of hot water all over the  
house. The cellar temperature stayed  
about 10 degrees above and none of  
the vegetables were spoiled or sprouted  
by an overheated cellar. The cellar  
being free from pipes afforded free  
movement and storage room. Our  
walls, paper, carpets, etc., are bright  
as new on account of furnace being  
dustless. I consider it the cheapest,  
most economical and easiest operated  
furnace on the market.—Claud Baker,  
Union City, Ind.



I bought a Caloric furnace in Dec-  
ember, 1915, and am very well satis-  
fied. I used about \$12 worth of coal  
and kept my house comfortable even  
at 7 degrees below zero. I have seen  
lots of furnaces but none to equal the  
Caloric.—William Hanft, New  
Athens, Ill.



Have had the Caloric furnace since  
November, 1915. It produces more  
heat from less fuel and costs two-thirds  
less than any other kind. I have a  
large three story 11-room house and on  
different mornings before 7 o'clock  
showed 72 degrees in our third story  
rooms. This was true on March 17th  
when the temperature outside was 6  
below.—Mahlon Fretz, Sellersville, Pa.



We consider the Caloric the coal  
man's enemy as we have used approx-  
imately three tons of hard coal per  
season for house of seven rooms and  
bath. One of my neighbors has  
already taken out his pipe furnace and  
installed a pipeless furnace, while two  
others will take out their pipe fur-  
naces and install a Caloric this sum-  
mer. The Caloric does not heat the  
basement and takes very little room.  
—John Neumann, Sauk City, Wis.



I always heated with hard coal at  
\$45 and \$15 for cooking and laundry.  
I installed a Caloric Pipeless Furnace  
and heated 6 rooms and bath for \$32,  
including cooking and laundry. I had  
no trouble keeping 70 degrees upstairs  
and downstairs, even on several days  
when the thermometer registered  
10 and 20 degrees below. The  
Caloric makes good moist air and  
pleasant heat.—W. C. Kindig, Cen-  
terville, Ia.



**Exhibit at Your State Fair.**





# Woman and Her Needs

## At Home and Elsewhere



### Minimum Health Requirements for Rural Schools

**T**HE following suggestions were proposed by the joint committee on health problems in education of the National Council of the National Education Association and of the council on health and public instruction of the American Medical Association.

#### Location and Surroundings.

The school should be located in as healthful a place as exists in the community.

Noise and all other objectionable factors should be eliminated from the immediate environment of the rural school.

**Accessibility.**—Not more than two miles from the most distant home, if the children walk. Not more than six miles from most distant home if school wagons are provided.

**Drainage.**—School ground must be well drained and as dry as possible. If natural drainage is not adequate, artificial drainage should be provided.

**Soil.**—As every rural schoolground should have trees, shrubs and a real garden or experimental farm, the soil of the schoolgrounds should be fertile and tillable. Rock and clay soil should always be avoided. If the soil is muddy when wet, a good layer of sand and fine gravel should be used to make the children's playground as useful as possible in all kinds of weather.

**Size of Schoolgrounds.**—For the schoolhouse and playground, at least three acres are required.

A playground is not a luxury but a necessity. A school without a playground is an educational deformity and presents a gross injustice to childhood.

**Arrangements of the Grounds.**—The schoolground should have trees, plants and shrubs grouped with artistic effect but without interfering with the children's playground or the lighting of the schoolhouse.

#### Schoolhouse.

The schoolhouse should be made as nearly fireproof as possible. Doors should always open outward and the main door should have a covered entrance; a separate fuel room should be provided, also separate cloak-rooms for boys and for girls.

A basement or cellar, if provided, should be well ventilated and absolutely dry.

The one-teacher country school should contain, in addition to the classroom:

(a) A small entrance hall, not less than 6x8 feet.

(b) A small retiring room, not less than 8x10 feet, to be used as an emergency room in case of illness or accident, for a teacher's conference room, for school library and for health inspection, a feature now being added to the work of the rural school.

(c) A small room, not less than 8x10 feet, for a workshop, for instruction in cooking and for the preparation of refreshments when the school is used, as is should be, for social purposes.

Classroom should not be less than 30 feet long, 20 feet wide and 12 feet high. This will provide space enough for a maximum of thirty pupils.

#### Ventilation and Heating.

The schoolroom should always receive fresh air coming directly from out of doors in one of the following arrangements:

(a) Through wide open windows in mild weather.

(b) Through window board ventilat-

ors under all other conditions, except when, with furnace or jacketed stove, special and adequate inlets and exits for air are provided.

**Heating.**—Unless furnace or some other basement system of heating is installed, at least a properly jacketed stove is required. No unjacketed stove should be tolerated in any school.

The jacketed stove should have a direct fresh air inlet about 12 inches square, opening through the wall of the schoolhouse into the jacket against the middle or hottest part of the stove.

The exit for foul air should be through an opening at least 16 inches square on the wall near the floor, on the same side of the room as the stove is located.

A fireplace with flue adjoining the stove chimney makes a good exit for bad air.

**Temperature.**—Every school should have a thermometer, and the temperature in cold weather should be kept between 66 and 68 degrees F.

#### Lighting.

The schoolroom should receive an



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abundance of light, sufficient for darkest days, with all parts of the room adequately illuminated. The area of glass in windows should be from one-fifth to one-fourth of the floor area.

The best arrangement, according to present ideas, is to have the light come only from the left side of the pupils and from the long wall of the classroom. Windows may be allowed on rear as well as on the left side, but the sills of windows in the rear of the room should be not less than seven feet above the floor. High windows not less than seven feet from the floor may be permitted on the right side if thoroughly shaded, as an aid to cross ventilation, but not for lighting.

There should be no trees or shrubbery near the schoolhouse which will interfere with the lighting and natural ventilation of the classroom.

The school building should so face that the schoolroom will receive the direct sunlight at some time during the day. The main windows of the schoolroom should not face either directly north or south. East or west facing is desirable.

Shades should be provided at tops and bottoms of windows with translucent shades at top, so that light may be properly controlled on bright days.

**Schoolroom Colors.**—The best colors for the schoolroom in relation to lighting are: Ceiling, white or light cream; walls, light gray or light green; blackboards, black, but not glossy.

#### Cleanliness.

The schoolhouse and surroundings should be kept as clean as a good housekeeper keeps her home. No dry sweeping or dry dusting should be allowed. Floors and furniture should be cleaned with damp sweepers and oily cloths. Scrubbing, sunning and airing are better than any form of fumigation.

#### Drinking Water.

Drinking water should be available for every pupil at any time of day which does not interfere with the school program.

Every rural school should have a sanitary drinking fountain located just inside or outside the schoolhouse entrance.

Drinking water should come from a safe source. Its purity should be certified by an examination by the state board of health or by some other equally reliable authority.

A common drinking cup is always dangerous and should never be tolerated.

Individual drinking cups are theoretically, and in some conditions all right, but practical experience has proved that in schools, individual cups, to be used more than once, are unsatisfactory and unhygienic. Therefore, they are not to be advocated nor approved for any school.

Sufficient pressure for running water for drinking fountain or other uses in the rural school may always be provided from any source without excessive expense by a storage tank or by pressure tank with force pump.

#### Water for Washing.

Children in all schools should have facilities for washing hands available at least: Always after the use of the toilet; always before eating.

Frequently after playing outdoors, writing on blackboard or doing other forms of handwork connected with the school.

Individual clean towels should always be used. Paper towels are the cheapest and most practicable. The common towel is as dangerous to the health as the common drinking cup.

#### Furniture.

School seats and desks should be hygienic in type and adjusted at least twice a year to the size and needs of growing children. Seats and desks should be individual—separate—adjustable—clean.

Books and other materials of instruction should not only be sanitary but attractive enough to stimulate a wholesome response from the pupils.

#### Toilets and Privies.

Toilets and privies should be sanitary in location, construction and in maintenance.

If water carriage system for sewage is available, separate toilets for boys and girls should be located in the schoolhouse with separate entrances on different sides or corners of the school building.

If there is no water carriage system, separate privies should be located at least 50 feet in the different directions from the schoolhouse, with the entrances well screened.

The privy should be rainproof, well ventilated and one of the following

types: Dry earth closet; septic tank container; with a water-tight vault or box.

All containers of excreta should be water-tight, thoroughly screened from all insects and easily cleaned at frequent intervals.

No cesspool should be used unless it is water-tight and easily emptied and cleaned.

All excreta should be either burned, buried, treated by subsoil drainage, reduced by septic tank treatment or properly distributed on tilled land as fertilizer.

All schoolhouses and privies should be thoroughly and effectively screened against flies and mosquitoes.

Schoolhouses and outhouses should be absolutely free from all defacing and obscene marks.

Buildings should be kept in good repair and with whole windows.

#### Standards.

Provision and equipment of adequate school plant depends on intelligence, interest, pride and financial ability of the community.

Maintenance of a clean and sanitary school plant depends on efficient house-keeping and on interest and willing co-operation of pupils.

No community should be satisfied by the minimum requirements indicated in the foregoing, but every country school should be so attractive and well equipped as to minister with some abundance of satisfaction to the physical, mental, aesthetic, social and moral well being of those who provide it, who own it, who use it, and who enjoy it.

#### Present Conditions.

Among the reasons which explain the present deplorable conditions of rural schoolhouses, the following are prominent:

Low architectural and sanitary standards in rural regions general throughout the country.

Ignorance regarding the physical, mental, social and moral effects of unattractive and insanitary school buildings on the children and on the community as a whole.

False economy expressed by local school boards in failure to vote enough money to build and maintain suitable school buildings.

Lack of supervision or assistance by the state which is usually necessary to maintain desirable standards.

#### Improvement.

How shall the rural schools throughout this country be improved up to a reasonably satisfactory standard?

By a popular campaign of education regarding the conditions desirable and possible in the country school. Such a campaign would profitably include many or most of the following:

The United States Bureau of Education and State Departments of Education should furnish plans and instructions for construction and equipment of rural school buildings.

The United States Bureau of Education in Washington is already supplying on request valuable help of this kind, and a few state departments of education are demonstrating what may be done by supervision and support which aids without controlling.

State departments of education should supply supervision of rural schools and should have power: To condemn insanitary and wholly unsuit-



able buildings and school sites; to give state aid to rural schools when the local authorities fulfil certain desirable and reasonable conditions.

Ideas and standards of school sanitation should be inculcated in minds of local school patrons and school authorities who control school funds and who administer the affairs of the schools. Public lectures on health topics should be provided in the schoolhouse and elsewhere.

Effective school health courses should be introduced in normal schools and teachers' institutes.

Better education of rural school-teachers, county superintendents and rural school supervisors in the principles and practice of school hygiene and sanitation should be assured.

Interest in and enthusiasm for the improvement and care of all features of the school and its surroundings which affect health and happiness should be inspired in the minds of rural school pupils.

Emulation and competition should be recognized and rewarded in ways that will promote wholesomely and progressively the welfare of the community as a whole.

#### HOW TO RID A HOUSE OF BED-BUGS.

Twenty years ago I saw this recipe in a farm paper and have never known it to fail. Put two ounces of corrosive sublimate in a pint bottle, fill with turpentine and shake well. Apply with a feather to every crack and corner of your bed and in every crack and corner of the floor and around the windows. Do this once a week, until rid of the pest.—Mrs. C. D., Pinconning, Mich.

When I read your answer to House-keeper who asked how to rid an old house of bed bugs, my heart went out to her, as I have known serious results to follow the use of gasoline for such purposes. A friend of mine filled every crack in the floors and between floors and baseboards, using turpentine in her filler, then painted floors and woodwork carefully. She then cleaned the walls carefully, and all the furniture, before putting it back into the rooms. A solution of eight quarts of hot water and one-half cup of spirits of turpentine is good for washing the woodwork and walls that have not been papered.—Mrs. S. L., Sparta, Mich.

Where liquid applications are not advisable, fumigate with brimstone.—U. S. Dept. of Agriculture.

#### HOME QUERIES.

Household Editor:—Would like to ask if any of the readers of the Michigan Farmer can tell how to get rid of Buffalo moths?—Reader.

The most effective way to get rid of this pest is to remove all carpets and use rugs instead. If the floors are not suitable for polishing or painting they can be covered with straw matting. This is not as cleanly as the bare floor but affords fewer places for the insect than the tacked down carpets. If the carpets must be kept fastened down, more strenuous measures must be used. The best method is through fumigation with bisulphid of carbon or sulphur dioxide. Remember that the gas from bisulphide of carbon is very inflammable and the vapor should not be inhaled. Sulphur candles which can be purchased at any drug store have been used for many years and are effective if the fumigation is thorough. Allow two pounds of stick sulphur to every thousand cubic feet of space. The chief objection to sulphur is its strong bleaching action of the fumes and their destructive action on vegetation. Constant vigilance is necessary. After thorough house cleaning frequent inspection is necessary. If the moth is seen after this a good method is to lay a damp cloth over the spot in the carpet and iron with a hot iron. The steam will pass through the carpet and kill the insects immediately beneath it.—U. S. Dept. of Agri.



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**A self-heating flat iron—always hot.** A convenience that cuts the work of ironing day in half—enabling you to do better work in quicker time and in greater comfort. No hot stove—no roasting kitchen—the heat is all in the iron.

The PILOT is bringing all these comforts and conveniences to "mothers" in other country homes.

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Ask the "mother in your home" how much this beautiful, clean, always-ready light—a real gas stove and gas iron—will mean to her.

Ask yourself if she has not earned this comfort and convenience—when you consider its low cost—a thousand times over.

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# Essentials of the Federal Rural Credit Law

By DR. W. O. HEDRICK

WITH the affixing of the President's signature to the federal farm law bill on July 17 the struggle in Congress for the enactment of a rural credits law, which has gone on for six years or more, came to an end. Few themes pertaining to agriculture have had greater publicity than has this question of providing farmers with better facilities for credit. Suitable credit facilities in fact, constitute a demand which is emphatically new to the American farmer, and it has come up in the present instance in connection with our other economy problems, such as conservation of resources, reducing the cost of living and the suppression of tenantry.

The use of credit in farming is itself a practice which has not had in the past widespread popularity with farmers. A very easy computation from governmental data shows that not more than sixty or seventy dollars of credit on the average has been ordinarily used upon the American farm. This aversion has doubtless been due largely to the difficulties of getting it, to the high interest charges, to the lack of good security, and to no small extent it has been due to the failure of the farmer in not seeing how credit would be useful to him. The establishment now of a system of credit institutions that will serve the farmers, the same as the present system of commercial banks serve merchants, may go far to remedy these difficulties.

## Furnishes Permanent Source of Credit.

The new law gives the farmer an assured source from which to get long time credit. He is now provided with a permanent place by this law at which he may exchange the creditability of his farm for the long time credit which he needs. No one doubts the creditability of a successful farm, but unfortunately it has been the sort of creditability for which there has been only a local and very limited market. Mortgages—the usual evidence of farm creditability—should be as salable throughout the nation as are the stocks and bonds of railroads and manufacturing enterprises, and it is the design of the new law to bring this about. This it attempts to do through the simple trade scheme of changing clumsy slow selling mortgages into attractive, standardized, marketable bonds. Fortunately Michigan no longer penalizes mortgages by putting a tax on them, as was once the case in this commonwealth, consequently it will be an attractive state from which the new banks will seek their mortgages.

## The Farm Loan Associations.

The credit facilities provided for in the new law consists of two agencies, the Farm Loan Association and the Land Banks. Farm Loan Associations are the local organizations of borrowing farmers who see to the placing of the loan, collect the interest, see that the mortgaged farms are kept up, and in other ways act in the neighborhood as the representatives of the Land Banks. These associations must include at least ten persons, desiring in the aggregate to borrow at least \$20,000 for purchasing land or for making permanent improvements. To insure the trustworthiness of these Loan Associations their members must be stockholders to the extent of five per cent of their borrowings, and the Association itself is made responsible to the Land Banks by being required to buy stock in one of these latter to the extent of five per cent of its collective borrowings. Co-operation is the keyword to Loan Association, as to style of organization, duties and responsibilities, and a distinct addition is made to our list of co-operative concerns through the addition of these credit placing and marketing exchanges.

## The Federal Land Banks.

Exactly as the Loan Associations are the local buyers of mortgages—for this they are through placing loans to their members—the huge centrally lo-

cated Land Banks are the distributors of the same—though as they issue from these latter agencies the mortgages have been transformed into land bonds. These Land Banks are to be twelve in number, assigned to districts of the same number, which together shall be inclusive of our whole country. Each one is to have a minimum capitalization of \$75,000 and the usual organization and responsibilities of an incorporation. The establishment of these banks is absolutely guaranteed under the Farm Loan law since the federal treasury pledges itself to this end through buying up all the stock in these institutions left unsold at the end of thirty days. The supervision of these banks, as well as the supervision generally of the whole system, is intrusted to a Federal Farm Loan Board whose members number five, and who receive their appointments from the hands of the President.

## How the Law Works.

The working plan of the new law must now be described in order that the Michigan farmer may see exactly in what way he is to benefit from its provisions. Immediately upon the appointment of the new Farm Loan Board the twelve large Land Banks will be established, since, as we have seen, the federal government stands ready to capitalize these promptly if means are not readily forthcoming from private capitalists. Loan Associations will now be formed, say of Michigan farmers, within the land bank district of which Michigan is a part. One of these loan associations will solicit a loan from its Land Bank, and in return for this loan will transmit an equivalent value of farm mortgages which it has secured from its

members. These mortgagor members now receive their individual loans, and the services of the loan associations in this transaction are at an end. Mortgaging through these associations is made attractive to the farmer through the plan that he may have a long time in which to repay his loan. The repayment also is divided up into uniform installments of interest and principal, so that by keeping up the payment of these installments of say \$80 per year for twenty years, a debt of \$1,000 becomes extinguished. Mortgaging in this way is also made attractive through the limitation of interest charges, which the new law imposes, to a net six per cent rate. Furthermore, this must be lowered if the Land Banks are able to sell their land bonds advantageously.

## Bonds Are Bought by Public.

The Land Bank has now disposed of its original capital to the loan associations, and to repeat their loans to these associations or to make new ones it must now make a sale of first consignments of mortgages to the investing public. This it is able to do to advantage.

First, because it is a large institution and therefore well known;

Second, finding mortgages unsalable, as is usually the case, it transforms these instruments into equal values of small denomination bonds upon which it pays a rate of interest within one per cent of the rate paid by the farmer upon his mortgage;

Third, bonds of this sort are exempt from taxation of every kind and are legal investments for trust funds. No security sells so readily and so universally as a bond, and it is doubtless this clever notion of converting mortgages

into bonds which forms the king pin of the whole farm loan plan. Having sold its bonds in the money market the Land Bank is now equipped again with capital wherewith to make loans to the local associations, whence it again secures more consignments of mortgages to be in turn again also sold to the public.

The law will prove especially helpful to farmers who are tenants, or to others who wish to become farm owners; to farmers having drainage, building, or equipment problems upon their hands; and to western farmers who must irrigate. Michigan as yet admits to no distress from tenantry except in spots, but it shows a strong feeling for farms of about family size, and the would-be buyers of these farms will be vastly benefited by the land loans. As is well known, this is the credit scheme which has proven so helpful to European farmers everywhere, so it comes to us justified by experience and guaranteed through practical success elsewhere. In the interests of completeness another part of the law permits the formation of private joint stock companies to perform the rural credit functions described above, if this alternative seems desirable. But the support of the United States government to the cause of rural credit is emphatically given to the co-operative loan associations plan outlined above—a plan which in addition to its excellent native qualities will also serve to keep the handling of rural credit in the hands of farmers where it belongs, and not create a new banking class, as would result from the joint stock plan.

## The Old System.

The use of credit in his farm business is not new to the Michigan farmer. The census data for 1910 shows a use of mortgages in Michigan for securing credit to the extent roundly of \$76,000,000. Much long time credit is also used by the farmers of this state in buying machinery and other equipment which is unsecured by mortgages. An investigation made by the United States Department of Agriculture three years ago shows that in this state an interest rate for mortgages or other long time credit in excess of six and one-half per cent is charged, and that various fees and commissions must also be paid. The same investigation showed that mortgages in this state, on the average, were made out for five and a half years, but that they often over-ran their maturity, and thus become subject to renewal or foreclosure.

The new farm loan scheme becomes an improvement then, upon this Michigan situation at once. The highest rate of interest chargeable by the Land Bank, for example, is six per cent. Our new law recognizes also that no farm should be asked to pay for itself within so short a period as five and one-half years. Neither should a borrower be asked to make repayments faster than the credit which he has borrowed yields these repayments through successful farming. It therefore presents the installment plan for repayments and a long series of years in which they are to be made. There should be, therefore, no question to the Michigan farmer with regard to the greater benefits offered by this new system and the desirability of patronizing it.

Middle-west farmers are realizing more keenly every year that their greatest problems are social and economic problems. They may need to improve their methods of crop raising, but they need much more to improve their living conditions, market facilities, and credit methods. When the towns give vigorous help in these directions, their co-operation will mean a great deal more and will meet a much prompter response and a smaller inclination to depend on mail order houses.

## Direct Marketing Again

If one farmers organization sells peaches to another farmers' organization there would be no middlemen to participate in the deal and the sale would be called a direct sale. The buyers would pay only the necessary charges for transportation and clerical work over what the producer receives.

Advantages would result from this. One would be that the farmers of Michigan outside of the fruit growing districts would enjoy a taste of the delicious peaches grown in the orchards of the state. Comparatively few of our general farmers know the quality of this fruit at present. The good peaches have gone to the cities and some of the poor ones have been peddled out to the rural regions of the state. Many places can be found where during years of abundance the people are unable to get peaches. If the Grange or Farmers' Club or co-operative society of such communities would send to one of the co-operative peach marketing associations for a consignment and have it distributed among the members and neighbors these people would be agreeably surprised and satisfied, and they would remember to repeat the act next year and the year following.

A second advantage is that the market for peaches would be improved by getting rid of a portion of the crop in those localities where there have been few or no peaches sold heretofore. The taking of a few extra carloads from a producing community helps materially in holding up the price. A little pioneering work has satisfied students of marketing that these general farming communities and the small towns located out of the peach producing sections, can and would use a considerable bulk of the fruit if they could get good quality. If the people in Michigan would use Michigan peaches exclusively there would probably not be enough to go around. It is a matter of

no little importance to the peach growers that they get their crop to their neighbors who have none and who are anxious for a supply.

The state is making an effort to aid both parties in this matter. The Director of Markets at East Lansing would be glad to put any farmers' organization in touch with the nearest and most accessible peach shipping association if the request is made. The parties can then communicate with the manager of the shipping association and make arrangements as to varieties, prices, time of shipment, terms of payment, etc. The best service could be secured if three or four contiguous organizations would club together so that a full carload could be shipped and then the allotment for each organization could be unloaded at their respective stations. Michigan's peaches will be ready early in September, so requests should be made at once.

Everyone must feel that this direct-selling movement should be encouraged. Many of these peach growers are without hay and grain for the horses and other stock during the winter. The farmers in the general farming districts could afford to ship their surplus to some of the peach-shipping associations under an arrangement similar to the one suggested for handling peaches. Thus a reciprocal advantage could be secured. Neither party would be required to pay middlemen a tax for the product bought and consequently both would save money and make money.

Just how far this kind of marketing could be developed can only be told by experience, but it is safe to say that where the co-operative spirit is in training it should not be long before a considerable bulk of the things needed can be purchased direct from the grower or manufacturer at prices that will save a liberal margin.



### THE CONDITION OF FALL TRUCK CROPS IN NORTHERN STATES.

The Bureau of Crop Estimates, United States Department of Agriculture, has received from a special list of truck crop growers reports relating to the condition of various truck crops on August 1, 1916. Correspondents were requested to estimate the condition on the basis of 100 representing a normal condition. The results of the tabulation of the replies are given below. These figures represent the trucking district only and not the entire state; therefore, they are not strictly comparable with the figures published in the Monthly Crop Report of the above bureau.

**Onions.**—New York, July 1, 60 per cent, Aug. 1, 58 per cent; Mass., July 1, 87 per cent, Aug. 1, 78 per cent; Ohio, July 1, 82 per cent, Aug. 1, 77 per cent; New Jersey, July 1, 92 per cent, Aug. 1, 70 per cent; Pennsylvania, July 1, 77 per cent, Aug. 1, 70 per cent; Indiana, July 1, 75 per cent, Aug. 1, 80 per cent; Michigan, July 1, 79 per cent, Aug. 1, 72 per cent; Minnesota, July 1, 84 per cent, Aug. 1, 82 per cent; Iowa, July 1, 96 per cent, Aug. 1, 67 per cent; Colorado, July 1, 68 per cent, Aug. 1, 60 per cent; Washington, July 1, 91 per cent, Aug. 1, 85 per cent; Oregon, July 1, 74 per cent, Aug. 1, 70 per cent; California, July 1, 92 per cent, Aug. 1, 87 per cent; Wisconsin, July 1, 88 per cent, Aug. 1, 80 per cent.

**Cabbages.**—New York, July 1, 76 per cent, Aug. 1, 75 per cent; Ohio, July 1, 92 per cent, Aug. 1, 80 per cent; Indiana, July 1, 82 per cent, Aug. 1, 80 per cent; Michigan, July 1, 77 per cent, Aug. 1, 71 per cent; Wisconsin, July 1, 76 per cent, Aug. 1, 73 per cent; Minnesota, July 1, 87 per cent, Aug. 1, 83 per cent; Iowa, July 1, 96 per cent, Aug. 1, 77 per cent; Colorado, July 1, 81 per cent, Aug. 1, 70 per cent.

**Celery.**—New York, July 1, 100 per cent, Aug. 1, 76 per cent; Massachusetts, Aug. 1, 92 per cent; Michigan, July 1, 92 per cent, Aug. 1, 83 per cent; Minnesota, July 1, 88 per cent, Aug. 1, 90 per cent; Ohio, July 1, 93 per cent, Aug. 1, 82 per cent; New Jersey, July 1, 68 per cent, Aug. 1, 81 per cent; Indiana, July 1, 88 per cent, Aug. 1, 78 per cent; California, July 1, 93 per cent, Aug. 1, 95 per cent.

**Cucumbers.**—New York, July 1, 76 per cent, Aug. 1, 78 per cent; New Jersey, July 1, 89 per cent, Aug. 1, 87 per cent; Indiana, July 1, 80 per cent, Aug. 1, 82 per cent; Illinois, July 1, 89 per cent, Aug. 1, 69 per cent; Michigan, July 1, 81 per cent, Aug. 1, 79 per cent; Wisconsin, July 1, 80 per cent, Aug. 1, 83 per cent; Minnesota, July 1, 65 per cent, Aug. 1, 85 per cent.

**Tomatoes.**—Massachusetts, July 1, 64 per cent, Aug. 1, 84 per cent; New York, July 1, 62 per cent, Aug. 1, 77 per cent; New Jersey, July 1, 87 per cent, Aug. 1, 84 per cent; Pennsylvania, July 1, 79 per cent, Aug. 1, 83 per cent; Delaware, July 1, 88 per cent, Aug. 1, 84 per cent; Maryland, July 1, 77 per cent, Aug. 1, 80 per cent; Indiana, July 1, 85 per cent, Aug. 1, 84 per cent; Missouri, July 1, 82 per cent, Aug. 1, 66 per cent; Illinois, July 1, 82 per cent, Aug. 1, 72 per cent; Michigan, July 1, 76 per cent, Aug. 1, 79 per cent.

**Peas.**—New York, July 1, 74 per cent, Aug. 1, 70 per cent; New Jersey, July 1, 80 per cent, Aug. 1, 77 per cent; Maryland, July 1, 80 per cent, Aug. 1, 79 per cent; Delaware, Aug. 1, 87 per cent; Ohio, July 1, 87 per cent, Aug. 1, 77 per cent; Indiana, July 1, 85 per cent, Aug. 1, 78 per cent; Illinois, July 1, 92 per cent, Aug. 1, 78 per cent; Michigan, July 1, 82 per cent, Aug. 1, 70 per cent; Wisconsin, July 1, 80 per cent, Aug. 1, 76 per cent.

### Crop and Market Note

#### Michigan.

**Mecosta Co., Aug. 18.**—Harvesting is in good progress. Some threshing is done. Wheat and oats are turning out well. Clover hay was very heavy and got in in good condition. Corn is very good but beans and potatoes are not so good owing to the dry weather. Will be just a few apples but no peaches or plums. Butter 23c; eggs 22c; butter-fat 28½c; cattle 4@8c; hogs 9c.

**Ingham Co., Aug. 18.**—Big yield of timothy, clover and alfalfa hay. Most oats harvested. Threshing has commenced; corn, potatoes, beans and sugar beets suffering greatly for lack of moisture. Fruit prospects are poor. Short pasture caused retailers to raise the price of milk to 9c a quart. Butter-fat 28c; cows \$5@6; steers \$7@7.50; hogs \$8.50; lambs \$9; calves \$8.50; chickens 14@15c; broilers 20c; pea beans \$4.75; corn 42c; oats 40@42c; hay \$8@10; wheat \$1.25@1.30; rye 80@85c; barley \$1.20 per cwt; potatoes \$1.10; fresh eggs 21c.

**Sanilac Co., Aug. 17.**—Timothy and clover were a bumper crop. Alfalfa has already been cut the second time. Recent showers have started the clover nicely; wheat all harvested, some threshed yielding around 25 bushels per acre. One week will find the oats all secured if weather is fair. Oats promise a fair yield. Corn is a little late but looks good; potatoes rather slim. Dry weather and bugs hit them hard. Beans looking fine and promise well. The prospects are good for fruit. Some silos being erected. Wheat \$1.29; oats 36c; hay, new \$8@10; butter-fat 28c; eggs 23c.

**Muskegon Co., Aug. 17.**—Yield of hay is good. Seeding coming on very well. Wheat and oats are ready to thresh and threshing is commencing. Plenty of moisture and some rye already seeded. Ground is being prepared for wheat. Corn is doing very well. The potato crop will be very light. Beans look well and the crop promises good in some districts but poor in others. No peaches to speak of. Early apples only fair; late apples light crop and rather poor in quality. Milk 13c; butter-fat 28c; chickens 14c; eggs 28c; hay \$12; pork 11½c; beef 9½c. Milk is scarce and the dairies have a hard time to get enough to supply their trade.

**Livingston Co., Aug. 14.**—There has never been, in the writer's experience, a year when so much hay has been harvested and in such good condition as the present season. Wheat was a much better crop than was thought possible earlier in the season. Corn is a good crop but will be very late. Beans are now looking good but the drought injured them somewhat. Farmers are cleaning their granaries of old wheat since the advance in price. Pastures are getting green again since the recent showers.

#### New Jersey.

**Morris Co., Aug. 17.**—The yield of hay and clover was the heaviest in years. Wheat all harvested and oats partly gathered. Corn looks good; peach prospects are fair; apples will be half a crop. Weather has been very showery and farmers have had difficulty in gathering their crops. Help is very scarce. Milk 3c per qt; eggs 38c; butter 36c; hay \$12.

#### New York.

**Niagara Co., Aug. 16.**—A great crop of hay; barns so full there is much stacked in fields. Wheat not good but all cut and stacked. Oats very poor and about half harvested; they are only one-fourth of a crop. Corn growing fast but getting it in so late won't have time to ripen unless we have real late fall. Potatoes are growing fast but are late. Beans well now. Early apples three-fourths of a crop; Dutchess of Oldenburg going at 90c@\$1 per bushel; pears, 5-lb. basket 18c; Jersey 40c; hardly any Bartlett pears. Early peaches just coming on. Good show for Keiffer pears. Light showing for plums and prunes. Butter 25c; eggs 27c per dozen.

**Steuben Co., Aug. 15.**—Hay crop is 25 per cent better than normal as to yield and the quality 10 per cent better. The same applies to clover. But little alfalfa grown. Wheat was harvested in excellent condition and the oat harvest is proceeding under very favorable conditions so far; but the yield will be below normal; corn is growing rapidly but must have very favorable weather to ripen. Potatoes are growing finely but were planted late, this for the main crop. Early ones are ripe without rot, fine quality and good yield. Very few beans grown and no sugar beets. Apple crop promises fairly well, perhaps somewhat lower than an average. Potatoes \$1; apples 80c; eggs 30c; butter 30c; new hay \$10.

#### Ohio.

**Sandusky Co., Aug. 17.**—Cooler with fine showers. Field threshing about done, small acreage; oats making from 20 to 30 bushels. Wheat 20 to 35 bushels. Wheat run is a surprise; the hay crop is extra good; pasture is short, but improving since rain. Corn doing fine on light soil but on heavy soils is very poor. Late potatoes at this time look like a complete failure; bugs are very bad. Fruit a poor crop. Corn \$1.20 per cwt; wheat \$1.35; oats 40c; potatoes \$1.25; lambs \$9.50; eggs 23c; old chickens 14c; young 19c.

#### Wisconsin.

**Jackson Co., Aug. 14.**—Fine growing weather at present, but the extremely hot weather of July injured all growing crops; gardens and potatoes badly damaged; corn and beans recovering, but are backward in growth. All kinds of hay a record-breaking crop, secured in fine condition. Some oats cut for hay injured by drouth. Harvesting in progress. Some threshing done. Fruit injured by the drouth. Butter-fat 30c; eggs 22c; potatoes 75@80c; hay \$5. Some farmers selling hay at \$1@2 per load in the field.

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# Markets.

## GRAINS AND SEEDS.

August 22, 1916.

**Wheat.**—The wheat market has recovered from the small reaction recorded last week, and new high values for the season have been reached with the outlook promising for still higher figures in the near future. The slump last week was the result largely of reports on improved conditions in western Canada; since then more reliable information has been secured and it is now known that conditions there are much worse than at first reported. The British government is already becoming anxious and has even gone so far as to make investigations as to what can be done in securing substitutes for this grain. It appears that the American farmers will set the price for the crop this year as the world supply is reported by the International Institute of Agriculture at Rome as being 25 per cent below last year's production. One year ago No. 2 red wheat was quoted at \$1.10 per bushel. Last week's Detroit quotations were:

|           | No. 2 | No. 1  |       |
|-----------|-------|--------|-------|
|           | Red.  | White. | Sept. |
| Wednesday | 1.45½ | 1.40½  | 1.47  |
| Thursday  | 1.44½ | 1.39½  | 1.45½ |
| Friday    | 1.48½ | 1.43½  | 1.49½ |
| Saturday  | 1.52½ | 1.47½  | 1.53½ |
| Monday    | 1.54½ | 1.49½  | 1.55½ |
| Tuesday   | 1.54½ | 1.49½  | 1.55½ |

Chicago.—September \$1.49½ per bu; Dec., \$1.53½; May \$1.56½.

**Corn.**—There is a fair demand for this cereal with the price two cents above last week's quotations. Weather conditions in the corn belt have been unfavorable and a fairly good general demand exists for the cereal. A year ago No. 3 corn was quoted at 83c per bushel. Last week's Detroit quotations were:

|           | No. 3  | No. 3   |  |
|-----------|--------|---------|--|
|           | Mixed. | Yellow. |  |
| Wednesday | 88½    | 90      |  |
| Thursday  | 88     | 89½     |  |
| Friday    | 88½    | 90      |  |
| Saturday  | 89½    | 91      |  |
| Monday    | 89½    | 91      |  |
| Tuesday   | 89½    | 91      |  |

Chicago.—Sept., 85.6c; Dec., 74½c; May 77½c.

**Oats.**—This grain is handicapped somewhat by a liberal supply of old oats held over. The market, however, enjoyed an advance with wheat and corn. The demand is fair and the tone of the market firm at the new prices. Standard oats a year ago were quoted at 65c. Last week's Detroit quotations were:

|           | No. 3     |        |
|-----------|-----------|--------|
|           | Standard. | White. |
| Wednesday | 45¾       | 45¼    |
| Thursday  | 46        | 45½    |
| Friday    | 46        | 45½    |
| Saturday  | 47        | 46½    |
| Monday    | 47½       | 47     |
| Tuesday   | 47½       | 47     |

Chicago.—Sept., 45c; Dec., 48½c per bu; May 52½c.

**Rye.**—A brisk demand prevails for this grain, and prices have advanced 10c since a week ago, cash No. 2 now being quoted at \$1.20.

**Beans.**—October beans advanced 75c on this market since Saturday with the quotation now ruling at \$4.75 per bushel. Cash beans are steady at \$5.70 per bushel. Many reports are current to the effect that the blossoms have "blasted" and while fields look well, there are scarcely any pods to be found. In Chicago pea beans are now quoted at \$5@7, and red kidneys at \$5.70.

**Seeds.**—Prime red clover \$9.75; alfalfa \$9.85; alfalfa \$10@11; timothy \$2.50 per bushel.

## FLOUR AND FEEDS.

**Flour.**—Jobbing lots in one-eighth paper sacks are selling on the Detroit market per 196 lbs., as follows: Best patent \$7.70; seconds \$7.50; straight \$7.30; spring patent \$6.10; rye flour \$6.30 per bbl.

**Feed.**—In 100-lb. sacks, jobbing lots are: Bran \$25; standard middlings \$26; fine middlings \$30; cracked corn \$30; corn and oat chop \$32 per ton.

**Hay.**—(New) No. 1 timothy \$14@15; standard timothy \$13.50@14; light mixed \$13@14; No. 2 timothy \$12@13; No. 1 mixed \$10@11; No. 1 clover \$9@10 per ton.

**Straw.**—Rye straw \$7.50@8; wheat and oat straw \$6.50@7 per ton.

## DAIRY AND POULTRY PRODUCTS.

**Butter.**—Prices are steady at last week's advanced figures. Extra creamery 29½c; do. firsts 28½c; dairy 23c; packing stock 21c.

**Elgin.**—Prices 1c higher and now ruling at 30½c per lb.

**Chicago.**—Receipts are decreasing, giving the trade a firm tone. Extra creamery 31c; extra firsts 30@30½c; firsts 28@29c; seconds 26½@27c.

**Eggs.**—Market steady with receipts fair. Firsts 25½c; current receipts 21½c per dozen.

**Chicago.**—Market is firm. Firsts 24@25c; ordinary firsts 22@23c; at mark cases included 18@24c.

**New York.**—Trade firm and steady. Fresh gathered extra fine 33@34c per dozen; extra firsts 31@32c.

**Poultry.**—The market is inactive and steady. Quotations for live are: Best broilers 22@23c; No. 1 do. 20@21c; No. 1 hens 17½@18c; No. 2 hens 17@17½c; ducks 15@16c; geese 12@13c; turkeys 21@22c.

**Chicago.**—Market is steady except turkeys which are a little higher, and roosters a fraction lower. Fowls 14@16c; roosters 11½c; spring chickens 20@21c; ducks 14@16c; geese 10@12c.

## FRUITS AND VEGETABLES.

**Apples.**—At Detroit fancy apples are quoted at \$4.50@5; No. 2, \$2@2.50 per bbl. At Chicago No. 1 barrel stock \$2.25@4; No. 2, \$1.50@2. In baskets the price is 75c@1 per bushel.

**Cherries.**—The market is now getting small. At Chicago Michigan Montmorencies are \$1@1.25; few fancy \$2. At Detroit sour cherries are \$1.75@2; sweet do. \$2 per 16-qt. case.

**Peaches.**—Offerings are scarce. Detroit quotations are \$3.50@3.75 per bu. At Chicago the price ranges from \$1@3.25 per bushel, with Elbertas leading in price.

## WOOL AND HIDES.

A very firm undertone prevails in the wool market. There is nothing to help buyers hold values down. Very little has been done in fleeces thus far. Ohio quarter-bloods sold last week at 42c and unwashed delaines sold as high as 39c in Boston.

**Hides.**—No. 1 cured 19c; No. 1 green 16c; No. 1 cured bulls 14c; No. 1 green bulls 12c; No. 1 cured veal kip 23c; No. 1 green veal kip 18c; No. 1 cured murrain 18c; No. 1 green murrain 16c; No. 1 cured calf 29c; No. 1 green calf 27c; No. 1 horsehides \$5.50; No. 2 horsehides \$4; No. 2 hides 1c and No. 2 kip and calf 1½c lower than the above; sheepskins, as to amount of wool, 50c@1.25.

## GRAND RAPIDS.

Michigan peaches are expected to begin coming in some quantities this week. They have been slow in coming and up to this week have been quoted at \$3 per bushel. Early apples have a wide range, with quotations from 50c@1.50 per bushel. Huckleberries have been high so far this season, bringing \$2.50@2.75 per crate. Potatoes are bringing \$1.25 on the city market. The mills quoted No. 2 red wheat at \$1.42 Monday, with not much change in the other grains. Fresh eggs are worth 24c. Hay on the city market brings \$9@11.

## DETROIT EASTERN MARKET.

There was a considerable volume of business on the market Tuesday morning with the prices holding generally steady. Apples sold all the way from 75c@2.50 per bushel, the high figure being for the best Dutchess. Large cucumbers \$1@1.50 per bu; peppers \$1.25@2 per bu; butter beans \$3.25@4 per bu; potatoes 90c@1.50; onions \$1.25@1.50; tomatoes, bulk, sold between \$2@2.75 per bu; corn \$1@1.50 per bag; eggs 35c; loose hay moving slowly at \$16@20 per ton.

## LIVE STOCK MARKETS.

### Buffalo.

August 21, 1916.

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

Receipts here today as follows: Cattle 192 cars; hogs 50 d. d.; sheep 18 d. d.; calves 1000 head.

With 192 cars of cattle today, there were around 40 cars that would do for shippers and the demand was very weak on this class, the bulk of them selling 25@50c lower. There was one choice corn-fed load of cattle landed up to \$10.05, but the bulk of the good cattle sold from \$8.75@9.25. There was a liberal run of cow stuff and the trade was very slow except on a few strictly good cows and heifers, which sold about steady, but the bulk of all the other grades sold 10@25c lower. The bulk of the bulls sold slow but about steady, with a few common kinds a little lower. We look for a fair run of cattle here next Monday and a good market on the strictly corn-fed cattle, but a very slow trade on the medium and grass kinds.

We had a light supply of hogs today, totaling about 50 double decks; demand was good and prices 10@15c higher than Saturday's best time, one load of fancy hogs selling at \$11.35 and a few decks of selected at \$11.30, with the bulk around \$11.15@11.25; pigs and lights, as to weight and quality \$10.25@10.50; roughs generally at \$9.75; stags \$7.50@8.50. Everything sold at the close and prospects look good for the balance of the week.

Sheep receipts were light again today and prices were about steady with the close of last week. Prospects a shade lower last of the week.

We quote: Best spring lambs \$11@11.25; cull to common lambs \$9@10.50; yearlings \$7.25@9.50; bucks \$5.50@6.25; ewes \$7@7.75; cull sheep \$3.50@6; wethers \$8@8.25; top veals \$12.75@13; heavy \$9@11.50; common and light \$10@12; grassers \$5.50@7.50.

### Chicago.

August 21, 1916.

Cattle. Hogs. Sheep. Receipts today..24,000 31,000 22,000 Same day 1915..22,030 19,429 8,973 Last week.....49,609 136,989 86,065 Same wk 1915..42,950 92,317 64,073

The Monday run today is too large for these times, and while fat steers and butcher stock are selling at steady prices, other offerings are 10@20c lower and slow of sale. The receipts include about 3,000 western range cattle, which were not sold at a rather late hour. Hogs advanced 15@20c, with sales at \$9.90@11.10, the best advancing most. Hogs received last week averaged 235 lbs. Sheep and lambs were mostly lower, although a carload of choice range lambs brought \$11.25.

Cattle of desirable quality underwent a good advance in prices last week, with meager offerings of the best class of steers and a strong demand. A large share of the receipts crossed the scales at \$8.75@10.60 on days of large receipts, and by Wednesday there was a very fair business transacted at \$10.65@11.10, the top comparing with \$10.85 for the previous week. Good heavy steers brought \$10@10.60, with sales above these figures consisting of a choice class, while medium to good steers went at \$9.50@9.95 and fair short-fed lots at \$8.75@9.45. Light-weight grass-fed steers sold down to \$6.50@7.50, with better grass steers fetching \$7.60@8.70. Good to fancy yearling steers found ready buyers at \$9.50@11, but very few were choice enough to go above \$10.75, and sales were made down to \$8 for ordinary yearlings. Western range cattle were offered sparingly and brought \$7.90@8.90 for steers, with a sale of 34 prime range cattle averaging 1,368 lbs. at \$9.75. Native butcher cattle were in good demand at firmer values, the better class of cows and heifers sharing in the advance, and even the choice cutters sold higher. Butchering cows sold at \$5.80@8.50 and heifers at \$5.50@5.95, with a sale of 81 fancy Hereford yearling heifers averaging 749 lbs. at \$9.85, while cutters went at \$4.60@5.75, canners at \$3.75@4.55 and bulls at \$5@8.10. There was more doing at times in stockers and feeders than a week earlier, sales covering an extreme range of \$5@7.95 for inferior little stockers to prime 960-lb. feeders, some common 914-lb. feeders going at \$6.65. Calves were in animated demand at higher prices, with light vealers selling at \$12@12.75 per 100 lbs. and fair vealers taken down to \$11, while calves of heavy weight went at \$5.50@9 in most instances, medium grade calves fetching \$9.25@10.75. It was the first week since July that cattle sold as high as \$11. The choicer beefs advanced about 25c, while the common kinds were largely 10@15c higher.

Hogs were not marketed any too liberally last week after Monday, on which day the receipts footed up 47,807 head, causing a quick decline of 10@15c. On subsequent days there was a strong demand on local account, with fair eastern shipping orders for the better class of light and heavy barrows, light weights becoming the most active by Thursday and showing the least decline when the general market happened to be lower. On the whole, it was a good week for sellers, with prices up to the highest time of the year. Prime light weights topped the market by the middle of the week, with prime heavy shipping hogs going later at a discount of 10c. There was an extremely wide spread in prices between the commonest heavy packing hogs and prime light shipping lots. The markets of the country have received this year far larger supplies of hogs than a year ago, but all were needed because of the enormous export provision trade. On Saturday hogs broke all high records of the year by selling at \$9.75@10.50 for heavy packers and at \$10.80@10.90 for prime light shipping, with heavy shipping lots at \$10.55@10.80. Pigs brought \$8@9.85.

Lambs were marketed so unusually freely on Monday last week that the price broke 25@35c, receipts amounting to 29,968 head. Later in the week greatly reduced receipts brought about substantial advances for fat flocks, with range lambs selling far above natives. Range feeding lambs made still another high record, and breeders sold very high. Lambs comprised most of the receipts, and sheep and yearlings were apt to be scarce. Closing week's prices were: Lambs \$8@11.25; feeding lambs \$9.10@10; yearlings \$6.75@8.75; wethers \$5.50@7.75; ewes \$3.50@7.60; breeding ewes \$7@9.50; bucks \$5@6.

Horses were marketed liberally last week, and the good demand for army horses held prices steady, with cavalry horses going at \$150@185 and artillery horses fetching \$150@200. Horses rejected by the army inspectors sold at \$25@120, white feeders of a desirable quality were in limited supply and much wanted at \$165@200 for shipment to New York and Philadelphia. Heavy chunks sold up to \$225, and light delivery wagoners of the better class brought \$190@210. A carload of selected horses for shipment was made up at \$240@270 for animals weighing over 1,600 lbs. and \$200@225 for animals weighing less than 1,600 lbs.

The western range country is producing more beef cattle and less stock suitable for feeding and finishing purposes in the corn belt, so it is up to the corn belt farmers to increase the production if they care to stay in the cattle business. Dry spells in some sections have driven in enough thin stock of late to make them look reasonably cheap for the man in sections where feed is plentiful, but still the county call is less urgent than when prices were 75c@1 higher several weeks ago.

Michigan feeder buyers are taking fewer lambs than usual this season but it is not because they do not want them, but because they are not to be had. They have not given up hope of filling their feedlots before the season ends but the way range owners are talking now it looks as though prevailing conditions will continue all year. In other years because of less profitable prices the range men did not take the trouble to sort their lambs at home but rounded them up and sold them under a severe sort at the market, giving the middle west farmers a chance to buy thin lambs galore.

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## LIVE STOCK NEWS.

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## DETROIT LIVE STOCK MARKET.

## Thursday's Market.

August 24, 1916.

## Cattle.

Receipts 2852. The run in all departments at the local stock yards this week was large for August, especially so with cattle, of which before the week is over, there will have been close to 3,000 on sale, all from Michigan. There was little improvement in the railroad service this week, most of the delay being with the Michigan Central, the Grand Trunk doing somewhat better.

In the cattle division the trade opened with good prime steers bringing last week's prices and other grades 10@15c lower. On Wednesday all grades were fully 25c lower than last week, and quite a large number of late arrivals had to hold over for Thursday. Prices on Thursday were no higher and the trade was very dull at the decline on everything. Milch cows of quality were scarce and sold about steady. Stocker and feeder trade dull.

Prices averaged as follows: Best heavy steers \$8@8.50; best handy weight butcher steers \$7@7.50; mixed steers and heifers \$6.25@7; handy light butchers \$5.50@6.25; light butchers \$5.25@5.75; best cows \$6@6.50; butcher cows \$5@5.50; common cows \$4.25@4.75; canners \$3@4; best heavy bulls \$6@6.50; bologna bulls \$5.25@5.75; stock bulls \$4.50@5; feeders \$6.25@7; stockers \$5.25@6.50; milkers and springers \$4@4.75.

Bishop, B. & H. sold Sullivan P. Co. 3 steers av 1023 at \$8.50; to Nagle P. Co. 1 bull wgh 1070 at \$6.40 cows av 1145 at \$6.50, 4 do av 1007 at \$6.50, 6 steers av 1041 at \$7.50; to Parker, W. & Co. 4 canners av 845 at \$4.25, 2 do av 1005 at \$4.35, 10 cows av 1020 at \$4.25, 7 do av 900 at \$4.25; to Garber 3 steers av 1017 at \$6.60; to Mindick 3 cows av 990 at \$6.10, 15 do av 1001 at \$6.10, 1 do wgh 1030 at \$5.10 do wgh 1250 at \$6.25; to Mich. B. Co. 1 bull wgh 1160 at \$6; to Golden 3 cows av 850 at \$5; to Bray & B. 2 do av 1135 at \$5.50, 1 do wgh 1270 at \$5; to Goose 10 butchers av 717 at \$5.50; to Fine-man 2 cows av 780 at \$4.25; to Hammond, S. & Co. 1 bull wgh 1480 at \$6.35; to Golden 2 do av 1275 at \$5.85, 13 butchers av 672 at \$5.35; to Mason B. Co. 26 butchers av 830 at \$5.60; to Nagle P. Co. 4 steers av 1050 at \$7.25, 2 do av 1165 at \$8.40, 1 do wgh 950 at \$6.30 cows av 807 at \$5.50; to Guero-witch 16 steers av 930 at \$6.65; to McLean Com. Co., 12 feeders av 757 at \$6.25, 6 do av 646 at \$6.25, 8 do av 762 at \$6.10, 1 bull wgh 620 at \$6; to Sullivan P. Co. 2 cows av 1000 at \$5.30 do av 977 at \$5.75, 7 do av 993 at \$5.50, 1 do wgh 1010 at \$5.

## Veal Calves.

Receipts 878. The veal calf trade for good quality stuff was active and 25@50c higher than last week, but the heavy grades are still dull and hard sellers. A few choice on Wednesday brought \$13, but Thursday the best brought \$12@12.75; heavy \$5@8.50.

Bishop, B. & H. sold Thompson 5 av 165 at \$12.30, 3 av 170 at \$12.50; to Sullivan P. Co. 4 av 140 at \$13, 2 av 230 at \$9.50; to Mich. B. Co. 3 av 220 at \$11, 2 av 165 at \$12.75, 3 av 103 at \$11; to Hammond, S. & Co. 2 av 185 at \$12.50, 3 av 235 at \$12, 5 av 125 at \$13.

## Sheep and Lambs.

Receipts 5708. In the sheep and lamb division the trade was slow and lambs were fully 25c lower than they were a week ago. A large number of thin and bucky lambs are coming to market at present that the trade does not want and this class are hard sellers. Sheep brought steady prices. Best lambs \$10@10.25; fair do \$9.50@9.75; light to common lambs \$6@7.50; yearlings \$7@7.50; fair to good sheep \$6@6.50; culls and common \$3@4.50.

Sandel, S. B. & G. sold Thompson 81 lambs av 75 at \$10.50, 22 do av 70 at \$10.25, 83 do av 65 at \$10.35, 39 do av 70 at \$10, 20 do av 90 at \$10.25; to Sullivan P. Co. 23 sheep av 120 at \$6, 13 do av 115 at \$5.85, 4 do av 140 at \$5.75, 24 lambs av 75 at \$10.25.

## Hogs.

Receipts 4598. The quality in the hog division was very common and on Wednesday night a large number of thin stuff was left unsold packers refusing to make a bid on them. There is a wide range in prices between the good and common grades. Wednesday yorkers and heavy brought \$10.50@10.85 but on Thursday Chicago came in 15c lower and \$10.50@10.65 was the range for good here, with an occasional extra fancy at \$10.70; pigs \$9@9.50.

For weeks the receipts of fat corn-fed cattle in the Chicago stock yards have shown a steady falling off in volume, the offerings running mainly to short-fed cattle and grassers. Grass cattle of late have comprised a fast increasing proportion of the daily receipts, and they have declined faster than other descriptions at such times as the market was on the down-grade, although even these have sold at much higher figures than at corresponding dates in recent years. A considerable part of the decline in prices for the best cattle has been recovered, with recent market-toppers selling at \$11.10 per 100 lbs., or 40c below the high time. The poorer grass steers have been bringing \$6.25 and upward, whereas a year earlier the bottom price stood at \$5.60. Five years ago ruling prices for steers ranged from \$5@8.10. Demand continues to center on pretty good steers that can be purchased at not extremely high prices and on fat little yearling heifers and choice cows on the butcher order. No great number of strictly prime steers are needed by killers, and the cause of the liberal premium paid lies in their unusual scarcity. Various feeding districts where corn is scarce and the pastures have been burned during the long drouth have been forced to market a good many cattle prematurely, and it is needless to say that such parts of the country are not in a position to restock their pastures with cattle. Offerings of stockers and feeders are largely inferior or only fair in quality, with small numbers of good stockers and few 900 to 1,000-lb. feeders. Prices are much below the high time of several weeks ago, but they are not at their lowest, as rallies have taken place.

Week after week the hog market continues to show remarkable strength, with quick reactions following any considerable declines in prices. The requirements of the trade are of larger proportions than in most recent years, and larger supplies of hogs are needed, although most of the time the eastern shippers are only moderate buyers, their selections being much the largest usually on Monday. At their highest time this year, which was recently, the best lots of hogs brought \$10.90 per 100 lbs., comparing with \$7.80 one year ago, with prime shipping barrows of light and heavy weight selling the highest. Even the coarsest old, heavy packing sows sell at much higher prices than were paid for the choicest hogs in other years. Fresh pork products are selling much higher than they did before hogs began their upward course in prices, and provisions have had a remarkable boom. A short time ago pork was sold on the Chicago Board of Trade at \$12.65 per barrel higher than a year ago, having moved up \$1.35 in a single week. The hogs recently marketed in Chicago averaged in weight 231 lbs., or 16 lbs. lighter than a year ago, stock feeders having been in the habit of all the year in marketing earlier than in recent years. Very seldom in past years have hogs sold anywhere near as high as they have done recently, and even if corn in feeding districts is selling at 80c per bushel and upward, feeding it to hogs freely is extremely profitable.

On a recent Monday the Chicago market received close to 30,000 head of lambs, yearlings and sheep, the reason for this big run being that sheepmen were afraid that the threatened national railroad strike would prevent marketing the stock immediately. Of course, such unusually liberal offerings meant a bad market for sellers, and even the choicest lambs suffered a quick decline of 35c per 100 lbs. Subsequently the market rallied and ruled higher on smaller receipts. Generally speaking, conditions affecting the market have not changed materially, for the country's supply of everything in the sheep and lamb line is unusually assured. Most of the time fat live muttons meet with an active demand, while the call for feeders and breeders is greatly in excess of the offerings. Finished range lambs grade so much higher than natives that they command a liberal premium over prices paid for the best natives. The available supply of range feeding lambs this year is extremely small everywhere, and prices are more likely to go still higher than lower, although prime lots have sold as high as \$10 per 100 lbs. A short time ago it was learned from Salt Lake City that the lamb crop of the Wood Live Stock Co., numbering about 80,000 head, had been sold to a speculator for \$8.25 per 100 lbs., or \$1.25 higher than was paid a year ago.

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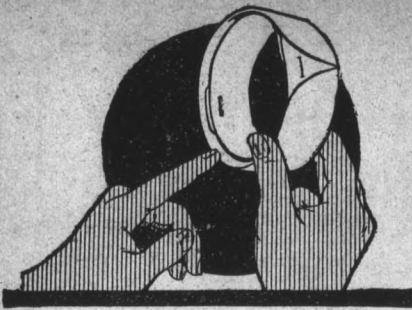
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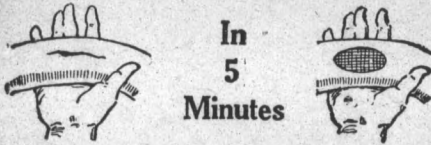
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## Sterilization of Dairy Utensils

THE most modern investigations of the sources of contamination of dairy products have brought forth some very interesting results. The idea that air is a very common source of bacterial infection and disease communication has been very general among people, although difficult to fully believe. So-called airborne epidemics of diseases have been quite commonly referred to by some physicians but we have quite steadfastly pinned our conviction of contagion and infection to some such cause as the food or drink supply or direct and intimate contact.

### Air Not Ordinarily a Serious Source of Bacterial Contamination.

One of the sources of contamination of dairy products which had been almost generally admitted is the polluted air of the stable or dairy room. The most recent scientific evidence along this line indicates that the air of a stable or the air of a milk room may almost be neglected or ignored as a source at least, of bacterial infection of dairy products. We do know definitely that the dirt of the stable and the filth of the stable which may gain access to the milk through the medium of a wide-top milk pail cannot be, as some have asserted, a negligible factor, for a simple examination of some of this material which ordinarily may fall into the milk pail will satisfy the most skeptical that it is a source which should be guarded against.

However, we are quite free to admit that in dairy stables as they exist today in by far the majority of instances these sources are not the ones which account for the enormous bacteria counts which some milk yield.

### Unclean Dairy Utensils Account for Most Bacteria.

It is very evident from the result of certain investigations that the most common and abundant source of bacterial contamination is unclean dairy utensils. By this we mean unclean milk pails, unclean milk cans, strainers and strainer cloths, separator bowls, etc.

Even in those homes where scrupulous cleanliness is supposedly observed bacteria counts of the milk indicate some source of contamination apparently beyond the control of the dairyman or the one having charge of the milk supply. We are convinced that this in many instances may not be due to uncleanness, per se, but due to the fact that it has seemed impossible for the farmer or small dairyman to arrange any adequate means of sterilization for the various utensils employed. Steam Not Considered Available on the Average Farm.

It has always been considered that severe prolonged treatment with boiling water or efficient steam sterilization should be practiced, either of which impose burdens on the average farm, which makes the practice quite out of the question. The Bureau of Animal Industry, United States Department of Agriculture, have published a bulletin describing a simple sterilizer for farm dairy utensils which should be in the hands of every dairyman. This bulletin, No. 748, can be obtained by applying to the United States Department of Agriculture, and describes in detail just how this sterilizer may be operated. It is a utensil well within the reach of every farm home.

### The Way it is Done.

In the demonstration made in Detroit before the American Association of Dairy, Food and Drug officials, the practical value of this utensil was shown. The use of an ordinary gasoline or kerosene stove with a dripping pan to hold the water and a simple tin or galvanized iron cover with a spout projecting up in the middle for the liberation of the steam is practically all there is to the apparatus. The milk can or pail is thoroughly washed to remove all adhering grease and material which can be removed by water and a

brush. The pail or can is then rinsed and inverted over the spout on the cover to the dripping pan. Live steam is emerging from this spout as it emerges from a tea kettle when the same is boiling, and in the course of five minutes from the time the can or pail is put over the sterilizer pretty efficient sterilization has taken place. It may be seen that this can be done with very little effort and takes very little time, with an exceedingly small expense involved. The strainer cloths, can covers, pail covers, separator bowls, etc., are then put into a galvanized iron box which stands over the sterilizer in the same way the can did; the cover is then put on and these are allowed to receive the steam treatment for at least five minutes.

Bacteria counts made from sterile water put into the cans and pails after this treatment have shown almost a negligible number of bacteria. Samples of milk from the same source and divided, one put in a can before sterilizing and another put in a can after sterilizing with this treatment show astounding variations in bacteria count.

Another use to which this sterilizer can be put in the home would be for the sterilization of all of the dishes and glass in use in the home, a much better way than the one commonly employed involving the washing of the dishes and subsequent drying with a dish towel.

For the benefit of those who have not had access to this bulletin we wish to print herewith the exact conclusions or points to remember in this bulletin.

At this point we wish to have it clearly understood that while we do not consider the air of a stable as a very abundant source of bacterial contamination we do consider that foul air in a stable or in a milk room is exceedingly undesirable because milk is apt to readily absorb the stable odors and stable odors exist even when bacteria are not present.

### Points to Remember.

1. Rinse utensils in cold water, then wash thoroughly with hot water and washing powder. Utensils must be washed clean before sterilization. Sterilization is not a substitute for washing.

2. One inch of water in the roasting pan will furnish steam at a temperature of 211 degrees F. for about 50 minutes. If the sterilizer is operated for a longer period, water should be added to make up for loss by evaporation.

3. The temperature of the steam as it comes from the outlet pipe must be at least 205 degrees F., and preferably 210 to 211 degrees F.

4. Cans, pails, covers, and strainer cloths must be steamed for a full five-minute period. Longer steaming will do no harm, but is not necessary. The five-minute period must be reckoned from the time the can is placed inverted over the steam outlet, and the steam must be at least 205 degrees F. when the can is placed in position.

5. An accurate thermometer, with a scale reading to 212 degrees F. is necessary to determine the temperature.

6. When a can or pail is placed over the steam outlet its top should rest on the four raised metal supports in order to keep it three-eighths of an inch above the surface of the pan. This is necessary to prevent the water from the condensed steam from sealing the opening below the can or pail. If this space is filled with water, steam will not enter the can.

7. No arrangement is provided for the water from condensed steam to run back into the roasting pan. This can be arranged if found desirable. When only a few utensils are to be sterilized the water can be soaked up with a towel if the quantity has become too great, or the whole cover may be lifted and the water allowed to run off.

8. Some form of insulation is recommended for use over utensils which

are being sterilized in a cold room. A blanket easily can be made for this purpose. This is desirable in order to keep the cans or pails hot long enough after sterilization to dry out quickly.

9. Cans should be dry in one or two minutes after removal when placed upright. If they do not dry within that time, they have not been sufficiently heated or were not washed clean.

10. The drying of dairy utensils after washing and sterilization is extremely important, for bacteria may develop in moist cans.

11. After the utensils are sterilized and dried, they should be placed in a room free from dust and should not be touched until milk is placed in them. Pails after steaming and drying should be placed upright in a clean, dry, covered wooden or metal box, where they should remain until milking time.

12. The sterilizer has been designed with the intent of making it both cheap and simple, to give the desired results.

13. When using a kerosene or gasoline stove the sterilizing should be done in a room where milk is not handled, as the milk may absorb the odor of the oil.

14. The sterilizer may be used advantageously for separator parts, which should be steamed in the box used for can tops. In case they do not fit, a special metal box should be made.

15. After use, the parts of the sterilizer, especially the roasting pan and cover, should be cleaned and wiped dry, to prevent rusting.

16. The sterilization of dairy utensils is a matter of very great importance, and producers are urged, for their own advantage, to prevent the introduction of vast numbers of bacteria into their milk from unsterilized utensils which may look clean to the eye. Under ordinary circumstances bacteria grow rapidly in milk and spoil it, thereby causing losses to the producer and others.

### A SCRUB SIRE NEVER PAYS.

Quality becomes more essential to profit in live stock farming each season. When labor, land, and feed were cheap it was possible to realize a profit on live stock of an inferior grade, but with the present high cost of these production factors and a constant discrimination on the market against the "scrub," it has become evident that the greatest profit can be expected only from live stock of good quality. It may be possible for the feeder or dealer to make a profit on inferior live stock if he is able to buy it sufficiently cheap and sell quickly, but usually someone has not realized the greatest possible profit when a "scrub" goes to market. If it is not the feeder, it is the man who produced the animal.

At the Missouri Agricultural Experiment Station, lambs sired by a \$30 mutton ram out of western ewes weighed 2.54 pounds more at three months of age, than lambs out of the same kind of ewes by a "scrub" ram weighed at four months. The well-bred lambs were ready for market a month earlier, they ate only about one-half as much feed, and they sold for nearly \$3 more per hundred than did the lambs by the inferior ram.

Just recently two Utah ranchmen are reported to have sold their cattle on the same market on the same day. Both used the same amount of national forest range per head and paid the same grazing fee. One had used good bulls to produce his cattle, the other had not. The good cattle brought \$40 per head more than the poor cattle.

Whether the live stock is cattle, hogs, sheep, or horses, the good ones are appreciated when sold and consequently bring higher prices and normally greater return. The most practical means of improvement is through the use of good sires, for the male may become the parent of from 40 to 100 animals each year.

Mo. Ag. Col. E. A. TROWBRIDGE.



## Grange.

### STATE GRANGE OFFICERS.

Master—John C. Ketcham, Hastings.  
Overseer—C. H. Bramble, Tecumseh.  
Lecturer—Dora H. Stockman, Lansing.  
Secretary—Jennie Buell, Ann Arbor.  
Treasurer—Frank Coward, Bronson.  
Executive Committee—C. S. Bartlett, Pontiac; Geo. B. Horton, Fruit Ridge; J. W. Hutchins, Hanover; W. F. Taylor, Shelby; Wm. H. Welsh, Sault Ste. Marie; N. P. Hull, Dimondale; Burr Lincoln, Harbor Beach.

### MEETING OF STATE GRANGE EXECUTIVE COMMITTEE.

The members of the Grange throughout the state are entitled to know as early as possible what business is done by the executive committee of the State Grange, therefore, I desire to give a brief account of the last meeting of that body that occurred in Jackson county on Friday, August 4.

Chairman Hutchins called the meeting to order at 10 a. m. at the Otsego Hotel. Bro. Horton announced that the constitution and by-laws, suitable for adoption by co-operative organizations within the Grange, were printed and ready for distribution.

Bro. C. S. Bartlett made a partial report concerning the expenditure of State Grange money in the coming dry campaign. It seems likely now that the State Grange will arrange for a large number of meetings in localities remote from town and will endeavor, as far as possible, to provide good local speakers at these meetings, though doubtless some Grange speakers will be put into the field.

A conference will be held later with representatives of the Anti-Saloon League and the program will be definitely arranged.

August 4 was the date of the Jackson County Pomona and at 11:30 our committee was asked to adjourn and ride out to North Leona Grange to dinner, and something else. Surely it was a jolly crowd, beyond any question, it was a good dinner. There ought not to be any doubt about it, for actions speak louder than words, and every member of the committee was in action.

North Leona Grange is one of the liveliest in southern Michigan. Jackson county Pomona is doing good work and the meeting of August 4 was surely a very successful one. The members of the committee attended the afternoon session, sharing the enthusiasm and making short addresses.

Mrs. Stockman, the State Grange Lecturer, addressed the audience in the evening. We regret we were unable to remain but our committee reconvened at 4:00 p. m., and excepting a short recess for supper was in session until 11 o'clock.

Worthy Master Ketcham announced that his intention of putting on a live Grange camping throughout the state in September and October.

Previous to our meeting, letters had requesting a referendum upon the question of submitting the "Tonnage Tax" measure this fall. Replies to these letters indicated that nearly 70 per cent of the organizations favored submitting the bill.

The legislative committee was therefore instructed to have printed copies of the "Torrens Bill" and "Tonnage Tax" measure with accompanying petitions and get both out to the Granges as soon as possible.

The committee on marketing was instructed to form a plan by which fruit and produce could be distributed at least expense in localities where there was a good demand.

The next meeting of the committee will occur early in September at which time the primary ballot for the election of State Grange officers and for members of the executive committee will be prepared.

At this meeting the question of taxation will be thoroughly discussed and two or three prominent men will probably address the committee upon this subject.

## Farmers' Clubs

### OFFICERS OF THE STATE ASSOCIATION OF FARMERS' CLUBS.

President—R. J. Robb, Mason.  
Vice-president—C. B. Scully, Almont.  
Secretary and Treasurer—Mrs. J. S. Brown, Howell.  
Directors—Alfred Allen, Mason; C. T. Hainline, Alma; W. K. Crafts, Grass Lake; Edward Burke, St. Johns; Mrs. C. J. Reed, Spring Arbor; Roy E. Moore, Bellevue.

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

### Associational Motto:

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

### Associational Sentiment:

"The Farmer: He garners from the soil the primal wealth of nations."

### THE FARMERS' CLUB RALLY.

The Farmers' Club Rally, held at the Michigan Agricultural College on Wednesday, Aug 16, was a decided success from all points of view. There was an attendance of about 300 members and fully 100 farm folks who are not yet members of a local Farmers' Club. A permanent organization was formed with a view to making such a rally an annual event. A detailed report of the meeting will appear in this department in an early issue.

### CLUB DISCUSSIONS.

**Annual Picnic Meet.**—The Rives and East Tompkins Farmers' Club held their annual picnic at Coming's Grove, Pleasant Lake, Saturday, August 5. After the picnic dinner the program of sports arranged by Mrs. Grace Seaman and Mrs. Ina Stringham, was taken up. The sports were in the following order: Boys' race, under 14 years of age; girls' race, under 14; egg race and sack race for all; three-legged race; young ladies' race; girls race over 14; relay race; cracker-eating contest; men's race; nail driving contest for ladies. The judges were Mrs. Styles, Mr. Styles and Mr. Henry King. The prizes were donated by the merchants of Rives and others interested in the Club. After the sports the young people went to the other side of the lake and spent the remainder of the afternoon in skating, boating and bathing. The next meeting will be with Mr. and Mrs. Styles September 2.

**A Thousand Strong.**—It is estimated that more than a thousand farmers and business men, their wives and children, attended the Aetna Farmers' Club picnic at Riverside Park on White River. Nearly every section was represented and the sports and addresses furnished a good time for everyone. The Erickson Family Band of White Cloud was one of the big features of the occasion and all enjoyed the splendid music rendered. The afternoon program was opened with prayer by Rev. J. F. Bowerman. Readings were given by Mr. and Mrs. Edward Warren and Ford Brooks, and T. I. Fry represented the Fremont Board of Trade and C. E. Morris the White Cloud Board of Trade in giving short talks. The principal addresses were given by C. A. Spalding, Prof. R. J. Baldwin and Dr. Eben Mumford, of M. A. C. At the close of the program County Agent Blandford was called for and gave an address. Chas. Barnhard, president of the Club, presided. Aetna's progressive farmers are to be congratulated upon the success of their first big united effort. The picnic will promote a unity of interest and a closer neighborhood feeling in the Aetna district and has also served to bring farmers and town people into a closer social relationship.

**A Profitable Summer Meeting.**—Mr. and Mrs. Otto Zemke entertained the members of the Ellington-Almer Farmers' Club for the August meeting, on Thursday afternoon, August 10, when, with President J. P. Richardson in the chair a fine program of music and recitations was given. H. P. Bush recited in German dialect "Mickle Snider's Party." Mrs. B. B. Reavey gave a recitation in German, Miss Martha Seeley favored the company with a violin solo and Mrs. Edwin Dyer and Mrs. Max Zemke sang a beautiful duet. The September meeting will be held with Mr. and Mrs. T. K. Arnold in Almer.

## Opportunity Will Knock at Every Michigan Voter's Door August 29th



WILLIAM H. HILL

Candidate for the Republican Nomination for United States Senator August 29th.

On Tuesday, August 29th, the Republican voters of the State of Michigan will be given the privilege of attending the Primaries and declaring their preference for the nominee of their ticket for the office of United States Senator.

This is Opportunity spelled with a big O—an opportunity that should be highly cherished and acted upon with religious zeal.

Too often the Primary is an opportunity lost—an opportunity ignored with no realization of what the value is to the individual voter. The voter deaf to the knock on the door August 29th is the man who deliberately neglects his own best interests. He is like a business man who permits a few self-seekers to choose his general manager and his executive staff.

### Wm. H. Hill's Plea.

William H. Hill, Detroit business man and candidate for the Republican nomination for United States Senator, urges all voters to wake to their great opportunity August 29th.

Mr. Hill believes that a change—a new deal—is extremely desirable and that now, more than ever in the history of this country, experienced business men are needed in the Senate.

European conditions will greatly complicate both our domestic and our foreign problems for several years to come—especially industrial, commercial and trade affairs. Business men

of broad experience and trained judgment are needed to work out the difficult problems, that the best interests of all the people may be served.

The days to come will be days for action—vigorous, constructive action—without fear or favor, with every act inspired by undiluted, simon-pure Americanism.

In the days to come there will be no place for the do-nothing, the timid job-holder, the man-afraid-of-the-cars, the fellow with one eye on the next election and the other only indifferently good. Every man in the Congress of the United States should be equal to his task and endowed with sufficient courage to perform it—come what may when the next election day arrives.

This is William H. Hill's conception of office holding in the federal government and the way he looks at the government problems that are looming up. He demands vigorous action based on sound business principles and pure Americanism. He demands also a representation for Michigan in the halls of Congress that will win for this great state the position she is entitled to and the prestige she deserves and once had.

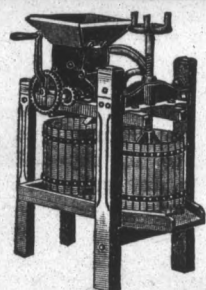
### Why Wm. H. Hill Is a Candidate.

William H. Hill, of Detroit, has been urged by hundreds of men throughout the state who know him, to place himself before the people of Michigan at the Primaries August 29th as a candidate for the nomination for United States Senator on the Republican ticket because they know that he has—first, the courage of his convictions; second, that if nominated and elected he will be a man of achievements; and, third, that his long business training and experience will be a guarantee that his acts will be constructive and for the best interests of all the people all the time and not for the interests of a favored few.

Mr. Hill has consented to run and he has pledged himself, and does hereby pledge himself, if nominated and elected, to administer the affairs of his office in a businesslike manner. His viewpoint will be that running a government is a business proposition and that as a representative of all the people he must work for "the good of all"—and in a manner enable every man at any time to tell just where he stands.

If you want a new deal, a business man for a business man's job, a worker always above board, a man who acts and accomplishes—grasp your great opportunity Tuesday, August 29th. Get out and vote; and place an X before the name of Wm. H. Hill. This is a Paid Advertisement.

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Gladwin, Michigan

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In Gladwin and Midland Counties, Michigan. Well located, Low prices and easy terms. Staffed Bros. (owners), 15 Merrill Bldg., Saginaw, (westside), Mich.

### Money-Making Farms

15 States, \$10 to \$50 an acre; stock, tools and crops often included to settle quickly. Write for Big Illustrated Catalogue. E. A. STROUT FARM AGENCY, Station 101, 150 Nassau St., New York.

**200 ACRES:** Fertile loam soil buildings, fences, water, roads and market. Near Detroit, low price and easy terms. Dr. D. A. MacLachlan, 1301 Majestic Bldg., Detroit, Mich.

**CENTRAL Michigan Farms.** Best general farming country in world. Real bargains. Easy terms. Write for list A. Benham & Coats, Hastings, Michigan.

**FOR SALE** 140-Acre Farm—2 miles from Coldwater, Mich. House and barn, good land. Carmi R. Smith, Niles, Mich.

**WILL exchange** 2 story brick store building. Also 40-acre farm 1 1/2 mile from town for a larger farm in central Mich. Write owner Joe Kozony, Boyne City, Mich.



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**Barred Rocks Parks 200 Egg Strain** with records to 290 eggs a year—\$1.50 per 15. Delivered. By Parcel post. Fred Astling, Constantine, Mich.

**Barred Rock Eggs**, Cock birds, hens. Four pullets laid 950 eggs in one year. W. C. COFFMAN, BENTON HARBOR, MICH.

**GET YOUR ORDER IN EARLY FOR** Cockerels from Cousins Northern King Strain Barred Rocks. Write David W. Cousins, North Port, Mich.

**Buff Leghorns** Exclusively. Now is the time to buy pure bred stock at a big reduction in price. Dr. William A. Smith, Petersburg, Michigan

**JOHN'S Big Beautiful Barred Rocks** are all hatched, developed quick, good layers, each \$3; pair \$5; sold on approval. Circulars, photos. John Northon, Clare, Mich.

**FOR SALE** Pure bred S. C. Buff Leghorns and white Plymouth Rock cockerels. Kletzien & Webster, Bath, Mich.

**Fowlers' Buff Rocks** Prices reduced one half, balance of season. Utility eggs \$1.75 for 15, \$1.50 for 30, \$2 for 50, \$3.50 for 100. R. B. FOWLER, Hartford, Mich.

**Breeding Cockerels** White, Brown, Buff and Black Leghorn, Barred Rocks, Rhode Island Reds. Prices Reasonable. Sunnybird Poultry Farms, Hillsdale, Michigan.

**ORPINGTONS** —White, Single-Comb Kellerstrass 8 wks. old chix Cockerels 75c., pullets \$1. up. M. E. THOMPSON, Redford, Mich.

**Pine Crest, S. O. White Orpingtons.** Bargain, 4 yearling hens and cock, \$3, \$2 and \$1.50, just one half what they will cost next spring. MRS. WILLIS HOUGH, Pine Crest Farm, Royal Oak, Michigan.

**300 R. I. RED HENS**, Rose and Single Comb. Write for Price List. Sell your mongrels and buy pure bred R. I. Reds. INTERLAKES FARM, BOX 39, LAWRENCE, MICH.

**Rose and Single comb Reds**, young and old, for sale. Correspondence as to your Red needs invited. JENNIE BUELL, Ann Arbor, R. 8, Michigan.

**Rose Comb Brown Leghorns** Kulp and Gale strains \$2.50 per 100 eggs. Cockerels 50c each. CLAUDIA BETTS, Hillsdale, Mich.

**Ferris Leghorns**—200 Egg Strain—Eggs, chicks, 8 week old pullets from hens with records up to 264 eggs. Prize winners at largest shows. Prompt shipment, prices low, quality guaranteed. White Leghorns are best for eggs. We raise thousands. Free catalog and price list gives particulars. Write for it now. FERRIS LEGHORN FARM, 934 Union, Grand Rapids, Mich.

**RHODE ISLAND REDS and PLYMOUTH ROCKS.** Males 5 to 12 lbs. according to age \$2 to \$5; P. H. hens weight 5 to 10 lbs., eggs 15 for \$1.00, 100, \$5; 120, \$6. Mammoth Bronze Tom Turkeys, 8 to 38 lbs. according to age \$6 to \$25, 10 eggs \$3. A. E. Cramton, Vassar, Mich.

**S. S. Hamburg Eggs** reduced prices, balance of season. Free delivery. R. C. white Leghorn hens \$1.00, Belgian Hare Bucks \$5.00 with Pedigree. RIVERVIEW FARM, Vassar, Mich.

**SILVER GOLDEN AND WHITE WYANDOTTES.** Eggs from all matings, 150 per 15, \$2.50 per 30 until July 1st. C. W. Browning, R. 2, Portland, Mich.

**White Wyandotte** Cock & Cockerels. Eggs \$1.25, \$3, per 15, \$4 per 50, \$7 per 100. DAVID RAY, 202 Forest Ave., Ypsilanti, Michigan.

**WHITE WYANDOTTES.** Eggs \$1.50 per 15, \$2.50 per 30, \$7.00 per 100. From choice stock. A. FRANKLIN SMITH, Ann Arbor, Michigan.

**ALLIEN VERMIN PROOF PERCH** Farm, Willis, Mich., their **Hollow Self-filling Kerosene oil** soaked Roosts are sure death to Lice, Mites, Vermin. Circular.

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**HOUNDS FOR HUNTING**—Fox, Coon and Rabbits, all ages. Send 2 cent stamp. HOLMESVILLE, Ohio. W. E. LECKY.

**FOX, COON, SKUNK, HOUNDS** Broke to gun and field, and guaranteed. Fox, coon & rabbit hound pups, from the best of stock—\$5.00 each. Stamp for photos. H. C. Lytle, Fredericksburg, Ohio.

**PURE BRED SCOTCH COLLIE PUPS.** Belgian Hares and R. and S. O. R. I. Reds for sale. Good quality, prices reasonable. O. E. Hawley, Ludington, Mich.

## BREEDERS' DIRECTORY.

Change of Copy or Cancellations must reach us Ten Days before date of publication.

## CATTLE.

## ABERDEEN ANGUS

We have a choice lot of Bull Calves, that are 6 to 12 months old and another crop coming. I will be pleased to have you visit our farm, where we have a stock show every day; we will also have a show herd at the Michigan State Fair. U. L. CLARK, Hunters Creek, Mich. SIDNEY SMITH, Manager.

## ABERDEEN-ANGUS

**HERD ESTABLISHED IN 1900.** TROJAN-ERICAS and BLACKBIRDS only. Also breeders of Percheron, Hackney and Saddle Horses. WOODCOTE STOCK FARM, Ionia, Mich.

**AYRSHIRES**—One of the foremost dairy breeds. The most economical milk producers. Calves for sale. White Leghorn cockerels; Duroc Jersey swine. Michigan School for the Deaf, Flint, Michigan.

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Grass Lake, Michigan,  
**GUERNSEY CATTLE**  
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## BARGAINS IN 3 REGISTERED GUERNSEY BULLS

Must be sold this month. Three year old \$100; ten months old \$50; seven months old \$30. If you see you will buy.

**J. K. Blatchford, Windermere Farm,**  
WATERLIET, MICHIGAN

Reg. Guernsey Bulls, serviceable age, great grand sons of Gov. Chene, also grade Guernsey and Jersey heifers 6 wks old \$20 each. Avondale Stock Farm, Wayne, Mich.

## Poultry.

## TURKEYS.

Turkeys do not need much grain during the summer, as they get their living from the gleanings of the field. No other kind of fowls will forage so well at this season as turkeys. They will clear the corn of grasshoppers and pick up much in the stubble fields that everything else has overlooked. But we do not like them to shift entirely for themselves. They grow more rapidly, are not so apt to become wild and roost away from home when fed a little corn at night. We are careful about feeding too much corn in hot weather. And we always feed turkeys away from other poultry and keep them out on the range as long as possible. Turkeys that get the habit of hanging around the house and eating with the chickens are generally stunted in size and of poor color.

The most essential point with breeding turkeys is first of all, vigor. Now is the time when it is easy with plenty of range to secure vigor and large frames. Nature will put on the weight later on.

Large losses occur every year about this time when turkeys are allowed to roost away from home. Some say the Bronze turkeys are more apt to wander away and forget to come home than other varieties; but we have always found that any kind of turkeys will stray away if allowed to stay out at night. They must be brought home evenings until they learn to come home.

Plenty of fresh drinking water where they will find it when they come in from foraging makes home more attractive to these fowls. They require a considerable amount of water and they will go miles to find it. Drinking stagnant water such as they get around stables and when streams are low in hot dry weather will cause bowel trouble.

Another thing that will cause their bowels to get out of order at this season and early in the fall is the feeding of new corn.

Indiana.

FRANCES WOOD.

## ROUP.

Can you tell me what is wrong with my chickens? About half of my flock has died. The first symptoms noticeable is drooping of the wings, a humped up back, loss of appetite, also swollen and watery eyes. They dump around for about a week and then die. Isabella Co. S. W. H.

Your hens have roup, or contagious catarrh, which is a very common poultry disease. While it is a contagious disease vigorous fowls are fairly resistant to it, especially if they are in clean, dry and well ventilated quarters. Roup is a contagious form of a cold and conditions which cause it are dampness, filth and a lack of ventilation.

It seldom pays to give individual treatment unless the birds are expensive ones, but to check the disease isolate all affected birds, bury or burn the dead ones and thoroughly clean and disinfect the coop. Remove all the litter and filth and then thoroughly spray the coop with some good disinfectant. If the floor is an earth one remove the top soil which is soiled and replace with fresh earth.

The drinking and feeding utensils should be thoroughly and frequently cleaned and about two teaspoonfuls of a saturated solution of permanganate of potash should be added to every ten gallons of the drinking water. This solution is a good internal disinfectant and is quite valuable in controlling the roup. Feed the hens nothing but fresh clean food and be sure that the coop has plenty of ventilation without draft.

The most common method of giving an individual treatment for the early

stages of this disease is to press together the nostrils with the thumb and forefinger two or three times to cause the loosening of the accumulation in the nostrils and then immerse the head of the fowl for about 20 seconds in a one per cent solution of permanganate of potash.

## TRANSFERRING BEES FROM BEE-TREE.

I have a swarm of bees in a tree, that is, they make their home in the tree, and would like to know if there is any way of getting them, without cutting the tree. If I put a bee hive in the tree would they go in there and stay? If I have to cut the tree what time of the year is best? Will any more bees hatch this summer. Please let me know the best way to get them.

Van Buren Co.

W. M.

It is a fairly easy matter to remove a swarm of bees from a tree, without damaging the tree, providing they are not too high, and are easily accessible.

The best plan is to erect a platform as near the entrance of the swarm as possible. The platform should be strong enough to bear the weight of the bees and honey, as, if the bees have had their home in the tree for a year or more, it is quite possible that they would have quite a bit of honey to be removed, and for this reason the platform should be strong enough to bear this weight. When the platform is erected, prepare a three or four-frame nucleus, containing emerging bees, and a queen. (It is not necessary to shake off all bees from the combs when making up this small colony or nucleus). Then the nucleus, after being made up, should be placed for a day or two, in a dark place; screening the entrance so that the bees do not smother, but can not leave the hive. While this nucleus is being prepared a small board with a hole large enough to take a double porter bee escape, should be placed over the bee exit and entrance in the tree. All other entrances and exits must be closed tightly, and the bees only allowed to leave from this one hole; pack rags around board if needed. After this board has been placed over the hole for about 24 hours, the nucleus can then be placed on the platform, with the screen removed, so that the bees in the nucleus can fly free. At this time, also, the bee escape is placed in the hole in the wood, with its entrance inside, so that the bees can come out, but can not return. With the entrance of the nucleus close to the hole in the tree, the bees coming out from the tree, finding they cannot return, will gradually make their home in the hive, with the nucleus. When you make up the nucleus of three or four frames of brood and queen, it will be a good plan to fill up the remainder of the hive with drawn combs, if possible, and if these are not available, use full sheets foundation to fill up hive. Let the nucleus remain on the platform for about three weeks; by this time practically all of the bees will be out of the tree and there will be only the queen and a few bees left. Now you can remove the board containing the bee escape from the hole in the tree, and in a short time the bees from the hive will return and rob out all the honey from the tree. It is well at this time to be sure that the bees in the hive have another hive body or super with drawn combs in, so that they may store all honey that is in the tree, in this super.

A queen will lay eggs right through until September, so that there will be some young bees emerging as late as October, although later in the season there will not be nearly as many eggs laid as during the summer.

F. E. MILLEN.

Watch for head lice on the chicks. If found, rub top of head with a small piece of lard free from salt.

Avoid crowding by keeping in small flocks and by providing roomy coops. Thin out if there are too many.

MILO D. CAMPBELL CHAS. J. ANGEVINE

## BEACH FARM GUERNSEYS

Average yearly production 422.3 lbs. of fat, three fourths of them making their records as two year olds. By the use of a pure bred sire, a big improvement can soon be attained if the right selection is made. The breeding of the Beach Farm Herd is as good as can be found, and we guarantee them to be free from contagious diseases and to be satisfactory in every way or money refunded. Write and let us tell you about them.

**CAMPBELL & ANGEVINE,**  
Coldwater, Michigan.

**Guernsey Bulls** of service age and calves from choice. Adv. reg. breeding. T. V. HICKS, Route 1, Battle Creek, Mich.

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

Guernsey Bulls sold three last 10 days—One left Gr. Son Pauline Spootswood. He is a beauty—and you can buy him. J. M. Williams, No. Adams, Michigan

**Herefords—One Bull Calf.**  
ALLEN BROS. PAW PAW, MICH.

## Do You Want A Bull?

Ready For Service.

From a grand daughter of The King of the Pontiacs. Sired by a bull that is more than a half brother to the Champion Holstein Cow of the World, and whose dam is a 30 lb. 6 1/4 % fat daughter of Pontiac Aggie Korndyke who has more 30 lb. daughters than any other living bull. If you do write for pedigree.

EDWIN S. LEWIS, Marshall, Mich.

## HOLSTEIN BULLS FOR SALE

3 of them 1 year old in Nov. By 31 lb. sire. Dams above 21 lbs. as heifers. Price \$100. Younger bulls by son of Johanna McKinley Segis \$50. up. BLISSVELDT FARMS, Jenison, Michigan

## FOR SALE

SOME VERY FINE YOUNG BULLS

Whose sires have as high as 31 lbs. of butter behind them. As they are young, will make a low price on them. BIGELOW'S HOLSTEIN FARMS, BREDSVILLE, MICH.

**HOLSTEINS**, a nice straight deep bodied, blocky built bull calf, born Oct. 5th, 1915. His 7 nearest dams have A. R. O. records that average butter 7 days 23.36 lbs., milk 539.36 lbs. W. B. READER, Howell, Mich.

**30 lb.** bull for sale, 2 years old, by a son of King of the Pontiacs. Dam sold for \$1000 in Detroit sale. Ferd. J. Lange, Sebawing, Mich.

**\$75** gets Hazel-let grandson of Maplecrest De Kol Farthera and Pontiac Maid 30.2 lb. Born March 26. Dam Pontiac Hesperia 2nd, 14.59 lb. 33.6 lb. her dam's sire brother to sire of world's record cow 41334 lb. milk 1 yr. M. L. McLAULIN, REDFORD, MICH.

**I Have Holstein Bulls,** Bull Calves and Cows that I offer for sale. I can show breeding records, in individuality and accurate prices. L. E. CONNELL, Payette, Ohio.

## "TOPNOTCH" Holsteins

By careful retention, for many years, of largest producing females, and use of superior sires, a breeding herd of wonderful quality has been established. We are selling young bulls of this "TOPNOTCH" quality, of serviceable age, at moderate prices. Information, pedigrees, etc., on application. McPHERSON FARMS CO., Howell, Michigan.

## FOR SALE Two Holstein Bull Calves

6 months old from 20 lb. dams.

FREEMAN J. FISHBECK, Howell, Michigan.

Grade up your herd with one of our Holstein bulls. Their six nearest dams on the sire's side average 24 lb butter in 7 da. The semi-official yearly record of three of these dams, including two two-year old heifers, average 842 lb. of butter and 18,000 lb. of milk. Six to nine months of age and from A. R. O. dams. Peaceland Stock Farm, Three Rivers, Mich. Chas. Peters, Herdsman—C. L. Brody, Owner, Fort Huron, Mich.

## HOBART W. FAY,

MASON, MICH.  
REGISTERED HOLSTEINS  
ESTABLISHED 1904.

**CHOICE HOLSTEIN BULLS**—all from A. R. O. dams Entire herd on Semi. of test for yearly work. 2-yr.-old just finished year's record of over 15,000 lbs. milk, over 1000 lbs. butter record in mature class. Cherry Creek Stock Farm, M. E. Parmelle, Prop., Hilliards, Mich.

**Reg. Holstein Bull Calf.** 2 nearest dams average 90 lb milk per day Pontiac Korndyke and Hengerveld DeKol breeding. Prices right. John A. Rinke, Warren, Mich.

**Holstein Calves**, 10 heifers, and 2 bulls 15-16ths pure. 15 weeks old, beautifully marked, \$20 each, crated for shipment anywhere. Edgewood Farm, Whitewater, Wis.

## FIRST \$100 CHECK

Gets 15 month old, Handsome Thoroughbred Holstein Bull. World record Sire. Dam 26 lb. 3 year old. Have three as good, same age. O. E. Winters, Augusta, Mich.

**ONLY \$50 DELIVERED:** Handsome Holstein bull calf, 3/4 white; sire 25 lb. butter bull; dam 16.39 lbs. A. R. O. Large and heavily boned. ROUGEMONT FARMS, Detroit.

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

**Jersey Bulls for Sale** from high-producing dams, with testing Assn. records, also on semi-official test. O. E. Wehner, R. 6, Allegan, Mich.

## THE WILDWOOD JERSEY FARM

offers for sale choice young Bulls by Majesty's Wonder and R. of M. cows, or cows on R. of M. tests. Will also offer a few cows for sale this fall. Write for pedigree and full particulars. Satisfaction guaranteed. ALVIN BALDEN, CAPAC, MICH.

**Hillside Farm Jerseys** A 10 mos. old, solid color bull now offered for sale. Dam is a R. of M. cow with record of 546 lbs. of butter as a 3-yr. old. He is a fine individual. Price right. C. & O. Deske, Ypsilanti, Mich.



## Veterinary.

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

Mange.—My calves seem to be troubled with a diseased condition of skin, and would like to know what I had better apply. Whatever the disease, it commences around the eyes, face and neck. A. E. J., Walloon Lake, Mich.—Mix together one part sulphur, one-half part of carbonate of potash and three parts fresh lard and apply to the mangy parts once a day, for a few days; then occasionally.

C. G. H. Coats Grove, Mich.—Your heifer died the result of tuberculosis and the calf you write about had better be destroyed, as it will doubtless linger for a while and then die.

Hip Lameness.—About a year ago I bought a mare which had failed for some time to get with foal; we used impregnator; she got with foal and in due time had a colt; she is now lame, but had no trouble foaling. She is kept in a box stall during the day, and out in pasture at night. I fail to find any sore spot, but lately noticed that the muscles of hip are shrinking. She is not losing flesh, therefore I do not believe that she suffers much pain and part of the time she walks without lameness. She has not been treated for her ailment, whatever it is. E. W. Fennville, Mich.—First of all you should ascertain the cause of lameness and at the same time locate it. Apply one part turpentine, one part aqua ammonia and two parts raw linseed oil to muscles of hip three times a week.

Bunches on Hind Leg.—One of my cows has small bunches on hind leg and applying blisters fails to reduce them. These bunches appear to be underneath the skin. I also have a colt that I believe is troubled with worms. M. J. H., Kent City, Mich.—Apply tincture iodine to bunches three times a week. Mix together equal parts of powdered sulphate iron, salt and ground gentian and give yearling colt a teaspoonful at a dose once or twice a day.

Poll-evil.—Is there any cure for a horse that has poll-evil and if so please give it. F. A. F., Kalkaska, Mich.—There is a certain amount of surgical work required in order to obtain the proper drainage and this work should be done by a competent Vet.; if not you will find poll-evil difficult to cure. Inject a small quantity of tincture of iodine into cavity, or apply iodoform every day or two. Many cases of poll-evil are infected by using dirty syringes.

C. H., Delhi Falls, N. Y., writes as follows: "I see Mr. E. H., of Stanton, Mich., inquires how to stop leak in hole in side of teat. I apply a blister made with one part corrosive sublimate and any old grease to make it into a paste, apply this to hole and if this fails to close opening, apply it a second time. We have treated many this way during the past 40 years with success." Veterinarians do not consider this the best remedy; however, I believe it will often close the opening.—Ed.

Roarer.—Have a mare that breathes too fast and can be heard for quite a distance; this mare appeared to be well until she had her colt, and that is about two months ago. A. C. B., Blaney, Mich.—Rub her throat with camphorated oil once a day and give her 1 dr. fluid extract lobelia and ¼ oz. of Fowler's solution at a dose in feed or water two or three times a day. She should be fed no clover, or musty, dusty, badly cured fodder besides; she should not be allowed to eat too much bulky food at a time.

Thoroughpin.—I have a three-year-old colt with a bunch on each side of hock, but it is not painful. J. F. C., Hersey, Mich.—Apply equal parts of tincture iodine and spirits of camphor to bunches three times a week.

Sprained Stifle Ligaments.—I have a five-year-old mare which, when first led out of stable, is inclined to drag hind feet, suddenly a snapping noise is heard, then she travels sound. V. C. S., Mulliken, Mich.—Clip hair off stifle joints and apply one part powdered cantharides and four parts lard every two weeks.

Sprained Muscles.—I have a mare that foaled on May 1, which was wabbling on hind legs right after foaling, but improved some; now the muscles of hips are somewhat shrunken. R. J. B., Tyre, Mich.—Apply equal parts of turpentine, aqua ammonia and olive oil to hip muscles three times a week.

Hernia.—I have a stud colt three months old that has a navel breach and I would like to know how to treat it. W. M., Montrose, Mich.—Leave your colt alone until cool weather sets in, then have him operated on by a competent Vet. who has had experience in treating this kind of a case.

## Better Silage in a Life-time Silo

Experiment Station tests prove that the nearer silos approach being air-tight, the better the silage and the less the loss.

**ZYROMETAL SILOS**

are positively air-tight—doors and all—made of anti-corrosive NO-CO-RO METAL, the great rust-resistant. You get a handsome silo that stands solid as a monument and lasts a life-time—windproof, fireproof, crackproof, weatherproof, collapse proof, repair proof.

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Maple Lane R. of M. JERSEY HERD offers for sale, tuberculin tested cows, heifers, bulls, and bull calves backed by several generations of R. of M. breeding. IRVIN FOX, Allegan, Michigan.

**Jerseys For Sale** Bull calves ready for service and cows and heifers soon to freshen. Meadowland Farm, Waterman & Waterman, Ann Arbor, Mich.

**REGISTERED JERSEY BULLS FOR SALE** 1 yearling, and Bull calves from 8 to 10 months old. Also 3 cows. Write your wants. SMITH-PARKER, R. D. No. 4, Howell, Michigan.

### BIDWELL SHORTHORNS

For "Beef and Milk" Registered bulls, Scotch-topped roans, reds and whites for sale. Farm at N. Y. C. Depot; also D. T. & I. R'y. Address G. R. Schroder Mgr. BIDWELL STOCK FARM Box B, Tecumseh, Mich.



Albion Stamp 352670

**Shorthorn Cattle of both Sex for Sale** W. W. KNAPP, Howell, Michigan.

**DAIRY BRED** Shorthorns of best Bates strains, young bull 8 months old for sale, price \$150. J. B. HUMMELL, MASON, MICHIGAN.

**FOR Sale—Reg. Short Horn Bulls** by Maxwalton Monarch 2nd, a son of Avondale, from 8 to 10 mos. old. John Schmidt, Reed City, R. No. 5, Michigan.

**SHORTHORN COWS FOR SALE:** No Bulls at present. R. R. Station, Elsie. H. B. PETERS, Carland, Mich.

**AND POLLED DURHAMS FOR SALE.** Have red roan and white. Have over 100 head in herd. C. Carlson, Leroy, Mich.

**Shorthorns—Dairy or beef bred.** Breeding stock all ages for sale at farmers prices. C. W. Crum Secy. Cant. Mich. Shorthorn Breeders Assn. McBride, Mich.

**Registered** Shorthorn Cattle, young bulls and heifers \$100.00, bred cows and heifers \$150.00. Write, W. J. BELL, ROSE CITY, MICHIGAN.

**Milking** Shorthorns, roan 3 year old, Bates bred herd \$250. Young bulls and heifers. DAVIDSON & HALL, TECUMSEH, MICHIGAN.

### SHORTHORNS FOR SALE

8 Bulls, also females. W. B. McQuillan, Howell, Mich.

**Reg. Shorthorns** Two bulls, 12 and 23 months old, both dark red, dual purpose type, cows and heifers, all ages. Wm D. McMullen, R. No. 1, Adrian, Mich.

**Red Polled Cattle.** Have a fine young bull and O. I. C. pigs for sale. John Berner and Son, Grand Ledge, Mich.

**FOR SALE**—16 mo. 5 heifers. Majesty Int. Prince Bull RAY BAKER, HAMBURG, MICHIGAN.

**HEREFORDS:** 4 Bulls, 4 Heifers. EARL C. McCARTY, Bad Axe, Michigan.

**\$500 Bull Calf for \$100**

His sire is a 35 lb. bull. Dam a 13 lb. 2 yr. daughter of 19 lb. 2 yr. old, ½ white. A. R. Eastman, - Howell, Mich.

### HOGS.

**Berkshires** of best breeding, of various ages, either sex, all registered stock, no akin, special reduced price. Write your wants quick. Mitchell's Lakeside Farms, K. 2, Bloomington, Mich.

### SWIGARTDALE FARM HOLSTEINS.

Several choice Bull Calves, from A. R. O. Dams, with the best of Long Distance backing at Farmers' prices.

**BERKSHIRES** with size, breeding, and individuality that is hard to beat. See our exhibit at the State Fair. Prices reasonable; satisfaction guaranteed. Swigartdale Farm, Petersburg, Mich.

**The Very Finest Berkshire Pigs Cheap** C. S. BARTLETT, Propr. Pontiac, Michigan

**Berkshires.** I have 6 choice fall gilts bred for Sept. farrowing at \$25 each for immediate delivery. A. A. PATTULLO, R. 4, Deckerville Mich.

**BERKSHIRE SOW** and yearling gilt bred to farrow early in September. Boars ready for service. Also open gilts. Chase Stock Farm, R. 1, Marlette, Mich.

**ROYALTON Bred Berkshires.** Extraordinary offer. R. Bred sows, boars ready for service and pigs both sexes, selling out, all registered stock with papers. D. F. VALENTINE, Supt., Temperance, Mich.

## Jerseys and Duroc Jerseys

\$75 buys a fine broken colored Jan. bull calf whose dam has an authenticated butter record of 576 pounds. Also a choice two-year-old bull.

Choice herd boars of all ages fit to head best herds.

See our Exhibit of Durocs at Detroit.

**BROOKWATER FARM, Ann Arbor, Michigan.**

### DUROC JERSEYS

A choice lot of spring pigs, both sex, pairs and trios, not akin. Prices reasonable. Send for pedigrees. THE JENNINGS FARMS, R. F. D. 1, Bailey, Mich.

**Duroc Jersey Boars** Two June 1915; 12 April 1916. Write for description. I guarantee satisfaction. J. H. Banghart, East Lansing, Mich.

**Duroc Jerseys** Some yearling & Spring boars good enough to head your herd. Will sell Eureka Cherry King 67145. Ask about him. W. C. Taylor, Milan, Mich.

**Duroc Jerseys—Fall and spring pigs either sex, from choice strains.** S. C. STAHLMAN, CHERRY LAWN FARM, Shepherd, Michigan.

**Duroc Jersey** Sows and gilts bred for early Sept. farrow. Spring pigs, either sex. E. D. Heydenberk, Wayland, Mich.

**For Sale,** Duroc Jerseys, choice breeding spring pigs either sex. Prices right. John McNeill, Station A, R. 4, Bay City, Mich.

**Duroc Jerseys,** Apr. pigs either sex, boars ready for service and a few bred sows for Sept. and Oct. Some Holstein cows bred for fall. E. H. Morris, Monroe, Mich.

**DUROC JERSEYS**—all sold out for the present. Wm. W. Kennedy, Grass Lake, Michigan.

**Duroc Jerseys** I have some good last September Boars and gilts. Gilts will be bred for September farrow. H. G. Keebler, R. No. 5, Cassopolis, Michigan.

**Dobson's Durocs** Combined, size, quality, breeding. Herd boars, spring boars, spring sows for sale. Orlo L. Dobson, Quincy, Michigan.

**Duroc Jerseys** Gilts of the large heavy boned type bred to a Son of Orion Cherry King the greatest boar of his breed. Bred for early Sept. farrow. F. J. DRODT, R. 1, Monroe, Michigan.

**Duroc Jerseys.** Sows Bred for Aug. and Sept. litters, also early Spring Boar pigs. M. A. BRAY, OKEMOS, (Ingham Co.) Mich.

**Duroc Jerseys,** bred sows, spring boars and gilts, one two yr. old boar sired by Hoosier Grand Champ, Mich. State Fair 1915. J. Robert Hicks, St. Johns, Mich.

**ANOTHER LOT** of those big boned Duroc PIGS at \$10 and \$12 apiece. Write quick if you want one. FRANK LAMB, Cassopolis, Michigan.

**CHESTER WHITES** Sows bred for Sept. farrow, spring pigs in pairs, not akin. F. W. ALEXANDER, Vassar, Mich.

**Raise Chester Whites**

**Like This**

the original big producer



I HAVE started thousands of breeders on the road to success. I can help you. I want to place one hog from my great herd in every community where I am not already represented by these fine early developers—ready for market at six months old. Write for my plan—More Money from Hogs. G. S. BENJAMIN, R. F. D. 10 Portland, Michigan

**O. I. C. BRED GILTS,** Also young boars shipped C. O. D. J. CARL JEWETT, Mason, Mich.

**Registered O. I. C. Swine**

**Stock For Sale—All Ages**

Correspondence Solicited, Visitors Always Welcome



Brightside Farm Grand Ledge, Mich.

**O. I. C. Swine**—A nice lot of spring pigs. Write your wants. Meadow View Stock Farm, Holland, Michigan. R. R. No. 5.

**400 Big Type O. I. C. and Chester White Pigs** From Feb. Mar. and Apr. farrow sired by the five best boars in the state. School Master 52707 who won more champions, defeated more champions than any boar show 1915. Abo 2nd, sire to our undefeated breeders young herd at 7 state fairs. Allen junior champion at Wis. State fair 1914, and Captain Jim 33161, under 6 months boar and Junior champion at every state fair show 1915. Then we have Le Doux model 29015, first in class at Sioux City, Iowa, 1914. Get our catalogue, its free. We Register Free; Guarantee satisfaction in every way. ROLLING VIEW STOCK FARM, Cass City, Mich.

**O. I. C.** October boars weighing 200 lbs. at \$25 each for April shipment. C. J. THOMPSON, Rockford, Michigan.

**O. I. C's.** Send me your order for choice spring boars, shipped C. O. D. and registered in purchaser's name. G. P. ANDREWS, Dansville, Mich.

**O. I. C. Swine.** If you are in the market for a Spring boar, of April farrow write to H. W. Mann, Dansville, Mich.

**O. I. C.** Spring pigs either sex, large bone and good growth. Prices right. A. J. BARKER, R. R. 1, Belmont, Michigan.

**O. I. C's** Some extra good fall boars; also gilts. Satisfaction guaranteed. A. R. GRAHAM, Flint, Michigan.

**O. I. C. Stock all Sold** JULIAN F. CLAXTON, Swartz Creek, Mich.

**O. I. C. and Chester White Swine.** Strictly Spring pigs, now ready to ship. Can furnish in pairs not akin. These pigs are sired by Lengthy Prince and Model 1st. Two as good big type boars as there is in the breed. I will ship O. O. D. and record them free. NEWMAN'S STOCK FARM, MARLETTE, MICHIGAN, R. No. 1.

**O. I. C. and Chester White Swine.** Spring pigs, of kin. E. B. MILETT, Fowlerville, Michigan.

**O. I. C. SWINE:** If you are interested in O. I. C's, let me start you with a choice pair or trio, not akin, or a gilt, due to farrow about September first. A. J. GORDEN, R. No. 2, Dorrr, Mich.

**O. I. C's** Pairs and Trios no akin. 2 Reg. Holstein bulls 6 and 8 months old. Cloverleaf Stock Farm, Monroe, Mich.. R. No. 1.

**O. I. C.** Choice Gilts bred for fall Farrow and Spring Pigs. Prize Winning Stock. Write for low price. A. V. HATT, Grass Lake, Michigan.

**O. I. C.** Swine and Reg. Holsteins, few boar pigs of May farrow at a reasonable price, quality considered. ELMER E. SMITH, Redford, Michigan.

**O. I. C's.** 4 last fall sows to farrow in Sept. and Oct. O. 5 last fall boars, big strong growthy ones, last spring pigs not akin. Good stock, order now. Farm ¼ mile west of depot. Otto B. Schulze, Nashville, Mich.

### O. I. C. HOGS

Fine April Gilts and Males. Pairs no relation. At a bargain if taken at once. J. R. Way, Three Rivers, Mich.

### Boars at Half Price

We still have a few big boned, big type Poland China boars ready for service, weighing up to 250 lbs. not fat at \$20 & \$25 each. Registered in buyer's name. Also registered black Percheron Stallion 2 years old \$250.00. J. C. BUTLER, Portland, Mich.. Bell Phone.

**BIG TYPE** Poland China sows bred for July and August farrow, Spring pigs. G. W. HOLTON, Route 11, Kalamazoo Michigan.

**Big Type Poland Chinas**—Boars of August farrow, booking orders for spring pigs. A. A. WOOD & SON, Saline, Michigan.

### Poland China Spring Pigs

Our herd sire was Champion and Grand Champion at the State Fair last fall. Our sows are great big, stretchy, splendid individuals, with best breeding. Pigs from such matings will please you. Get our prices, **HILLCREST FARM** KALAMAZOO, MICH.

**FOR SALE,** P. C. Sows, "Big Type" bred for Sept. farrow. Extra good 7 months boar. March and April pigs. S. C. B. Minorcas, R. W. Mills, Saline, Mich.

**Large Strain P. C.**—Two nice fall boars left, a few Gilts to farrow in Aug., Sept. and Oct., get one of these sows with pigs by side. H. O. SWARTZ, Schoolcraft, Michigan.

**Large Type P. C.** Gilts and sows. Bred for Mar. and April farrow. Sired by Big Des Moines, Big Knox Jr., and Giant Defender. Bred to Big Knox Jr. Smooth W under 3 and Big Jumbo, four great boars in state. Come or write, W. E. Livingston, Parma, Mich.

**BIG Type P. C.**—100 pigs of Mar. and Apr. farrow. Either sex, sired by Big Type King Tesemeyer A. Wonder Jr. and Mow's Big Bone. We pay exp. charges and record free. W. Brewbaker & Sons, Elsie, Mich.

**For Sale Poland Chinas** either sex, all ages. Something good at a low price. P. D. Long, R. F. D. No. 8, Grand Rapids, Mich.

**Heavy boned Poland China Spring pigs** from large Prolific sows, also young and older sows bred for Sept. farrow. ROBERT NEVE, Pierson, Michigan.

**Large Type P. C. Sows & Gilts** all sold. Have 3 extra good spring boars. Sired by Big Defender. W. J. HAGELSHAW, Augusta, Michigan.

**Large Yorkshires** August and September pigs. 2 spring boars. Prices reasonable. W. C. COOK, Route No. 1, ADA, MICHIGAN.

**GROWTHY THE DISEASE PROLIFIC "MULEFOOT" RESIST- PROFITABLE HOG ING**

FOUNDATION STOCK FROM BEST BLOOD OF BREED

**THE CAHILL FARMS**

KALAMAZOO - - - MICHIGAN

**HAMPSHIRE SWINE** Spring Pigs, registered. John W. Snyder, R. 4, St. Johns, Mich.

**H. H. Halladay O. H. Halladay & Son** Breeders of Hampshire Swine. Write your wants. Clinton, Mich.

**Hampshire Swine.** Bred Sows and gilts for August and September farrow s. Spring pigs, both sex. FLOYD MYERS, R. No. 9, Decatur, Ind.

**HAMPSHIRE** Boars, sows, gilts and pigs. Choice stock. A. E. BAON & SON, Sheridan, Michigan.

**BRED SOWS** for Aug. and Sept. farrow \$25 to \$50 that weigh 350 lbs. to 600 lbs. NEWTON BARNHART, St. Johns, Mich.

### SHEEP.

### SHROPSHIRE

I will be at the State Fair with 20 field rams. All are for sale and are a better bunch than has been seen in Detroit in recent years. ROPE-KON FARMS, S. L. WING, Prop'r. Kinderhook, Mich.

**The Ingleside Farm** will not make a show of Shropshire shires at the fairs this fall but has a good supply of registered rams and breeding ewes for sale. If you are in need of any Shropshires, let us know. H. E. POWELL, IONIA, MICH.

**Oxford Down Sheep.** Good yearling field Rams and ewes of all ages for sale. M. F. GANSLEY, Lennon, Michigan.

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

### HORSES

**Percherons, Holsteins, Angus, Shropshires, Durocs** DORR D. BUELL, Elmira, Michigan.

**FOR SALE**—Registered Percheron Stallions, Mares and Fillies at reasonable prices. Inspection invited. F. L. KING & SON, Charlotte, Mich.

**PERCHERONS** Yearling and weanling stud colts. Duroc pigs, either sex. E. J. ALDRICH, Tekonsha, Cal. Co. Mich., Bell Phone.



## THE BIGGEST BUSINESS

(Continued from Page 179)

club we're a-talking about?" says Silas. "Ain't that what I been a-saying? What do you mean—folks?" Silas winds up, irritable. Silas knows customers, agents, correspondents, partners, clients, colleagues, opponents, plaintiffs, defendants and competitors. But he don't know folks.

"Folks," I says. "Why, folks, Silas. Why, here in this room with you that we say have made Friendship Village, are setting them sixty-one employes of yours that have helped make it too. And all the tens that will come afterward, and that have come before to help to make the village by the work of their hands. They belong—they're the village. They're us. Oh, let's not do things for them—let's do things with them. Let's meet all together, employers and employes, men and women, and let's take up together the job of being a town. Let's not any of us have more than our share, and then deal out little clubs, and old furniture, and magazines, and games to the rest of us. You men are finding out that all your old catch words about advancing the town and making business opportunities, have got something lacking in them, after all. And us women are beginning to see that twenty houses to a block, each keeping clean and orderly and planted on its own hook, each handing out old clothes and toys down to the Flats, each living its own life of cleanliness and home and victual-giving-at-Christmas, that that ain't being a town after all. It isn't enough. Oh, deep inside us all ain't there something that says, I ain't you, nor you, nor you, nor five thousand of you. I'm all of you. I'm one. 'When,' it says, 'are you going to understand, that not till I can act like one, one united one, can I give any glimpse whatever of what people might be?' Don't let us go on advancing business and multiplying our little clubs and philanthropies. Instead, let's get together—in the kind of meetings they use to have in the old first days in America—and let's just talk over the next step in what's to become of us. Let's dream—real far. Let's dream farther than gift-giving—and on up to wages—and mebbe a good deal farther than that. Let's dream the farthest that folks could go—"

I didn't know but they'd think I was crazy. But I'd be glad to be that kind of crazy. And the glory is that more folks and more folks are getting crazy the same way.

But they didn't think so—I know they didn't. Because when I got through, they clapped their hands, hard and hearty—all but Silas, that don't think a chairman had ought to show any pleased emotion. And times now when I'm lonesome, I like to remember the rest of the talk, and it warms my heart to remember it, and I like to think about it.

For we give up having the club. Nobody said much of anything more about it, after we got Silas silenced. And this was the notice we put the next night in the Friendship Evening Daily. Nobody knows better than I the long road that there is to travel before we can really do what we dreamed out a little bit about. Nobody better than I knows how slow it is going to be. But I tell you, it is going to be. And the notice we put in the paper was the first little step we took. And I believe that notice holds the heart of today.

It read:

"Will all them that's interested in seeing Friendship Village made as much a town as it could be, for all of us and for the children of all of us, meet together in Post Office Hall tomorrow night, at seven o'clock, to talk over if we're doing it as good as we could."

For there was business. And then there was big business. But the biggest business is taking employers and employes, and all men and women—yes, and inmates too—and turning 'em into folks.

10,850 MILES

WITHOUT STOPPING THE MOTOR

KING EIGHT CYLINDER

A registered STOCK car (everything stock—gear ratio, ignition, tires, wheels, etc.) made this unparalleled record in a Car Owners' Service Test conducted under OFFICIAL A. A. A. sanction and supervision.

Sheepshead Bay Speedway and Long Island, New York roads were the scenes of this sensational trial which began at 12:14 P. M. June 15th and finished at 12:14 P. M. June 29th. Officials of the American Automobile Association maintained a daily 24 hour vigil during the entire two weeks. Many newspaper and motor journal representatives and parts manufacturers were in constant attendance.

The sturdy KING ran day and night through rain, fog and boiling sun without requiring a single replacement or adjustment.

10,850 miles equals about two years' travel in the hands of the average owner, yet in this entire mileage the car was stopped (with the motor running) for a total of but 15 hours, 25 min. 41 sec. On this basis the test demonstrated that a KING EIGHT, even with the motor running continuously for two years, requires only *nine minutes per week* of an owner's attention for all service—gasoline, water and oil fillings, tire changes, battery care, etc.

And most astounding of all, the KING made this 10,850 miles with a total labor expense of considerably less than *ten dollars*.

During the entire 10,850 miles a weight equal to five passengers was carried and the car maintained an average speed of 34 miles per hour, excluding stops.

An examination made after the test proved the car to be in perfect running condition and ready for another trial of the same or greater length.

This great KING achievement tops off the series of remarkable road tests recently conducted on the Pacific and Atlantic seaboard. Climbing tortuous Mt. Wilson in Southern California sealed in high gear; traveling 987 miles in high gear from Los Angeles to San Francisco and return, and driving 544 miles in high gear from Providence to Providence via Albany and New York City, are three remarkable accomplishments of the eight cylinder KING all within a fortnight.

The accuracy of every statement in this advertisement can be proved by impartial, official documents. These gruelling trials have raised still higher the proud estate of KING ownership, and to prospective car purchasers this pioneer eight cylinder car now offers a record which can mean nothing less than ABSOLUTE SATISFACTION IN PERFORMANCE, SERVICE and OPERATION ECONOMY.

7-passenger, 60 Horse Power Touring Car \$1350  
Roadster, \$1350. Sedan, \$1900 Prices F. O. B. Detroit

KING MOTOR CAR COMPANY DETROIT

**Look Men!**  
A Fanning Mill With  
Its Own Power Plant

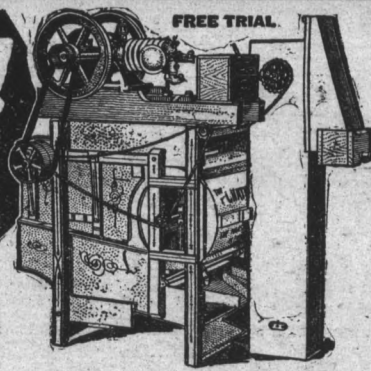
Write a postal at once for my grand Free Book on cleaning and grading grain, and all about the wonderful Chatham Motor Mill which runs by gas power. You can clean and grade all your grain in a jiffy—no work to it. **Runs itself!** And think! 40 to 60 bushels per hour! It's the genuine Chatham Mill and a cracker jack 1 1/4 H. P. general utility Gas Engine connected and ready to run—each sold at an unbeatable low price. Free trial? Yes, indeed! Not a penny till it makes good! Liberal credit, too—not a cent of cash required.

**CHATHAM MOTOR MILL**

Sold three ways—first, complete mill with engine and power attachment; second, mill and power attachment only (where you already own an engine); third, regular hand-power mill (easiest running machine on earth). Clean and grade your fall Wheat Seed and your Market Grain! And your grass seed! And next spring your seed corn, oats, etc.! We are specialists on cleaning any Grain or Grass seed in America.

Thousands are making extra cash profits this way. Let us prove it to you. Remember—free trial, liberal credit, hedrock prices. Send now for Free Book which tells all!

**VETCH GROWERS** I make a special machine for separating Vetch from rye, oats, etc. Ask for circular if interested in this.  
**MANSON CAMPBELL CO.,** Dept. A-C-2  
Detroit, Mich. Kansas City, Mo. Minneapolis, Minn.



**ROSS Silo Fillers** Produce the Best Ensilage Guaranteed for Life of Machine

The Ross is not an ordinary fodder cutter but a special made Silo Filler. Exclusive features including Steel Cutting Apparatus and Steel Blower. The Ross Nos. 18-20-24 are for the Threshermen who make a business of filling silos, also for silo users who want a partnership Silo Filler.

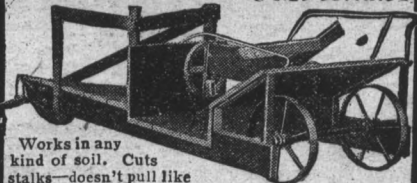
**Buy Early and Save Money**  
If you intend to buy this year, write quick for special proposition. Delay means advance in price.

**Our 66th Year**  
THE E. W. ROSS CO. BOX 114 SPRINGFIELD, OHIO



**The PERFECT CORN HARVESTER**

Sold Direct \$19.50 JUST the THING for SHOCK or SILO CUTTING



Works in any kind of soil. Cuts stalks—doesn't pull like other cutters. Absolutely no danger. **Cuts Four to Seven Acres a Day** with one man and one horse. Here is what one farmer says: "Loudonville, Ohio, Dec. 4, 1915 Love Mfg. Co.: Dear Sirs: The 'Perfect' is all right. I wouldn't want to be without it for twice what it cost me. Some of our corn was very weedy, but the harvester did the work. Respectfully, Herman Fritz"

**SOLD DIRECT TO THE FARMER**

Send for booklet and circulars telling all about this labor-saving machine; also containing testimonials of many users. Send for this circular matter today.  
**LOVE MANUFACTURING COMPANY**  
Dept. 36 Lincoln, Illinois

**Rides Like An Auto**

The New Patented Harvey Bolster Springs are made just like the finest automobile springs. They absorb all the bumps, jars and jerks of rough, uneven roads, and change an ordinary wagon into an easy-riding spring wagon. A set on your wagon will enable you to get your perishable produce to market in first class condition always. **Insist on Harvey's.** If your dealer can't supply you write us for free catalog and price list.

